ORIGINAL ARTICLE

USE OF PHYSICAL EXERCISE AND SPORTS PARTICIPATION IN MALE PATIENTS SUFFERING FROM SCHIZOPHRENIA

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ABSTRACT

OBJECTIVE
To explore the effectiveness and therapeutic impact of physical exercise and sports participation on the rehabilitation of patients with schizophrenia.

STUDY DESIGN
Experimental design

PLACE AND DURATION OF STUDY
The study took place in Fountain House, Lahore in one and half month.

SUBJECTS AND METHODS
The study was carried out on 14 male resident members who successfully participated in sports competition after one month physical exercise training at Fountain House Lahore. They were diagnosed schizophrenia according to DSM-5 with age range of 20 – 45 years (M=31, SD=7) with the minimum chronicity of 5 years and were stable for last 2 months. Activity Impact Rating Performa (AIRP) and Members Physical Exercise and Sports Participation Feedback Rating Performa (MPRP) were used for baseline assessment by the researcher and participants themselves. After one month training in physical exercise and sports both tools were rated again.

RESULTS
Significant difference were found in clinical psychologist rating as per AIRP and participants own feedback rating as per MPRP at pre and post activity level while using paired sample t-test. This showed marked improvement in member's self-confidence, sense of achievement and positive thinking.

CONCLUSION
Findings of this study suggested that physical exercise and sports participation should be included in the social skills training program of the patients with schizophrenia.

KEY WORDS
Schizophrenia, Physical exercise, Sports, Rehabilitation.

INTRODUCTION

Schizophrenia is a severe mental disorder, characterized by profound disruptions in thinking, affecting language, perception and the sense of self. It often includes psychotic experiences, such as hearing voices or delusions. It can impair functioning through the loss of an acquired capability to earn a livelihood or the disruption of studies.[1] The paradigm shift from the conventional treatment of patients with schizophrenia has introduced lots of challenges for the mental health professionals. Different treatment modalities are available to deal with schizophrenia. There was more emphasis on symptom recovery rather on functional recovery. The patients often getting discharge from the psychiatric hospital live with their limited executive functioning as more emphasis was on reducing the positive and negative symptoms of the patients. The concept of psycho social rehabilitation emerged as new hope for the remission of negative symptoms and heading towards functional recovery of the patient with schizophrenia. The rehabilitation activities play a pivotal role in improving patients with schizophrenia. The sports activity changes the monotonous mood and feeling of the patients with schizophrenia. Sports participation has the potential to improve overall quality of life of the patients with schizophrenia as it gives a sense of success, achievements and satisfaction.[2]

Moreover, sports playing are linked with having social, confident, strong feeling of identity and belonging.[3] This will lead the individual to have interest in sports which in turn increase level of motivation and decrease vulnerability and social isolation.[4] There are good reasons to believe that sport participation may have multiple benefits for an individual's bio-psychosocial health and have an important role in psychiatric rehabilitation. For instance, International Olympic Committee consensus highlights a wealth of bio-psychosocial benefits of sports participation[5] supported by recent reviews on particular sports which illustrate similar findings supporting the benefit to an individual's bio-psychosocial health.[6]

The sports and physical activity reduces the negative symptoms as the patient gets involved in that physical activity which improves his mood. The patients with schizophrenia are very appreciative of the general supportive atmosphere and exercise facility for their environment.[7] The sports participation not only focuses on physical health, it has also affects psychiatric symptoms in schizophrenia.[8] Physical exercise intervention from moderate to vigorous exercise may lead to better physical health, symptom management and social functioning among early stages of psychosis.[9]

So far, there no study in Pakistan that focuses upon the benefit of physical exercise and sport participation for the patients of schizophrenia, it is needed to investigate the role of physical exercise in Pakistani culture. Therefore, the objective of current research is to explore the effect of physical exercise and sport participation on male patients with chronic schizophrenia.

SUBJECTS AND METHODS

Participants

14 male patients with chronic Schizophrenia diagnosed according to DSM-5 were selected for the study. Inclusion criteria was defined as patient with minimum chronicity of 5 years of illness and stable for 2 months with age range of 20-45 years. The ABA research design was used in this study.

