

Impact of Social and Cognitive Rehabilitation Program on Schizophrenic Patients: Pre & Post Study

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Abstract

Background: Rehabilitation program for schizophrenic patients is increasingly gaining attention in the field of psychiatry. It is still a relatively new intervention method in treatment for persistent and severe psychiatric illness.

Objective: This study aimed to evaluate the impact of social and cognitive rehabilitation program on Male schizophrenic Patients. **Methodology:** A quasi- experimental design (pre-post study and follow-up) for one group, it covered forty nine schizophrenic inpatients in Abd Alaal El-Elidrissi Psychiatric Hospital, based on selected criteria, after developing and organizing rehabilitation program. Tools: Data collected through personal face to face interview and observation consists of four parts, socio demographic, PANSS, social skills and min mental state. A structured social and cognitive rehabilitation program was designed to improve symptoms, social skills and cognitive function. This program was implemented through training method such as paper and-pencil tasks, physical exercise, recreation therapy and psycho-education. Over 126 sessions, nine sessions per week and each lasted for 60-90 minutes. pre, post and follow-up (after 14 weeks and after 9 months) assessment were carried out for the same group. Study analyzed by using SPSS version 21 software, supported by Wilcoxon test, t test, and Spearman coefficient of Correlation. **Results:** There was significant change in psychopathology (Positive and Negative Syndrome Scale [PANSS]) and clearly; from fairly good pre to good post program (p-value = 0.013) and from good pre to good at follow-up program (p-value=0.04). There was significant improvement in social skills clearly; from 20.41% Moderates pre to 10.21% high at post and 46.94% moderate at follow-up intervention. On evaluation of the overall cognitive function's domains scoring grade pre 95.92% mild to 2.04% normal at post and 26.53% normal at follow up test measurement. **Conclusion:** The study concluded that rehabilitation program for schizophrenic patients was effective in improving their psychopathology, social and cognitive functioning domains. **Recommendations:** The study recommended that; the rehabilitation program should be integrated into treatment regimen of schizophrenic inpatients.

Keyword: Social and Cognitive Rehabilitation, Schizophrenic and Patients.

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INTRODUCTION

Schizophrenia is a significant health care problem, resulting in morbidity, mortality and economic cost [1]. It is broadly characterized by three domains of psychopathology: positive symptoms (hallucinations, delusions), negative symptoms (social withdrawal, lack of motivation and emotional reactivity) and cognitive deficits (working memory, attention executive function [2]). It is considered one of the top ten common conditions worldwide among young, adults as any chronic devastating illness [3]. It has strong neurological evidence that makes it hard to be treated.

Schizophrenia is a major cause of disability worldwide [4, 5]. Also it is 7th leading cause of disability-adjusted life years at global level and accounting for 2.8% of total global disability [6].

The prevalence rate of schizophrenia is approximately 1.1% of the population over the age of 18, at any one time as many as 51 million people worldwide suffer from schizophrenia [7]. The time table below shows the prevalence rate of schizophrenia over the world [7-9].

Schizophrenia is a disabling psychiatric illness associated with disruptions in cognition, emotion, psychosocial and occupational function [3, 10].

The more recognized symptoms of schizophrenia in the clinical practice are delusions and hallucinations (positive symptoms). A cognitive deficit is mostly responsible for the impairment of the social functioning of these individuals, with damage to work skills and social interaction [11, 12].

Social rehabilitation is a process that, the aim of it is to attain functioning ability [13].

Cognitive rehabilitation (CR) is designed to stimulate new learning, or relearning, of cognitive tasks and to improve domains deficit [14].

Psychiatric-Mental Health Nurses are play a vital role in administer, monitor pharmacologic agents and their effects, manages patient needs, resources episodically and are skilled in managing psychiatric rehabilitation as well as relapse prevention [16].

Schizophrenia is a serious mental illness which affects approximately 1 out of every 100 people and is a major cause of disability worldwide [4, 5]. Mortality is known to be two to three times higher than in the general population [17]. The life time prevalence of suicide in Schizophrenia is about 10 times higher than the general population and approximately one million people commit suicide every year [18].

It is often a chronic illness which can cause huge individual suffering for the affected individual, can impact heavily on friends and family members, communities, and can result in economic costs [19].

Schizophrenia is a serious health problem in the Sudan, which affects ages between (15-35) years this age of productivity [20]. So prevalence rate of schizophrenia is 3.6 cases per 1,000 persons in Sudan and target number who need treatment is 65,517 [21-23]. It has been estimated that 50 Percent of all mental hospital beds are occupied by Patients diagnosed as Schizophrenic [24]. The primary diagnoses of (32%) admissions to community-based psychiatric inpatient units in Sudan include schizophrenia [25].

