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Effectiveness of Occupational Therapy along with Coping Strategies on Auditory Hallucination and Occupational Functioning in Schizophrenia

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Abstract: ***Background:*** *Auditory hallucinations are the most common symptoms to occur in schizophrenia. About 70% of schizophrenics have auditory hallucinations termed as Schneider's First Rank Symptoms (SFRS). Persistent auditory hallucination interferes with one's ability to engage in self-care, work and leisure tasks thereby making it difficult to engage in meaningful tasks or relationships. Occupational Therapists also work with patients having diagnosed with schizophrenia. Although the topic of hallucinations has been widely addressed in psychiatry literature, it has been ignored in the occupational therapy literature. Usually, Occupational Therapists that work with patients having psychosocial dysfunctions evaluate for hallucinations as a part of the mental status examination and provide a general intervention for the patient i.e. we do not include any specific intervention plan for hallucination in particular. So in this study, we will try to use some of the coping strategies as an adjunct to conventional occupational therapy to see if it is effective on auditory hallucinations and their occupational functioning in chronic schizophrenic patients.* ***Aim:*** *The purpose of the study was to determine the Effectiveness of occupational therapy along with coping strategies on auditory hallucination and occupational functioning in schizophrenia.* ***Method:*** *22 patients of schizophrenia with auditory hallucination were recruited and were divided 11 each into control and experimental group. The control group received conventional occupational therapy while the experimental group received coping strategies along with conventional occupational therapy for six weeks. The changes in dimensions of auditory hallucination and occupational functioning were assessed on PSYRATS-AH and COTE scales respectively pre and post intervention.* ***Results:*** *It revealed statistical significance in both PSYRATS-AH and COTE pre and post test in the experimental group ($p<0.000$). The post test scores for PSYRATS-AH were 39.00 (SD 1.67) for control group and 13.82 (SD 3.66) for experimental group. The post test scores for COTE were 82.18 (SD 5.27) for control group and 52.00 (SD 9.18) for experimental group.* ***Conclusion:*** *Auditory hallucination reduced and Occupational functioning improved in the experimental group which indicates that Occupational Therapy is effective along with coping strategies*

Keywords: Schizophrenia, Auditory Hallucination, Coping Strategies, Occupational Functioning

1. Introduction

Schizophrenia can be termed as a severe mental disorder, distinguished by considerable disturbance in thinking, affecting language, self-concept and perception. It usually involves psychotic features, such as hallucinations and delusions. It can significantly hinder the functioning of an individual through the loss of an acquired capability to earn a livelihood or disruption of studies.[1]

An auditory hallucination is hearing one or more talking voices without any auditory stimulus. They are the most common and highly distressing positive symptom in patients with schizophrenia, occurring in about 70% of those with the diagnosis.[2]

Coping strategies are specific efforts, consciously and unconsciously used, which individuals utilize to efficiently cope with stress. The various strategies for coping include cognitive, behavioural and physiological strategies. These coping strategies are set off when acute or chronic stress makes it difficult to solve the situation using usual skills. Adequate coping is viewed as flexible and appropriate, while inadequate coping is viewed to be rigid and socially inappropriate.[3]

Occupational Therapists also work with patients having diagnosed with schizophrenia. Although the topic of hallucinations has been widely addressed in psychiatry literature, it has been ignored in the occupational therapy literature. Usually, Occupational Therapists that work with patients having psychosocial dysfunctions evaluate for hallucinations as a part of the mental status examination and provide a general intervention for the patient i.e. we do not include any specific intervention plan for hallucination in particular. So in this study, we will try to use some of the coping strategies as an adjunct to conventional occupational therapy to see if it is effective on auditory hallucinations and their occupational functioning in chronic schizophrenic patients.[4]

2. Method

22 patients were selected fitting the inclusion criteria. The purpose of the study was explained to the patients and written consent form was taken. Demographic details were obtained. The patients were divided into the experimental group and the control group. A Pre-test was done using PSYRATS-AH subscale and COTE scale for auditory hallucination and occupational functioning respectively. Intervention was carried out for 1.5 hours, 3 times in a week for 6 weeks. A Post-test was done using PSYRATS-AH subscale and COTE scale for auditory hallucination and occupational functioning respectively

For 6 weeks patients were given the following: for Control Group- Conventional Occupational Therapy and for Experimental Group - Conventional Occupational Therapy + Earmuffs + Humming. Earmuffs- monoaural occlusion with left sided earmuffs with auditory localization activities of ringing bells with eyes closed from various regions in space, listening to music and answering to related questions posed

by the therapist Humming- humming a single note silently followed by reading a paragraph loudly and with understanding Conventional Occupational therapy- movement therapy, table top activities (Puzzles, simple table games), relaxation therapy (deep breathing exercises), group activities (envelope making, carrom) and social skill training

3. Results

Table 1 shows male and female distribution as per their gender. The control group comprised of 11 participants, 6 females (54.5%) and 5 males (45.5%). The experimental group comprised of 4 females (36.4%) and 7 males (63.6%). In case of age distribution, majority of the participants were from age group 51-54.

