

Original Research Article

## Effect of Brain Gym Exercise on Self-Esteem, Quality of Life and Symptoms among Schizophrenic Patients

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### ABSTRACT

An experimental study aimed to evaluate the effect of brain gym exercise on self-esteem, quality of life and symptoms among schizophrenic patients in selected hospital, Odisha with objectives to find the level of self esteem ,quality of life & symptoms among schizophrenic patients, to assess the effect of brain gym exercises on self esteem, quality of life & symptoms among schizophrenic patients & to find the association between self esteem, quality of life & symptoms with selected demographic variables among schizophrenic patients. Total 45 participants were selected by using total enumeration sampling techniques. Rosenberg's self esteem scale, WHOQOL-BREF Scale & PANSS Scale was used to assess the level of self esteem, quality of life & symptoms among participants. Brain gym exercise was given for 15 days. In analysis, there was statistically significant difference between pre test & post test scores of self esteem, quality of life & symptoms at p value <0.00001. Chi square association showed, level of self esteem was statistically significant with family history & quality of life was statistically significant with monthly family income at P value <0.01 and the symptoms was statistically significant with educational status, occupation, marital status, duration from diagnosis at p value (<0.01), (0.01), (<0.01), (0.04). Study concluded that the brain gym exercise was effective in increasing the level of self esteem, quality of life & reducing symptoms among schizophrenic patients. Nursing personnel should utilize this exercise at clinical setting in improving self esteem, quality of life and enhancing the life style pattern of schizophrenic patients.

**Keyword:** Self esteem, quality of life, Brain gym exercise.

### INTRODUCTION

Schizophrenia is a common mental disorder that specifically affects cognition and often causes chronic behavioural and emotional problems along with a breakdown of thought processes. Nearly every area of a person's life can be affected in this disorder. People with schizophrenia show both negative and positive emotions. <sup>[1]</sup>

Schizophrenia is most prevalent in society and it is a severe mental illness of psychosis and it is characterized by delusions and hallucinations which are the positive symptoms of this disorder and negative symptoms are like flat affect,

poverty of speech, lack of motivation and social withdrawal. There is cognitive impairment, making it one of the leading causes of disability in the age group 15-44 years. Today schizophrenia is one of the major public health challenges. <sup>[2-4]</sup>

Typically Schizophrenia appears earlier in men than in women and it is diagnosed 1.4 times more frequently in males than females,. For males the peak ages of onset are 20–28 years and for females 26–32 years. Onset of schizophrenia in childhood is much rarer, as is onset in middle- or old age. <sup>[5,6]</sup>

In 2003, Silverstone et al. found that patients with schizophrenia had moderate levels of self-esteem. However, when they are compared with other psychiatric conditions, this group of patients had significantly low self-esteem than others. Schizophrenia patients with low self-esteem are expected to have a compromised quality of life and they are having poor psychosocial functioning, by using RSES (Rosenberg Self-esteem Scale) it found that 24% of the people with schizophrenia scored below the mid score (reflecting low score and low self esteem). Therefore Self-esteem is the considerable interest as it is both a possible consequence and a possible cause of psychiatric symptoms. [7,8]

An important component of psychological health is self esteem. Self-esteem means an individual's sense of value or worth. Psychiatric patients with low self esteem contribute in both the development of delusions and the maintenance of psychotic symptoms. A cross-sectional correlational study conducted at Institute of Mental Health and Hospital, Agra. In that study the sample consisted of 50 persons, age range is 20-55 years with the history of chronic schizophrenia. Rosenberg Self-esteem Scale, PANSS and Schedule for Assessment of Insight (SAI) were administered on that participants. The results revealed that significant association of the level of insight, positive symptoms, negative symptoms and general psychopathology with the self-esteem. [9]

Schizophrenia continues chronically along with one's life & the genetic factors of schizophrenia cannot be ignored on the level of his or her family medical history. The psychopathology of this disease has impact on the quality of life occupational function. [10]

Unfortunately, factors influencing QOL in schizophrenia are not well known. In Studies it is found that QOL for patients with schizophrenia and other severe mental illnesses have a number of identified important influential factors, such as side effects of medication, unmet needs, and

social support. [11,12]

In recent years, several groups of research have concluded that the negative symptoms of schizophrenia are much more closely related to quality of life than positive symptoms. [13]

A study investigated that aerobic exercise enhances performances in related to memory tasks. And also some studies suggested that relaxation exercises & movement therapy can improve negative symptoms of schizophrenia, depression and also reduce anger. [14]

Brain Gym comprises very easy body movements which have been designed to coax the two hemispheres of the brain to work in synchronization. [15] The creation of Brain Gym originated with Paul Dennison, PhD, and his wife and colleague Gail Dennison, who incorporated fun movements as an innovative and educational approach to mental health and brain health. [16]