Instruments

Member's Demographic Performa, Activity Impact Rating Performa (AIRP) and Members Physical Exercise and Sports Participation Feedback Rating Performa (MPRP) were used for the current study.

Activity Impact Rating Performa (AIRP).

Activity Impact Rating Performa which is subjective rating Performa especially developed for this research for the patients with schizophrenia undergoing rehabilitation. The Performa consisted of 18 items and its content was validated by expert validation. 10 expert psychologists were selected and given the 24 item form with 5 point rating scale from strongly agree to strongly disagree. The experts were working minimum 5 years and the requirement of each scale was to get at least agree from all the experts. Only 18 of the items had met the criteria and were retained. The subjective rating of the behavior of the members was assessed at pre and post activity level. The activities are based on patients rehabilitation programs carried out at Rehabilitation Centre. These were three main personality traits under which their behavior was subjectively assessed namely self-confidence, sense of achievement and more positive thinking. Self-confidence was assessed under communication, facial expression, eye contact, aggression control and self-talk reduction. Sense of achievement was assessed under motivation, social interaction, effort, team spirit and task completion. More positive thinking was assessed under hopefulness, future goal settings thought control, mood and socialization.

Members Physical Exercise and Sports Participation Feedback Rating Performa (MPRP).

Members Physical Exercise and Sports Participation Feedback subjective rating Performa was specially developed, which consisted of 10 items. Expert validation was done by 10 experience psychologist that worked minimum 5 years. Each item had 5 point likert type scale from strongly agree to strongly disagree. Only the items that got at least agree for the entire expert panel were retained. Initially, the rating Performa consisted of 13 items, but after expert validation 3 items were discarded. Members feedback was assessed under interest in sports, happy and relaxed after participation in sports, improvement in self-image, improvement in self-confidence, improvement in sense of achievement, improvement in positive thinking, importance of participation in sports for the members, feel hopeful for future after participation in sports, feel good in other daily living activities after participation in sports and plan to continue sports at your home.

Procedure

The study was approved from concerned authority and patients were selected as per inclusion criterion. Informed consent was taken after clinical psychologist briefed them about the study protocol. Member's demographic information was taken from official record. The behavioral assessment of the participant was recorded by clinical psychologists and participant feedback was also taken at pre-activity level. Participants were trained in physical exercise and sports participation for one month and after their successful participation in annual sports competition they were reassessed at post activity level. Data were entered to SPSS version 21 and analyzed through paired sample t test.

RESULTS

Results showed that mean age of the participants was 31.5 years with standard deviation of 7.06. Table 1 showed the demographic details of the participants. Most of the participants had intermediate level education, lived in urban areas, belonged to middle socioeconomic class, were unmarried. Table 2 showed the details of illness and duration of treatment of the participants. Most of the participants were aged between 15 to 20 years at the onset of schizophrenia, Majority had their first admission to hospital at the time of study and has a stay of less than one year.

The table 3 showed significant difference in clinical psychologist rating as per AIRP and participants own feedback rating as per MPRP at pre and post activity level while using paired sample t-test. The results have shown that use physical exercise and sports participation in patients with schizophrenia showed marked improvement in patient's self-confidence, sense of achievement and sitive thinking.

Table 1
Frequency and Percentage of Demographic Variables of Participants (N=14)

Variable		*f*	Percent (%)
Education	Primary	1	7.10
	Middle	1	7.10
	Matricgraduation	1	7.10
	Intermediate	8	57.10
	Graduation	2	14.30
	Post-Graduation	1	7.10
Residence	Urban	10	71.40
	Rural	4	28.60
Socioeconomic Status	Lower	3	21.40
	Middle	11	78.60
	Upper	0	0
Marital Status	Married	1	7.10
	Unmarried	11	78.60
	Divorce	2	14.30
Birth Order	Eldest	4	28.60
	Middle	4	28.60
	Youngest	6	42.90