Table 2 shows a comparison of the pre-test measures between control and experimental groups. Baseline outcome measures between the two groups had no marked difference.

Table 3 shows the post-test measures between the control and experimental group. It was noticed that there was marked difference both the outcome measures i.e. PSYRATS-AH and COTE. Hence, Occupational Therapy along with coping strategies has improved participants' auditory hallucinations and occupational functioning.

4. Discussion

This chapter provided justification of the findings obtained in the previous chapter. The study tested the effectiveness of Occupational Therapy along with coping strategies on occupational functioning and auditory hallucination in patients with Schizophrenia.

Table 1 explained about the demographic distributions. More than half of the participants were in the age group of 51-54 years while one-third of the participants were from the age group of 39-44.

Table 2 explains the outcome measures in the control group. This group underwent conventional occupational therapy. There is enough literature to suggest the impact of occupational therapy to improve occupational performance and interpersonal relationships for patients with schizophrenia.[5] There was no marked difference between the outcome measures. The mean score for PSYRATS-AH in the pre-test was 39.91 (SD 1.21) and post-test was 39 (SD 1.67). The mean score for COTE in the pre-test was 82.82 (SD 5.74) and the post-test score was 82.18 (SD 5.27).

Table 2 explained the outcome measures in the experimental group. This group underwent conventional occupational therapy along with coping strategies (Earmuffs and Humming). Earmuff helps in reducing the load on the auditory processing ability by improving the attention span of the patient. Earmuffs help as an aid for distinguishing real sounds from auditory hallucinations.[6] The rationale for giving earmuffs in left ear is that normally non-hallucinating humans have right ear advantage i.e. we hear more through right ear and understand better.[7] Humming a single note can reduce auditory hallucinations up to 59%.[8] It is known that subvocal activity is increased during auditory hallucinations and they fail to understand that these voices are produced by themselves.[9] By humming and reading a paragraph aloud with understanding the subjects engaged in active subvocal activity and by explaining what they just read required them to be attentive and in contact with reality which improved their self awareness. There was marked difference between both outcome measures. The mean score for PSYRATS-AH in the pre-test was 36.64 (SD 2.01) and post-test score was 13.82 (SD 3.66). The mean score for COTE in the pre-test was 79.82 (SD 5.44) and post-test score was 52 (SD 9.18).

Table 2 and 3 compared both pre-test and post-test scores of control and experimental groups. The pre-test scores in both measures did not show any marked difference in both control and experimental groups. The post-test scores however, showed marked difference in both the outcome measures. Occupational Therapy probably helped subjects to be actively engaged in purposeful activities for longer duration of time and thus sustain contact with reality; this also improved their self awareness. The cumulative effect of occupational therapy and coping strategies helped them reduce auditory hallucinations. As the hallucinations decreased their occupational functioning also improved markedly.

5. Conclusion

Occupational Therapy helps patients with auditory hallucination to be in contact with reality and have a better insight about self. In this study the patients have reported that use of coping strategies like earmuffs and humming with occupational therapy led to a better control of the auditory hallucinations. As the auditory hallucinations declined patients' occupational functioning also improved which proved that occupational therapy along with coping strategies is effective in reducing auditory hallucinations and improving overall occupational functioning of the patient.

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Illustrations (Tables and Figures)

Table 1: Demographic distribution of variables based on Gender and Age

Demographic Variable		Control		Experimental	
		Frequency	Percentage	Frequency	Percentage
Gender	Female	6	54.5	4	36.4
	Male	5	45.5	7	63.6
Age	27 – 32	0	0.0	1	9.1
	33 – 38	1	9.1	2	18.2
	39 – 44	2	18.2	2	18.2
	45 – 50	1	9.1	3	27.3
	51 - 54	7	63.6	3	27.3
	Mean ± SD	48.27 ± 5.815		44.18 ± 8.796	

Table 2: Pre-test outcome measures between control and experimental group

Pre Test	Group	N	Mean	Std. Deviation	t - Value	P - Value
PSYRATS-AH	Control	11	39.91	1.221	1.609	0.138 NS
	Experimental	11	36.64	2.014		
COTE	Control	11	82.82	5.741	1.258	0.223 NS
	Experimental	11	79.82	5.437		

