



## RANDOMIZED CONTROLLED TRIAL TO DETERMINE THE EFFECTIVENESS OF SUBJECT-CHOSEN OCCUPATIONS OVER THERAPIST-CHOSEN OCCUPATIONS IN OCCUPATIONAL THERAPY FOR PATIENTS WITH SCHIZOPHRENIA.

### Occupational Therapy

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### ABSTRACT

**Background-** Occupational therapy uses activities as a major modality or tool. Hence selection of activity is very crucial. The present study attempts to evaluate effect of subject-chosen occupations in improving the psychosocial functions, psychiatric functions and Task Behaviour functions.

**Objective -**To determine the effectiveness of subject-chosen occupations over therapist-chosen Occupations in Occupational therapy for patient with schizophrenia.

**Method-** Twenty four patients (20 males & 4 female , between 18-55 years age group) diagnosed as Schizophrenia Were Included in the study. Participants were randomly allocated to subject- chosen occupations (experimental) group and therapist-chosen occupations (control) group. The outcome of Task behaviour, General behaviour, Interpersonal behaviour and psychosocial function was measured using Comprehensive Occupational Therapy Evaluation (COTE) and Modified Global Assessment Of Functioning Scale(MGAF).

**Result -**Post intervention the change in COTE and mGAF scores was greater in experimental group as compared to control group which was statistically significant ( $p < 0.0001$ , t-test).

**Conclusion -**Therapy using 'subject-chosen occupation' is more effective than 'therapist-chosen occupation' in improving global functioning, interpersonal behaviour and task behaviour in patients with schizophrenia.

### KEYWORDS

Occupational Therapy, Client-centered Approach ,schizophrenia

### INTRODUCTION

According to *National Mental Health Survey of India, 2015-16* Prevalence, Pattern and Outcomes'. With a prevalence of 0.5% for current and 1.4% for lifetime experience, the prevalence of Schizophrenia and other Psychotic disorders is significant (0.5% in males vs. 0.4% in females)<sup>1</sup>. Occupational therapy considers engagement in occupation as essential to both physical and mental health<sup>2</sup>. Occupation is activity with a purpose, with a meaning unique to the person performing it<sup>3</sup>. Occupational therapy practitioners evaluate occupational functioning, work with consumer (patients, clients, families) to identify goals, and intervene to help troubled individuals, families, and communities learn new skills, maintain successful and adaptive habits, explore their feelings and interest, and control their lives and destinies<sup>4</sup>. Psychiatric rehabilitation, including Occupational therapy, plays an important role in management of schizophrenia<sup>5</sup>. Occupations are units of activity which are classified and named by the culture according to the purposes they serve in enabling people to meet environmental challenges successfully<sup>6</sup>. Canadian Occupational Performance Measure (COPM) is a client-centered approach used in Occupational therapy that focuses on client priorities which are important for the client to work on activities based on their preferences and choices<sup>6,7</sup>. There are different approaches used in Occupational therapy management of schizophrenia like psychoanalytical, sensory integration, behavioural, cognitive behavioural, acquisitional and model of human occupation<sup>8</sup>. The present study attempts to evaluate the effect of subject-chosen occupations and therapist-chosen occupations in improving the psychosocial functions, psychiatric functions and task behaviour functions in patients with schizophrenia.

### METHOD

#### Research design –

Interventional, Prospective , Randomized Controlled Trial Design Study.

#### Participant selection

The study was initiated after receiving an approval from Institutional Ethics Committee as well as The Maharashtra University of Health Sciences (MUHS). Total 30 participants (males and females), age 18-55 years ,diagnosed as schizophrenia with Mini-mental status examination score less than 4 participants (20 males & 4 females) completed the study protocol.

