

# Lateralization Brain Dysfunction in Individual with Schizophrenia and Schizoaffective Disorder - A Neuropsychological Study

Yadav D<sup>1</sup>, Anuradha. S<sup>2</sup>

<sup>1</sup>Trainee, M.Phil Clinical Psychology (2<sup>nd</sup>) Year, Nai Subah institute of Mental health and Behavioral Sciences Varanasi

<sup>2</sup>Associate Professor, Department of Clinical Psychology, Nai Subah institute of Mental health and Behavioral Sciences Varanasi

Corresponding Author: Yadav D

## ABSTRACT

**Background:** - Lateralization of brain dysfunction in common aspect in latest study many studied shows that relationship between lateralization and psychiatric illness. Schizophrenia and schizoaffective disorders patients have also impairment in some brain abnormalities during this illness.

**Aim:** The aim of the study was to study the lateralization of brain dysfunction in individual with schizophrenia and schizoaffective disorder.

**Methodology:-**Sample size of 40 schizophrenic and schizoaffective diagnosed (as per ICD-10) patients from psychiatric institute was selected and purposive sampling method was used. Self-prepared Socio-demographic data sheet and clinical data sheet, Aims neuropsychological battery by Surya Gupta was used for the data collection. t-test was used for see the difference between schizophrenia and schizoaffective patients on different lobes. It was a cross sectional study.

**Result:** It was found that there is no significant difference between lateralization of brain dysfunction in schizophrenia and schizoaffective patient.

**Conclusion:** Concluding one can easily frame that it is very important to with the help these finding we considered the psycho rehabilitation program accordingly these. So that patient can able to perform daily task for their life.

**Keywords-** Lateralization, Brain dysfunction, Schizophrenia, Schizoaffective

## INTRODUCTION

The functioning between of two differences the two cerebral hemispheres have been reported for more than a century. In recent decades, issues related to lateralized dysfunction have been raised in psychiatric illnesses. The initially displayed of a hemispheric function of the brain was by Broca (1863), who told that relationship between left hemisphere dysfunction and aphasia. No. of study tells that lateralization of brain function have been approved in latest decades.

Hemispheric specialty has also been considered with admire to attention, auditory and visual perception, dysfunction affectivity, and autonomic regulation (Hellige 1993).

The conceptualization of schizophrenia as a brain disorder is long-standing. Kraepelin (1919/1971) focused the continuing cognitive impairment in schizophrenia and argued that this "dementia" was organically based. However Bleuler (1950) viewed "associative disturbance" as the core symptom in schizophrenia, like Kraepelin he supposed

the symptoms of schizophrenia were an expression of underlying organic impairment. Since the times of Kraepelin and Bleuler, interest in organic determinants of schizophrenia has waxed and waned.

Micheal et al.2005 suggested that his Lateralized cognitive dysfunction and psychotic symptoms in schizophrenia they told that lateralization brain dysfunction tells that a single core trait in schizophrenia. They assessed performance across a large range of lateralized cognitive domains including, recognition memory, attention, fluency perception, and arousal. They examined the relationship between lateralized impairments and psychotic and affective symptoms to reveal however abnormal hemispheric abnormalities were possibly state-related.

Result of that study Schizophrenia patients exhibited abnormal right hemisphere performance on a test of recognition memory and abnormal left hemisphere performance on a measure of arousal. This finding indicates that lateralized cognitive disturbances in schizophrenia do not represent a single hub lateralized dysfunction.

Overall, their findings indicate that lateralized brain dysfunction be able to in both hemispheres in schizophrenia, and that the positive psychotic features may connect more to right hemisphere dysfunction, however negative psychotic symptoms may connected more to left hemisphere dysfunction.

## RESEARCH METHODOLOGY

**Aim:** - The aim of the study was the lateralization of brain dysfunction in individual with schizophrenia and schizoaffective affective disorders.

### Objectives:-

- To assess and compare of the lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder.
- To see the relationship between left hemisphere dysfunction, right hemisphere dysfunction with

schizophrenia and schizoaffective disorder

### Hypothesis: -

- There are no significant difference between lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder.
- There are significant correlation between left hemisphere dysfunction, right hemisphere dysfunction with schizophrenia and schizoaffective disorder.

## RESEARCH DESIGN

**Venue:** - The study was conducted at Mental Hospital Varanasi, and OPD Nai Subah Varanasi.

**Research Design:** - The study was a cross sectional study.

**Sample:** - A sample of 20 individuals with schizophrenia disorders and 20 individuals with schizoaffective disorders was selected from the family ward and OPD of mental hospital Varanasi, OPD and Nai Subah for the current study. The total numbers of individuals was purposively assigned for the neuropsychological assessment.