Table 3: Post-test outcome measures in control and experimental groups

Post Test	Group	N	Mean	Std. Deviation	t - Value	P - Value
PSYRATS-AH	Control	11	39.00	1.673	20.774	0.000 S
	Experimental	11	13.82	3.656		
COTE	Control	11	82.18	5.269	9.460	0.000 S
	Experimental	11	52.00	9.176		

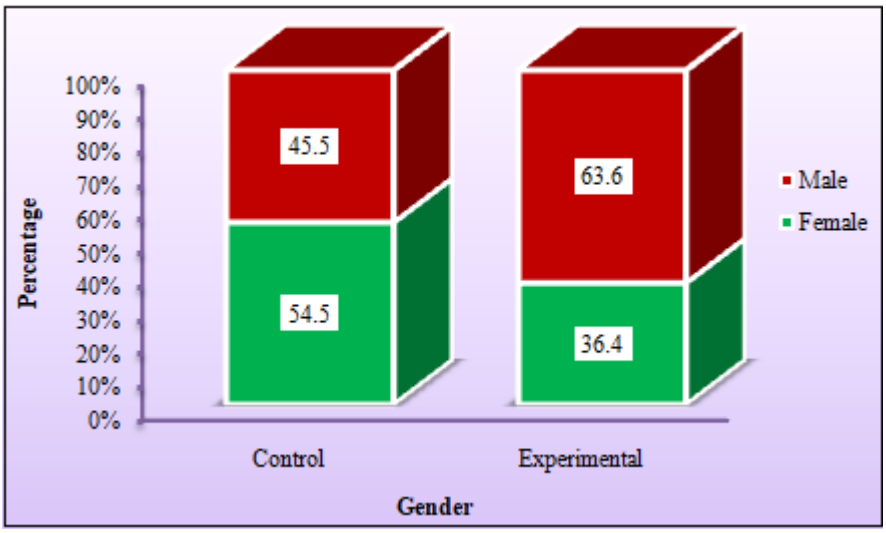

Figure 1: (a) Demographic variation (gender-wise) experimental and control Group

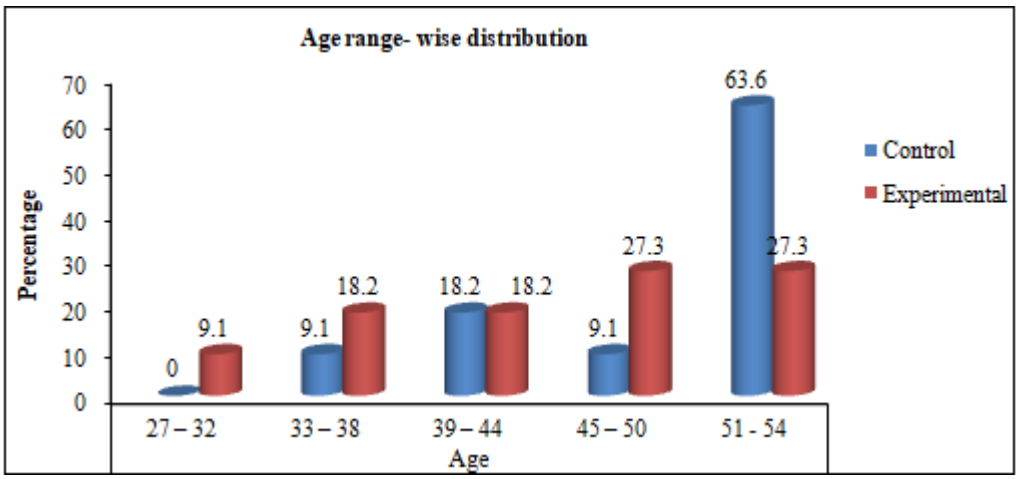

Figure 1 (b): Demographic variation (age range- wise) control and experimental group