#### Procedure

All subjects underwent an initial baseline evaluation - Scoring on

MMSE<sup>8</sup>, Comprehensive Occupational Therapy Evaluation Scale and Modified Global assessment of Functioning scale<sup>9</sup>. Using Single blinded Block (Restricted) Randomization patients were assigned to one of the two groups: Group A (Experimental group) was called as 'Subject - chosen occupations' Group. As part of intervention the Canadian Occupational Performance Measure (COPM)<sup>6,7</sup> was used for this group. Subjects or relative chose a specific occupation (activity) and therapists intervention was based on the occupation chosen by the patient. Group B (Control group) was called as 'Therapist-chosen occupations' Group & were given occupations by the therapist based on theoretical recommendations. COPM was not used for this group. Each group received a total of 24 sessions with a frequency of 3 sessions in a week. Depending on the occupations chosen by the patient and therapist, the therapist designed the activity depending on the clinical picture, signs and symptoms and needs of the patient using principles of Strategy for Therapeutic Use of Self, Strategy for Modifying the Environment and Strategy for Selecting Activities<sup>15</sup>. On discharge, a home program was given which was followed by the caretaker. After discharge from hospital one session in a week was conducted in the hospital under the therapist's supervision and 2 sessions at home. The therapist visited the patients home to inspect compliance of home program unless the patient was from a different city. Finally, the outcome of psychiatric symptoms, Task behaviour, General behaviour, Interpersonal behaviour and psychosocial function was measured using Comprehensive Occupational Therapy Evaluation Scale and modified global assessment of functioning scale.

#### Therapy Protocol:

Depending on the occupations chosen by the patient and therapist, the therapist designed the activity depending on the clinical picture, signs and symptoms and needs of the patient using principles of o Strategy for Therapeutic Use of Self o Strategy for Modifying the Environment o Strategy for Selecting Activities<sup>15</sup>.

#### Example of “Therapist Chosen Occupation” group activity ---

Therapist selected activity according to gender, culture, premorbid functioning, hobbies, habits, education factors were taken into consideration.

e.g Therapist chosen occupation – Dressing without using COPM, ( From concrete to abstract thinking )

- Activities designed by the therapist to work on dressing activity,
- Start with different pictures of shirts,
- simple short term man puzzles,

- Taking shirt Information about shirts color size ,
- left and right side ,
- front and back side,
- Concept of buying shirts ,
- prizes.
- Discussion of Dressing in particular events.
- Exploring executive functions, task analysis.

catching and ball throwing with therapist ball tapping, catching , targeting one to one cricket with therapist then Group cricket making group leader under the supervision of therapist exploring interpersonal skill, team spirit, decision making, patience .

**Home Program** - It included continuing activity learnt and performed in the hospital in a different context ,patient and relative has been advised to follow given tailored made home program

#### Example of “Subject Chosen Occupation” group activity

e.g Subject chosen occupation – Cricket using COPM

**From one-to-one to group activity-** Activities designed by the therapist to work on cricket activity Start with different pictures of bat ball, showing images of cricket player simple short term man puzzles of cricket items overall information about cricket start with ball

#### Data analysis:

Data analysis was done using Windows-based “MedCalc Statistical Software” version 18.2.1. (MedCalc Software bvba, Ostend, Belgium; <http://www.medcalc.org>; 2018). All testing was done using two-sided tests at alpha 0.05. Thus, the criteria for rejecting the null hypothesis was a 'p' value of <0.05.

## RESULT

**Table 1: Demography Of Patients Enrolled & MMSE Scores At Baseline.**

| DEMOGRAPHY OF PATIENTS ENROLLED              |                               |                                   |                  |
|----------------------------------------------|-------------------------------|-----------------------------------|------------------|
|                                              | Study – Subject chosen (n=12) | Control – Therapist chosen (n=12) | Unpaired t-test  |
| <b>Age (yrs.)</b>                            |                               |                                   |                  |
| • Mean                                       | 32.00                         | 34.92                             | t = -0.752       |
| • 95% C.I. for Mean                          | 26.04, 37.96                  | 28.81, 41.03                      | p = 0.460 (N.S.) |
| • Median                                     | 31.50                         | 31.50                             |                  |
| • S.D.                                       | 9.381                         | 9.615                             |                  |
| • S.E.M.                                     | 2.708                         | 2.776                             |                  |
|                                              | No. (%)                       | No. (%)                           | Chi-square test  |
| <b>Gender</b>                                |                               |                                   |                  |
| • Male                                       | 9 (75.0%)                     | 11 (91.7%)                        | 2 = 1.2          |
| • Female                                     | 3 (25.0%)                     | 1 (8.3%)                          | p = 0.273        |
| MMSE SCORES AT BASELINE IN PATIENTS ENROLLED |                               |                                   |                  |
| Mean                                         | 18.50                         | 19.42                             | t = -0.704       |
| 95% C.I. for Mean                            | 16.15, 20.85                  | 17.78, 21.05                      | p = 0.489 (N.S.) |
| Median                                       | 17.50                         | 20.00                             |                  |
| S.D.                                         | 3.705                         | 2.575                             |                  |
| S.E.M.                                       | 1.070                         | 0.743                             |                  |