Table 2
Duration of illness and no. of admissions of the participants

Variable		*f*	Percent (%)
Age of onset	15-20 years	7	50.0
	21-25 years	3	21.40
	26-30 years	4	28.60
Duration of Illness	1-5 years	5	35.70
	6-10 years	5	35.70
	11-15 years	2	14.30
	16-20 years	1	7.10
	21-25 years	1	7.10
No of Admissions	1st admission	8	57.10
	2nd admission	1	7.10
	3rd admission	4	28.60
	4th admission	1	7.10
Duration of stay	Within one year	7	50.0
	1-2 years	4	28.60
	3-4 years	2	14.30
	5-6 years	1	7.10

Table 3
Paired Sample t-test on scores of Pre and Post activity AIRP and MPRP (N=14)

Variables	Groups	*N*	*M*	*SD*	*t*	*p*
AIRP	Pre Rating	14	15.14	6.443	-17.352	.001***
	Post Rating	14	57.43	6.454		
MPRP	Pre Rating	14	9.85	4.100	-18.686	.001***
	Post Rating	14	34.08	2.722		

*df =12 ***P<0.001*

DISCUSSION

Sports participation is associated with distinct aspects which may foster and enable greater levels of physical activity. It may also give forth some extra benefits for instance playing a sport is associated with a strong sense of identity, social confidence, social support and sense of belonging. The current research was aimed to explore the rehabilitative use of physical exercise and sports participation in the patients with schizophrenia so that it can be considered an integral part of rehabilitation of such patients. Findings proved that physical exercise and participation in sports was very useful in building self confidence, motivation and positive thinking in the patients with chronic schizophrenia. It gave new opening in the field of social skills training of the patients with the schizophrenia. The results of this research have broadened the holistic approach of psycho social humanistic model in which the social skills training is the integral part of the model to attain the functional recovery of the patients with schizophrenia.

The results strongly advocated the importance of physical exercise and sports participation in the rehabilitation of patients with schizophrenia which are in line with the previous done on the subject. Deenik et al carried out research on Physical activity and quality of life in long-term hospitalized patients with severe mental illness. The results showed that physical activity positively affected quality of life and improved overall physical, psychological and social wellbeing of the patient . It clearly demonstrated the effectiveness of physical activity on the mood enhancement of the patients with severe mental illnesses which reduced their symptoms.10

Barde, Upendra and Devi explored the effect of recreational therapy on patients with Schizophrenia. The data was collected randomly from Chaitanya Rehabilitation center, Pune on 60 patients with schizophrenia. "Brief Psychiatric Assessment Scale" was used to assess the mental state of Schizophrenia patients. Initially Mental status of the patients was assessed using the scale followed by 20 days of Recreation therapy and again post test was taken using the same scale. The result revealed that behavioral management effects of recreation activities were described as mediated by the following two mechanisms: "(a) recreational activities were intrinsically reinforcing and thereby displace bizarre and antisocial behaviors which were incompatible with sustained engagement in the activities, and (b) the instructions, cues, and prompts bedded within recreational activities, especially when provided by a salient therapist, exert stimulus control over patients' attentiveness to the activities. The study opened new doors of recovery for the patients with schizophrenia while inculcating new therapeutic modules in the treatment of patients with schizophrenia.11

The latest innovations and inclusion of sports and physical activity in psycho social interventions have given new hope to treat negative symptoms as negative symptoms are associated with poor functioning and poor quality of life .12 The holistic approach of catering all the aspects of the patient with schizophrenia will lead to functional recovery and social competence of the patient. The sports and physical activity as the part of psycho social rehabilitation program can act as catalyst to attain functional recovery which minimizes positive and negative symptoms and give hope and feeling of self-empowerment to the patient.

Combs et al carried out research on inpatients with schizophrenia to find out the impact of Social Cognition and Interaction Training (SCIT) .The patients with Schizophrenia exhibited consistent deficits in social cognition such as emotion perception and attributed style. The impact of SCIT showed improvement in all social cognitive measures and self-reported social relationships and there were fewer aggressive incidents at treatment unit.13 This suggests that physical activity and sports participation to be included in rehabilitative programs of the patients with schizophrenia and should be considered strong component of social skills training. The evidence will help the merging sports participation skills in social skills training of the patients with schizophrenia since it marked improvement of the participants in self-confidence, sense of achievement and positive thinking.