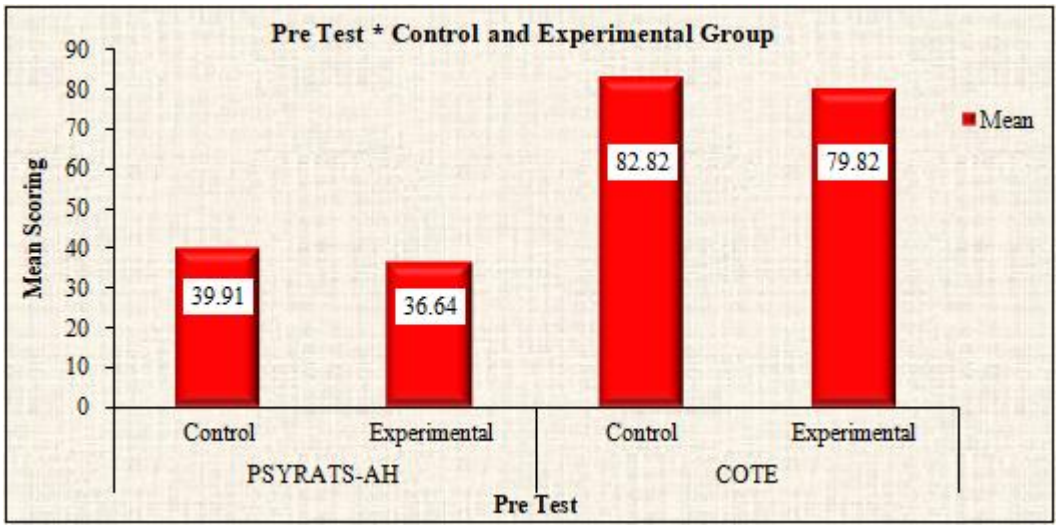

Figure 2: Pre-test outcome measures between control and experimental group

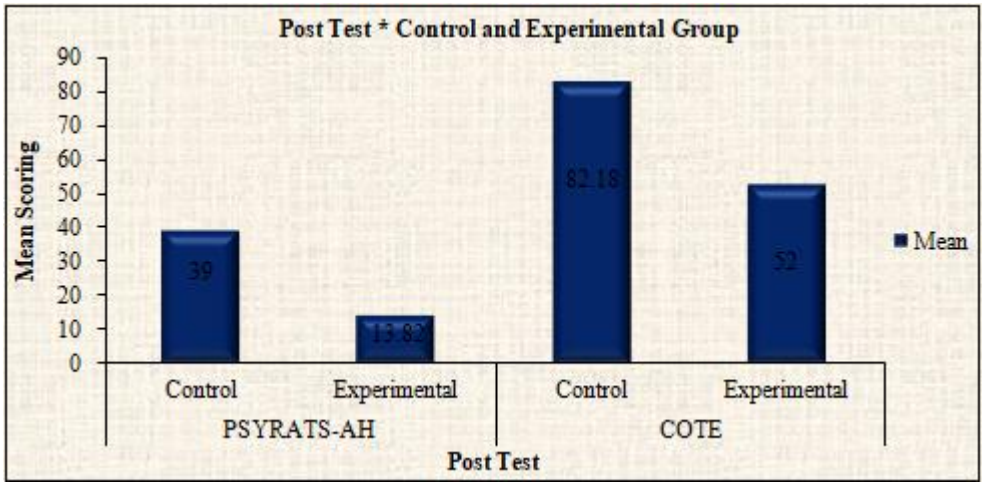

Figure 3: Post-test outcome measures in control and experimental groups

Annexure

Annexure 1: Demographic Data Form

1) Name of the patient:
2) Age:
3) Gender:
4) Residential address:
5) Contact number:
6) Date of evaluation:
7) Duration of patient illness:
8) No. of hospitalization:

Annexure 2: Comprehensive Occupational Therapy Evaluation Scale (COTE)

Patient Name:

	Date							
I.	General Behavior	1	2	3	4	5	6	7
	A. Appearance							
	B. Non-Productive Behavior							
	C. Activity Level (a or b)							
	D. Expression							
	E. Responsibility							
	F. Punctuality							
	G. Reality Orientation							
	Sub-Total							

II.	Interpersonal Behavior	1	2	3	4	5	6	7
	A. Independence							
	B. Cooperation							
	C. Self-Assertion (a or b)							
	D. Sociability							
	E. Attention-Getting Behavior							
	F. Negative Response From Others							
	Sub-Total							

III.	Task Behavior	1	2	3	4	5	6	7
	A. Engagement							
	B. Concentration							
	C. Coordination							
	D. Follow Directions							
	E. Activity Neatness Or Attention To Detail							
	F. Problem Solving							
	G. Complexity And Organization Of Task							
	H. Initial Learning							
	I. Interest In Activity							
	J. Interest In Accomplishment							
	K. Decision Making							
	L. Frustration Tolerance							
	Sub-Total							
Total								

Scale: 0-Normal, 1-Minimal, 2- Mild, 3-Moderate , 4-Severe

Annexure 3: Psychotic Symptoms Rating Scale-Auditory Hallucination (PSYRATS-AH)

Score

1) Frequency ☐
2) Duration ☐
3) Location ☐
4) Loudness ☐
5) Beliefs re-origin of voices ☐
6) Amount of negative content of voices ☐
7) Degree of negative content ☐
8) Amount of distress ☐
9) Intensity of distres ☐
10) Disruption ☐
11) Control ☐

Total Auditory Hallucinations Score