MMSE-Mini Mental Status Examination

**Table 2: MGAF Scores In The Two Groups**

|                           | Study (n=12)    |                            |        |      |         | Control (n=12)                         |                          |         |      |         |
|---------------------------|-----------------|----------------------------|--------|------|---------|----------------------------------------|--------------------------|---------|------|---------|
|                           | Mean            | C.I. for mean              | Median | SD   | SEM     | Mean                                   | C.I. for mean            | Median  | SD   | SEM     |
| Pre                       | 34.58           | 31.63, 37.53               | 34.00  | 4.64 | 1.34    | 35.00                                  | 30.41, 39.59             | 33.50   | 7.22 | 2.09    |
| Post                      | 47.00           | 42.66, 51.34               | 44.50  | 6.84 | 1.97    | 41.92                                  | 37.37, 46.46             | 41.00   | 7.15 | 2.07    |
| Change from Pre           | 12.42           | 10.63, 14.20               | 11.50  | 2.81 | 0.81    | 6.92                                   | 5.40, 8.44               | 7.50    | 2.39 | 0.69    |
| % change from Pre         | 35.85           | 32.00, 39.70               | 34.52  | 6.06 | 1.75    | 20.87                                  | 15.38, 26.35             | 22.37   | 8.63 | 2.49    |
| Between group comparisons |                 |                            |        |      |         | Within group comparison (Pre Vs. Post) |                          |         |      |         |
|                           | Mean Difference | 95% C.I. of the Difference | t      | df   | p       | Mean difference                        | C.I. for mean difference | t       | df   | p       |
| Pre                       | -0.417          | -5.56, 4.72                | -0.168 | 22   | 0.868   | Study Group                            |                          |         |      |         |
| Post                      | 5.083           | -0.84, 11.01               | 1.780  | 22   | 0.089   | -12.42                                 | -14.20, -10.63           | -15.302 | 11   | <0.0001 |
| Change from Pre           | 5.500           | 3.29, 7.71                 | 5.162  | 22   | <0.0001 | Control Group                          |                          |         |      |         |
| % change from Pre         | 14.987          | 8.67, 21.30                | 4.923  | 22   | <0.0001 | -6.92                                  | -8.44, -5.40             | -10.018 | 11   | <0.0001 |

MGAF-Modified Global Assessment Of Functioning

**Table 3: COTE- Total Behaviour Scores In The Two Groups**

|                           | Study (n=12)    |                            |        |       |       | Control (n=12)                         |                          |        |       |         |
|---------------------------|-----------------|----------------------------|--------|-------|-------|----------------------------------------|--------------------------|--------|-------|---------|
|                           | Mean            | C.I. for mean              | Median | SD    | SEM   | Mean                                   | C.I. for mean            | Median | SD    | SEM     |
| Pre                       | 44.92           | 36.89, 52.94               | 42.00  | 12.63 | 3.65  | 46.75                                  | 39.23, 54.27             | 49.00  | 11.84 | 3.42    |
| Post                      | 30.83           | 23.52, 38.15               | 31.50  | 11.51 | 3.32  | 37.75                                  | 31.14, 44.36             | 41.50  | 10.40 | 3.00    |
| Change from Pre           | 14.08           | 11.75, 16.42               | 15.00  | 3.68  | 1.06  | 9.00                                   | 7.12, 10.88              | 8.50   | 2.95  | 0.85    |
| % change from Pre         | 32.66           | 26.72, 38.60               | 31.45  | 9.34  | 2.70  | 19.73                                  | 15.97, 23.50             | 18.65  | 5.92  | 1.71    |
| Between group comparisons |                 |                            |        |       |       | Within group comparison (Pre Vs. Post) |                          |        |       |         |
|                           | Mean Difference | 95% C.I. of the Difference | t      | df    | p     | Mean difference                        | C.I. for mean difference | t      | df    | p       |
| Pre                       | -1.833          | -12.20, 8.53               | -0.367 | 22    | 0.717 | Study Group                            |                          |        |       |         |
| Post                      | -6.917          | -16.21, 2.37               | -1.544 | 22    | 0.137 | 14.08                                  | 11.75, 16.42             | 13.259 | 11    | <0.0001 |
| Change from Pre           | 5.083           | 2.26, 7.91                 | 3.732  | 22    | 0.001 | Control Group                          |                          |        |       |         |
| % change from Pre         | 12.925          | 6.30, 19.55                | 4.047  | 22    | 0.001 | 9.00                                   | 7.12, 10.88              | 10.553 | 11    | <0.0001 |