CONCLUSION

The physical exercise and sports participation can bring new hope for the mental health professionals who are working holistically on the treatment of patients with schizophrenia

LIMITATIONS

The members only who were residing in fountain house were considered in the study as there is limited trend of sports for patients with schizophrenia with reference to its significance in existing treatment centers. The members had concentration problem due to their symptomology of the illness.

IMPLICATIONS OF THE STUDY

The findings of the current study can be helpful for the mental health professionals to consider physical exercise as the strong component of their treatment plan for the patients with psychiatric illnesses as it uplifts the mood of the patient and decreases the negative thoughts. The findings will give further hope for the policy makers in the field of mental health to consider sports and physical exercise as the integral part of psychiatric treatment settings and keeping specific place for sports to improve the patients with psychiatric illnesses.

REFERENCES

1. World Health Organization. Schizophrenia. Retrieved from: http://www.who.int/topics/schizophrenia/en/. 2014.
2. Soundy A, Roskell C, Stubbs B, Probst M, Vancampfort D. Investigating the benefits of sport participation for individuals with schizophrenia: a systematic review. Psychiatria Danubina. 2015 Mar 9; 27(1):0-13.
3. Corretti G, Martini C, Greco PL, Marchetti FP. Sport in psychiatric rehabilitation: a tool in pre-acute, post-acute and chronic phase. International Journal of Clinical Medicine. 2011 Nov 17;2(05):568-569.
4. Soundy A, Kingstone T, Coffee P. Understanding the psychosocial processes of physical activity for individuals with severe mental illness: A meta-ethnography. InMental Illnesses-Evaluation, treatments and implications 2012. InTech.
5. Mountjoy M, Andersen LB, Armstrong N, Biddle S, Boreham C, Bedenbeck HP, Ekelund U, Engebretsen L, Hardman K, Hills A, Kahlmeier S. International Olympic Committee consensus statement on the health and fitness of young people through physical activity and sport. British journal of sports medicine. 2011 Sep 1;45(11):839-48.
6. Krustrup P, Dvorak J, Junge A, Bangsbo J. Executive summary: The health and fitness benefits of regular participation in small - sided football games. Scandinavian journal of medicine & science in sports. 2010 Apr 1;20(1):132-135.
7. Strassnig M, Signorile J, Gonzalez C, Harvey PD. Physical performance and disability in schizophrenia. Schizophrenia Research: Cognition. 2014 Jun 30;1(2):112-21.
8. Takahashi H, Sassa T, Shibuya T, Kato M, Koeda M, Murai T, Matsuura M, Asai K, Suhara T, Okubo Y. Effects of sports participation on psychiatric symptoms and brain activations during sports observation in schizophrenia. Translational Psychiatry. 2012 Mar 1; 2(3):e96.
9. Firth J, Carney R, Jerome L, Elliott R, French P, Yung AR. The effects and determinants of exercise participation in first-episode psychosis: A qualitative study. BMC Psychiatry. 2016; 16(1):1-9.
10. Deenik J, Kruisdijk F, Tenback D, Braakman-Jansen A, Taal E, Hopman-Rock M, Beekman A, Tak E, Hendriksen I, van Harten P. Physical activity and quality of life in long-term hospitalized patients with severe mental illness: A cross-sectional study. BMC Psychiatry. 2017 Aug 18; 17(1):298.
11. Barde S, Upendra S, Devi S. An interventional study: Recreational therapy on schizophrenia patients. International Journal of Current Research. 2016 Mar 31; 8 (3): 28582-28584
12. Elis O, Capaoniigro JM. Psycho social treatments for negative symptoms in schizophrenia: current practices and future directions. Clinical Psychological Review.2013 33,914-928.
13. Combs DR, Adams SD, Penn DL, Roberts D, Tiegreen J, Stem P. Social cognition and Interaction Training (SCIT) for inpatients with Schizophrenia spectrum Disorders: Preliminary Finds. Schizophrenia Research.2007; 91(1), 112-116.

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