In 2015, Lee Hye-Jin, HoJang Seung-, et al conducted a study on patients with schizophrenia to investigate the effects of dance and movement therapy on affect and psychotic symptoms. The Dance and movement therapy (DMT) group (n =18) received both DMT and medical treatment over 12 weeks, and the control group (n = 20) received only medical treatment. After treatment, the DMT group showed a significant decrease in level of anger compared to the control group after treatment (for state anger,  $p < .05$ ). For psychotic symptoms, result revealed that a significant decrease of negative psychotic symptoms compared to the control group after treatment,  $p < .01$ ). DMT is the treatment program which can improve negative psychotic symptoms and can reduce negative affect with anger control. [17]

Brain Gym is a series of cognitive learning exercises that are great for all ages. Brain Gym helps in to boosting self-esteem. It can improve eyesight and even increase creativity & develop communication skills. Brain gym brings improvement in areas such as: Concentration and Focus, Memory,

Academics i.e. reading, writing, math, test taking, Physical coordination, Relationships Self-responsibility, Organization skills, Attitude. <sup>[16]</sup>

A study was conducted by Leslie B. Ranew, 2007 at Valdosta, in a high school of U.S to determine the effects of using Brain Gym exercises on student achievement and participation. The two classes of 50 students participating in the 8-week study and they were taught with the same lesson plans and materials. Before begin to each class; the Brain Gym group did 3 minutes of specific exercises, but students in the control group did not. There was no significant difference in student achievement or participation; however Survey indicated that students using Brain Gym exercises increased participation in lessons and helped in concentrate. <sup>[18]</sup>

Brain Gym helps in cutting edge both in the office and in your personal life, improving communication skills, helping in make better decisions and even giving a boost when you're facing rejection or disappointment. Brain Gym is a mix of activities designed to improve mental abilities such as memory, concentration and reading comprehension. <sup>[19]</sup>

## **MATERIALS AND METHODS**

Experimental research approach is considered to assess the effect of brain gym exercise on self esteem, quality of life and symptoms among schizophrenic patient. The design of the present study is pre-experimental one group pre test- post test design.

The main setting of the study was Psychiatric ward of S.C.B Medical College & Hospital, Cuttack.

Total 45 numbers of schizophrenia patients were participated in this study. Selection of participants was done by using total enumeration sampling technique.

Participants of the study were schizophrenia patients of S.C.B Medical College & Hospital, Cuttack, Odisha.

They were given the demographic questionnaire and assessed for their socio demographic data.

The inclusion criteria for the study participants were (i) psychiatric patients diagnosed as schizophrenia at least for 6 months. (ii) Schizophrenia patients who are able to do body movements & are cooperative. (iii) Schizophrenia patients who can understand Odia, English or Hindi language. (iv) Patients who are not having any physical illness.

Rosenberg's self esteem scale was used to assess self esteem, WHOQOL-BREF scale was used to assess quality of life and PANSS scale was used to assess symptoms among participants.

The brain gym exercise was given for 15 days for 20 minutes. Time of doing exercise was 9.00am to 9.20am.

Participants were co-operative and interested about performing exercises and researcher did not find any difficulty in conducting exercise among participants.

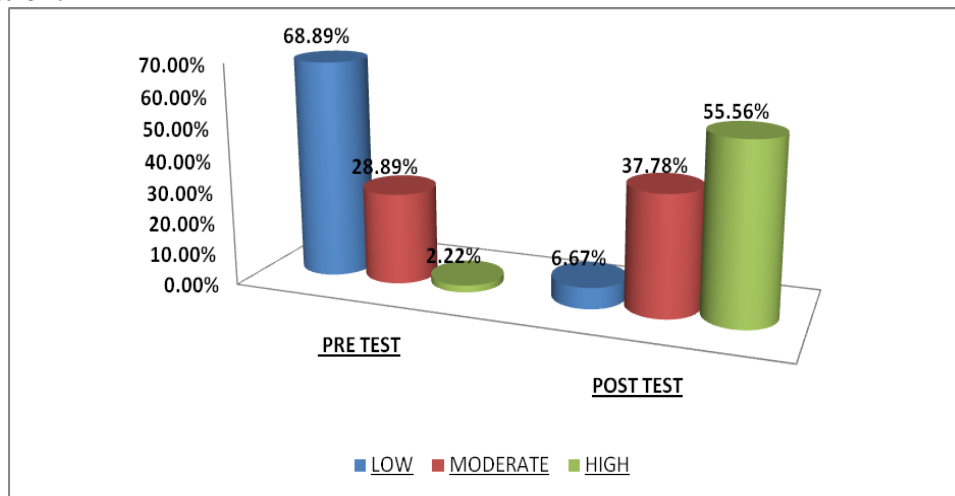
## **RESULTS**

Description of study samples according to socio demographic variables.