COTE- Comprehensive Occupational Therapy Evaluation

**Table4-COTE-General Behaviour, Interpersonal Behaviour, Task Behaviour**

| Between group comparisons                             |                 |                            |        |    |         | Within group comparison |                 |                          |        |    |         |
|-------------------------------------------------------|-----------------|----------------------------|--------|----|---------|-------------------------|-----------------|--------------------------|--------|----|---------|
|                                                       | Mean Difference | 95% C.I. of the Difference | T      | df | p       |                         | Mean Difference | C.I. for mean difference | t      | df | p       |
| <b>COTE – GENERAL BEHAVIOUR IN THE TWO GROUPS</b>     |                 |                            |        |    |         |                         |                 |                          |        |    |         |
| Pre                                                   | -1.667          | -5.12, 1.79                | -1.001 | 22 | 0.328   | Pre Vs. post            |                 |                          |        |    |         |
| Post                                                  | -2.250          | -5.12, 0.62                | -1.624 | 22 | 0.119   | Study                   | 3.92            | 3.08, 4.75               | 10.346 | 11 | <0.0001 |
| Change from Pre                                       | 0.583           | -0.86, 2.02                | 0.840  | 22 | 0.410   | Control                 | 3.33            | 2.05, 4.61               | 5.730  | 11 | <0.0001 |
| % change from Pre                                     | 7.900           | -1.20,17.00                | 1.800  | 22 | 0.086   |                         |                 |                          |        |    |         |
| <b>COTE- INTERPERSONAL BEHAVIOUR IN THE TWO GROUP</b> |                 |                            |        |    |         |                         |                 |                          |        |    |         |
| Pre                                                   | -1.000          | -4.16, 2.16                | -0.657 | 22 | 0.518   | Pre Vs. post            |                 |                          |        |    |         |
| Post                                                  | -2.583          | -5.31, 0.14                | -1.966 | 22 | 0.062   | Study                   | 4.17            | 3.51, 4.82               | 14.01  | 11 | <0.0001 |
| Change from Pre                                       | 1.583           | 0.73, 2.44                 | 3.828  | 22 | 0.001   | Control                 | 2.58            | 1.95, 3.22               | 8.983  | 11 | <0.0001 |
| % change from Pre                                     | 13.842          | 7.57, 20.11                | 4.579  | 22 | <0.0001 |                         |                 |                          |        |    |         |
| <b>COTE – TASK BEHAVIOUR IN THE TWO GROUPS</b>        |                 |                            |        |    |         |                         |                 |                          |        |    |         |
| Pre                                                   | 0.333           | -5.36,6.03                 | 0.121  | 22 | 0.904   | Pre Vs. post            |                 |                          |        |    |         |
| Post                                                  | -1.750          | -6.40,2.90                 | -0.780 | 22 | 0.444   | Study                   | 5.50            | 4.11, 6.89               | 8.680  | 11 | <0.0001 |
| Change from Pre                                       | 2.083           | -0.35,4.52                 | 1.775  | 22 | 0.090   | Control                 | 3.42            | 1.24, 5.59               | 3.457  | 11 | 0.005   |
| % change from Pre                                     | 15.333          | 2.55,28.12                 | 2.487  | 22 | 0.021   |                         |                 |                          |        |    |         |

COTE- Comprehensive Occupational Therapy Evaluation

## DISCUSSION

Occupation-based OT is 'a client-centered intervention in which the OT practitioner and client collaboratively select and design activities that have specific relevance or meaning to the client and support the client's interest, needs, health, and participation in daily life'<sup>10</sup> (American Occupational Therapy Association [AOTA], 2008, p. 672; Crepeau et al., 2009, p. 1162).