### Inclusion criteria:

- Schizophrenia disorder (as per ICD-10).
- Schizoaffective disorders (as per ICD-10).
- Male and female both.
- Rural and urban both.
- Age criteria between 18 to 60
- Educated up to 5

### Exclusion Criteria:

- Individual who is suffering from physical illness.
- Individual who is suffering from organicity.
- Uncooperative participants
- Mental retardation

### Tools used in the collection of data: -

- Consent Form
- Socio-Demographic Data Sheet
- Clinical Data sheet
- AIIMS Comprehensive Neuropsychological Battery (Surya Gupta)

## Procedure of the study

Patients were selected from Mental hospital Varanasi and Nai Subah OPD as per inclusion and exclusion criterions after having informed consent. Ethical Permission was taken for conducting the study. After getting written consent from the participants, day and time was fixed according to their convenience for the assessment. Sample was selected purposively. Those people who were selected on the basis of purposive sampling technique were requested to fill up clinical

data sheet; socio demographic data sheet and administered screening tool for clarification diagnosis then cognitive assessment were administered. The procedure was followed for administration of test would essentially be identical in case of all the participants. After data collection statistical analysis was applied by using version of SPSS (21).

**Statistical Analysis:** Statistical analyses of the quantitative scores were done using Statistical Package for Social Sciences (SPSS 21).

**Table -1 Characteristics of demographic variable regarding present study. (N=40)**

Demographic Variable	Sub Variable	Frequency	Percentage
Age	16-30 Years	15	37.5%
	31-60 Years	25	62.5%
Education	1-8 Standard	06	15%
	9-12 Standard	18	45%
	Graduation to Others	16	40%
Sex	Male	24	24%
	Female	16	16%
Marital Status	Married	27	27%
	Unmarried	13	13%
Residence	Rural	16	40%
	Urban	24	60%

**Table -2** Showing that mean, standard deviation and t-value of lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder.

Diagnosis	No.	Mean	S.D	t- value	p- value
Schizophrenia	20	1.00	.00		
Schizoaffective	20	.105	.22	-1.00	.32NS

**Table-3** Showing that correlation between left hemisphere dysfunction, right hemisphere dysfunction and diagnosis with schizophrenia and schizoaffective disorder.

Correlation	Diagnosis	Left Hemisphere	Right Hemisphere
Pearson correlation	1	-.521**	-.410**
Sig(2.tailed)		.001	.000
N	40	40	40

\*\* . Correlation is significant at the 0.01 level

## DISCUSSION

Table no.1 shows that 62.5% of the participants were age up to 31 to 60 years and 37.5% of the participants were age up to 16 to 30 years.

- 45% of the participants were educated up to 9 to 12<sup>th</sup> standard; 40% up to graduation to others qualification and only 15% were 1 to 8<sup>th</sup> standard.
- Sample consists of 60% of male and 32% of female. Out of which 67.5% were married and 32.5% unmarried.

- From the results it is clear the 60% participants from urban area and 40% participants from rural area.

Here the t-test was used to see difference between lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder. The analysis of Table no.2 shows that mean and SD of lateralization dysfunction in individual with schizophrenia disorder is 1.00±.00 and the mean and SD of lateralization dysfunction in individual with schizoaffective disorder is 1.05±.22. The t value of lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder is -1.00. On 38 degree of freedom tabulated value of stigma is .324. Which is greater than calculated value it indicates that there is no significant difference found in the lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder. Thus the 1<sup>st</sup> null hypothesis was accepted so we can say that lateralization in schizophrenia and schizoaffective disorder as the same

because both are psychosis feature and brain abnormality as the same.

The analysis of Table no.3 shows Pearson bivariate Correlation was used to check the relationship between left hemisphere, right hemisphere and diagnosis of schizophrenia and schizoaffective disorder has been significant. Thus, the null hypotheses 2 are accepted. However, there are significant correlation between to each other is in the same direction. So we can say that left hemisphere and right hemisphere lateralization dysfunction in same in schizophrenia and schizoaffective patients.

## CONCLUSION

The current finding of the research indicates that in schizophrenic and schizoaffective patients have similar brain dysfunction. It is concluded that there is no significant difference between lateralization dysfunction in individual with schizophrenia disorder and schizoaffective disorder and there are highly significant relationship found in both disorder. Many studies have also supported these findings of the research.

## Future Directions

- To conduct similar study on a large population.
- To include cognitive rehabilitation approach.

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