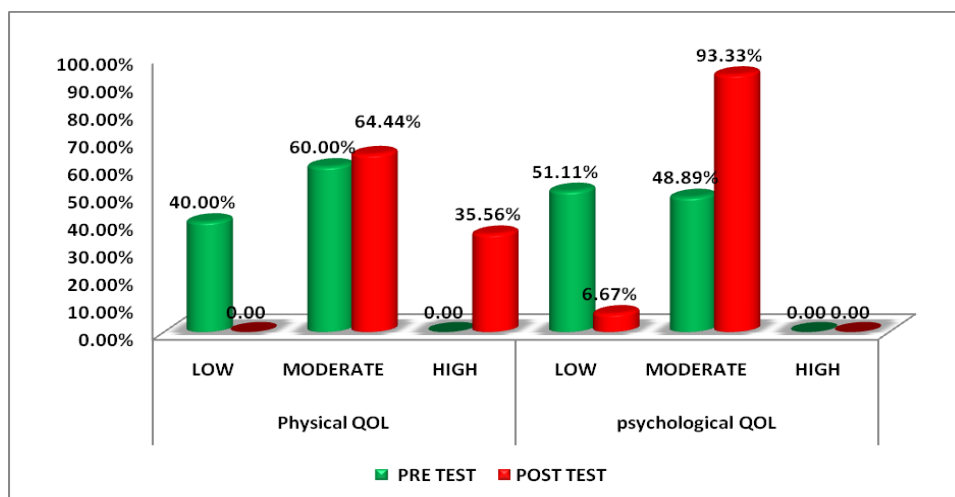
**Table-1:** Frequency (f) and percentage (%) distribution according to age, gender, education, occupation, religion, marital status, monthly income, type of family, family history, duration of hospitalization & duration from diagnosis. (N= 45)

Variables	Frequency(f)	Percentage (%)
<b>Age in years</b>		
15-30 yrs	29	64.44
<b>Gender</b>		
Male	32	71.1
<b>Education</b>		
Higher secondary	16	35.56
<b>Occupation</b>		
Unemployed	23	51.11
<b>Religion</b>		
Hindu	38	84.44
<b>Marital status</b>		
Unmarried	22	48.89
<b>Monthly family income(In rupees)</b>		
5000-10000	31	68.89
<b>Type of family</b>		
Nuclear	29	64.44
<b>Family history</b>		
Positive history	24	53.33
<b>Duration of hospitalization</b>		
1-15 days	39	86.67
<b>Duration from diagnosis</b>		
6months-5years	35	77.78

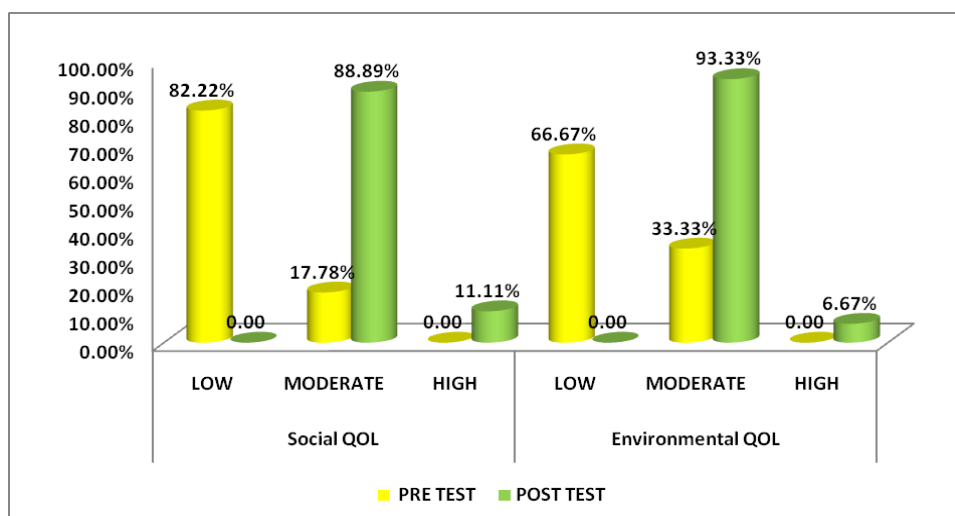
**Pre test & Post test level of the self esteem, quality of life and symptoms among schizophrenic patients using Frequency and percentage distribution through graphical presentation.**



**Figure-1:** Bar diagram showing pre-test and post-test score on level of self esteem by using percentage. (N= 45)



**Figure-2:** Bar diagram showing pre-test and post test score on physical quality of life (D1) & psychological quality of life (D2) by using percentage. (N= 45)