Table 1 shows that mean age was 32.00 years in the subject-chosen group (study) and 34.92 years in the therapist-chosen group (control) respectively. Ages of the two groups were similar ( $p = 0.460$ , t-test). The gender of the groups were similar ( $p = 0.273$ , chi-square test). Age & Gender wise distribution of participants between cases and controls was similar ( $p > 0.05$ ).

At baseline, MMSE, mGAF and COTE scores of both groups were similar.

In this study MMSE is a commonly used screening tool used in Schizophrenia to detect functionally relevant cognitive deficits. Moore (2004) et al conducted study on Use of the Mini-Mental State Exam in Middle-Aged and Older Outpatients With Schizophrenia: cognitive Impairment and Its Associations<sup>11</sup>. The authors examined cognitive impairment with a commonly used Mini-Mental State Examination as cognitive screening tool. Table 1 shows the mean MMSE score in the subject-chosen occupation group (study) and therapist-chosen occupation group (control) was non-significant ( $p = 0.489$ , t-test).

In this study, post intervention, MGAF and total COTE scores improved in both groups but improvement was more in subject-chosen occupation group compared to therapists-chosen occupation group & these differences were significant statistically (Table 2&3). A central concept of client-centered therapy is that human beings possess the potential for directing their own growth and development<sup>15</sup>. No matter how psychotic or disorganized the behaviour may appear, the client is capable of self-understanding and ultimately of changing behaviour<sup>15</sup>.

In this study, Subject chosen occupation group showed more improvement in MGAF & COTE scores, because subjects themselves chose the activities and performed them with the occupational therapists support and supervision( Table 2&3). Patients chose the activity by their choice, interest, inner drive. Relatives also chose the activity for the patient according to patients ability ,capacity and skill because the relative is in a better position to understand the patient's needs, likes and dislikes. COPM was used with caregivers or other family members, this often form a key part of the assessment process<sup>6</sup>.

Our findings are supported by the study conducted by Junko Hoshii (2013) on inpatients with chronic schizophrenia using Global assessment functioning scale to assess the psychosocial functioning of patients<sup>5</sup>. COPM was used in the process of extraction of chosen activities so that the occupational therapist could understand the subjects choices<sup>56</sup>. After the intervention they concluded that there was slight improvement in global assessment of functioning scores in the subject-chosen group( Table 2).

In our study, most of the activities selected by the patients in subject chosen group were activities involving interaction with others like cricket , ball catching & throwing, serving food to other patients in ward, etc. The occupational therapists accepted the activities that the subjects chose and modified the activity according to patient's current functional level. Physical and social environment was modified accordingly. Patients were treated as valuable human beings and involved in decision-making process for selecting occupation<sup>12</sup>. This helped in establishing therapist-patient partnership. This is one of the important concepts constituting client-centered occupational therapy. Partnership leads to the subjects' trust in their occupational therapist<sup>13</sup>. This experience is important because poor interpersonal skill, which is often observed in the acute stage of schizophrenia, makes it difficult to attain stable and smooth human relationships. Ikebuchi (2008) reported that schizophrenia symptoms, such as hostility, excitement, which destroy patients' relationships with those around them, could be factors that prevent them from being discharged from the hospital<sup>14</sup>. Therefore, it is suggested that subject-chosen occupation improves psychosocial function, making it easier to build a stable relationship between subject with schizophrenia and their therapists, and helping patients recover enough to return to the community. The perceived benefits are accomplishment, self-confidence, and feelings of self-satisfaction and hope.

In client-centered therapy the related concept is that mental health problems occur when a person is not aware of feelings and of the choices<sup>15</sup>. In other words, people who do not know how they feel about the people and events in their lives are likely to act in disorganized, confused and maladaptive ways<sup>15</sup>.

According to Rebeiro 2000, the provision of prescriptive activities aimed at identification of limitations of the individual and the reduction of impairment was perceived to be a shortcoming of occupational therapy care<sup>16</sup>. The prescription of activities largely eliminated the provision of choice and the opportunity to be meaningfully engaged in occupations of choice and eliminate the client from any collaborative partnership<sup>16</sup>. This might be the reason that therapist chosen occupation showed less improvement than subject-chosen occupation.

COTE is used to identify behaviours that impact occupational performance. It has three components. 1) General behaviour, 2) Interpersonal behaviour, 3) Task behaviour( Table 4).

The component of interpersonal behaviour measured independence, cooperation, self- assertion sociability, attention getting behaviour, negative response from others. Subject chosen occupation group showed significant difference in interpersonal behaviour. This maybe because most of the activities selected by the patients in subject chosen group were group or social activities like football, cricket, ball catching & throwing, serving food to other patients in the ward, etc. Active participation & self-esteem, self-efficacy of the subjects were given importance in occupational therapy program. Our findings are supported by Takafumi Morimoto (2012) et al who examined Interpersonal behaviour using interpersonal Relations subscale, the Self-efficacy Scale of Interpersonal Behavior, the Brief Assessment of Cognition in Schizophrenia–Japanese version, and the Positive and Negative Syndrome Scale<sup>17</sup>. They suggested that interventions

targeting the self-efficacy of interpersonal behaviour as well as those targeting neurocognitive functions, were important to improve the interpersonal behaviour of schizophrenia patients undergoing psychiatric rehabilitation in the community<sup>17</sup>.

The components of Task behaviour measured Engagement, Concentration, Coordination, Following of direction, Activity neatness, Problem solving, Complexity and Organization of task, Initial learning, Interest in activity, Interest in accomplishment, Decision making, Frustration tolerance. The literature has shown that clients with schizophrenia experience deficits in Executive Functions, characterized by difficulties in mental flexibility, working memory, initiating and performing tasks (planning, shifting, and regulation), and solving novel and conflicting problems in complicated and unfamiliar situations (Barch, 2005; Green, Kern, Braff, & Mintz, 2000)<sup>18</sup>. Occupational behaviour is the outcome of an interaction among the person, the occupational task and the environment<sup>5</sup>. Subject chosen occupation group chose activities which included paper cutting, making envelopes, rakhi making, lantern making, group singing, sharing thoughts in a group setting. These activities and environment provided opportunities, demands and constraints that shaped task behaviour. Hence Subject chosen occupation group showed significant difference in task behaviour. Medalia, Revheim, and Casey (2002) demonstrated that participants in a problem-solving group improved to a greater extent in problem solving than did those in memory skills training or control groups<sup>18</sup>.

Though general behaviour improved in both groups the difference was not significant. In COTE scale, the component of General behaviour measured appearance, non-productive behaviour, activity level, expression, responsibility, punctuality and reality orientation. The therapist chosen occupations were found to be equally effective. Probably because of the strong theoretical basis of activity prescription in occupational therapy.

## CONCLUSION

Occupational therapy based on both 'subject-chosen occupations' and therapist-chosen occupation is effective in improving global functioning and behavior that impacts occupational performance in patients with schizophrenia. However, therapy using 'subject-chosen occupation' is more effective than 'therapist-chosen occupation' in improving global functioning, interpersonal behavior and task behavior in patients with schizophrenia.

## Advantages–

The study underlines the importance of client-centered therapy in Occupational therapy for patients with Schizophrenia. The study provides an understanding of occupation in patients with Schizophrenia which can be of theoretical use in the academic discipline of Occupational science.

## Limitation –

The study was conducted for a limited duration therefore long-term effect could not be studied. Generalization of results will not be possible owing to small sample size.

## Suggestions –

Long term effectiveness of client centered approach should be tested. Longitudinal, multi-centre (Ikebuchi E, 2008) study with a large sample size should be considered

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**Place of Study:** Occupational Therapy Training School & Centre, Lokmanya Tilak Municipal Medical College and General Hospital, Sion, Mumbai- 22.

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