**Figure -3:** Bar diagram showing pre-test and post test score on social quality of life (D3) & environmental quality of life (D4) by using percentage. (N= 45)

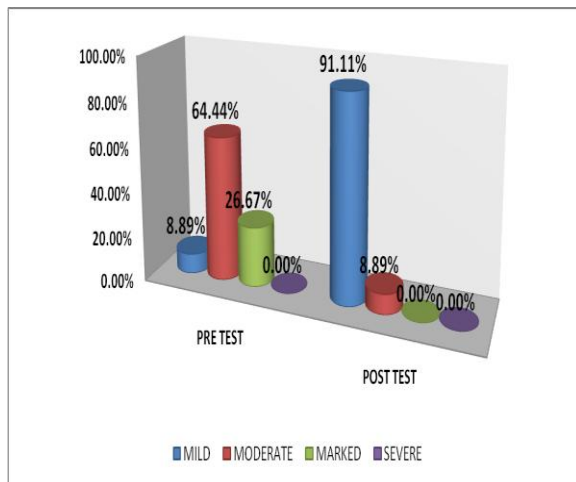


Figure-4: Bar diagram showing pre-test and post test score on symptoms by using percentage. (N= 45)

Table-2: comparison between pre-test and post-test scores of self esteem among participants using 't' test. (N= 45)

Item	Mean	SD	Paired 't' test calculated value	Df	P value
Self esteem	10.95	5.17	14.19	44	<.00001*

\*p<0.05 is significant

Table-3: comparison between pre-test and post-test scores of quality of life among participants using 't' test. (N= 45)

Item	Mean	SD	Paired 't' test calculated value	Df	P value
Quality of life	20.86	5.68	24.61	44	<.00001*

\*p<0.05 is significant

Table-4: comparison between pre-test and post-test scores of symptoms among participants using 't' test. (N= 45)

Item	Mean	SD	Paired 't' test calculated value	Df	P value
Symptoms	51.24	21.64	15.88	44	<.00001*

\*p<0.05 is significant

## DISCUSSION

This experimental study found that Brain gym exercise has positive effect in increasing the level of self esteem, quality of life and reducing symptoms among people with schizophrenia. Researcher not found such type of direct previous similar studies on similar categories of respondents to be compared with the findings of the current study. In findings of the current study, majority 68.89% of participants were having low self esteem, which is supported by a study conducted by Zi-yan Xu, et al in 2013. In which a total no. of 133 people with schizophrenia were taken as a study sample and 50 people with no mental problems were taken as a control group and the study revealed that the level of self-esteem in the people with schizophrenia was

significantly lower than in healthy controls. The patients expressed more low frustration tolerance and absolute demands in Compared to control groups. [20]

Findings in current study about quality of life revealed that in pretest 60% were having moderate physical quality of life, 51.11% were having low psychological quality of life, 82.22% were having low social quality of life and 66.67% were having low environmental quality of life. Findings of this current study are contradictory to findings of other study, which was conducted in 2012, by Salleh Mohd Razali and Murniyati Abd Wahid. They conducted a cross-sectional study on 206 no. of psychiatric out patients with schizophrenia, to assess the level of quality of life among them. Results showed that about 26.7% of them had depressive symptoms. Most subjects (78.2%) were satisfied in all domain of subjective Quality Of Life. [21]

Findings of this current study about symptoms revealed that in pre test, majority, 64.44% of schizophrenic participants were having moderate symptoms, but in post test, majority 91.11% of participants were having mild symptoms, which indicates the effectiveness of brain gym exercise in reducing symptoms. Supported to this study, in 2015, Lee Hye-Jin, HoJang Seung-, et al conducted a study on patients with schizophrenia to investigate the effects of dance and movement therapy on affect and psychotic symptoms. This study investigated the effects of DMT on affect and psychotic symptoms in patients with schizophrenia. The DMT group (n = 18) received both DMT and medical treatment over 12 weeks, and the control group (n = 20) received only medical treatment. For psychotic symptoms the DMT group showed a significant decrease of negative psychotic symptoms compared to the control group after treatment ( $F(1, (1, 36) = 5.12, p < .01)$ ). DMT is therefore presented as a treatment program that can improve negative psychotic symptoms. [17]

## CONCLUSION

The findings from this study revealed that schizophrenia patients were having low self esteem and low quality of life which was increased after providing brain gym exercise to high self esteem and moderate quality of life. And symptoms also reduced, after intervention .So it concluded that brain gym exercise is effective in increasing self esteem and quality of life and in reducing symptoms.

The implication of this study is beneficial in nursing profession as the nursing students can acquire the skill about brain gym exercise and can teach the patient or family members about this procedure by applying in clinical practice to reduce the symptoms and increase the level of self esteem & quality of life among schizophrenic patients.

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