Schizophrenia is chronic illness, patients usually suffer from positive and negative symptoms such as social isolation lack of motivation, apathy, loss of enjoyment and cognitive deficits that lead to decrease of self-independence and had negative effect on their cognitive and social function .Therefore, it is necessary to help these patients to improve the cognitive impairment and social behavioral deficits. So, Psychiatric nurses, social workers, clinical Psychologist's occupational therapists and other disciplines play major role in treatment plans and

rehabilitation program for schizophrenic patients. So that Rehabilitation programme is essential & integral part of the management plans of schizophrenic patients, such programmer need to be evaluated in Sudan to improve the way they are applied.

Several quantitative reviews have recognized that cognitive remediation is efficient in reducing cognitive deficits and in improving functional outcome of the disorder [27].

METHOD AND MATERIALS

METHOD

The study was conducted to evaluate the effectiveness of social and cognitive rehabilitation programs (psycho-education, social skills and cognitive skills training program) on male schizophrenic patients.

Study Design

The research design was a quasi-experimental pre, post and follow-up interventional study design for one group.

Study period: From 2015 to 2017

Study area:

This study was conducted at Abdalal Al-Ederisi psychiatric hospital that is affiliated to Ministry of Interior. This hospital located in Khartoum Bahry city-Kooper area, from east boarded Alshifa street and district Kafouri and northern industrial area. It consists of 4 sections:

- a) Mentally ill people who had criminal cases referred from the courts or prisons (36 beds).
- b) Female section with specific female nursing staff (18 beds).
- c) Intensive care unit for admission of acute and dangerous cases with isolation rooms (seclusion).
- d) Rehabilitation department. Each section supervised by professional nurses, psychologist and social worker.

Study Population

All patients diagnosed with schizophrenia and admitted to prof. Abdalal Al-Ederisi psychiatric hospital during the period of study (N=49) Participants.

Criteria of the subject's selection:

Inclusion criteria

- Inpatient.
- Male.
- Clinically diagnosed with chronic schizophrenia as per DSM V Criteria with at least 6 month duration of illness.
- Age from 25 to 44 years old.

Exclusion criteria:

- Seizure disorder and mental retardation.
- Acute exacerbation or alcohol- drug abuse.

- Patients with severe communication difficulties.
- Criminal cases referred from the courts or prisons.

Sampling: The Patients who fulfill criteria require.

Sample size:

Consist of (59) Patients attended in the setting area during study period. 10 Patients were quit, one of them due to refuse and other due to unable to contact.

Variables of study:

Dependent variable

Change on Social and cognitive (functioning) rehabilitation program

Independent variable:

Program socio- demographic

Tools:

Data was collected through structural personal face to face interview questionnaire and observation

Baseline Data:

It is divided into four sections to assess the following areas:

Socio- Demographic Data

PANSS:

Was used to assess positive and negative [110]. And Scoring measure by Likert scale 7 points [111].

Clifford Modified Scale: To assess social function [112].

Mini Mental State Examination

To assess the cognitive function [113], (See appendix 1 and 2)

Data Collection Technique

Data was Collected by researcher and researcher assistant (psychologist was trained for data Collection). Structural personal face to face Interview and observation, program designed by researcher according to research objective, literature review, as all as theoretical frame work of study.

Interventional Phases: This study was carried out through two phases:

Pre implementation phase: This phase contains main 2 steps:

Administrative phase

Before conduction of the study, a written letter explaining the aim of the study was directed from Faculty of Nursing National Ribat University to Hospital Director and Nursing Director to obtain their permission to carry out this study. An agreement was taken from the patients verbally and some of their

families were involved in this study, after explanation of the purpose of the study for each of them.

Validity and reliability

The tools were developed after careful review to test the validity. In addition to supervisor the questionnaire was revised by expert group in the field of the study who were specialized in Psychiatric Dr. Amal Sobhy Mahmoud (Associate Professor in Psychiatric Nursing), others group in faculty of nursing science, University of Khartoum, Dr.Nahed Abdel Azeem Faculty of Nursing –Suez Canal University –Egypt. Dr. Magda the head department of community health nursing in faculty of nursing science, University of Khartoum and a number of our nursing teachers who have experience in scientific research. Accordingly, some modifications were made and additional modifications were made to the tools after the pilot survey.

Pilot Study

The purpose of the pilot study was to test the applicability, feasibility and clarity of the tools, and it served to estimate the time needed to complete the tools. A pilot study was carried out on 10 patients from Abd alaal Alidrisi hospital not included in study avoiding biasness in an effort to test. After developed of the tools and starting the data collection. It included 10% of study it also helped to pilot study; the necessary modification of the tools was done. Reliability of the test instruments determined through the use of Cranach's Alpha for PANSS ($r=0.80$) and Pearson correlations coefficient to for social skills ($r=77.24$) and Cognitive ($r=78.5$) which indicate statistically significant acceptable for format.

Implementation phase:

The study was conducted in three phases (01-09-2015 to 21-03-2017.) as follows:

Assessment

Assessment Phase all study subjects (intervention group) were interviewed by filling the questionnaire and observation. All patients (49) were assessed at base line, at the end of the program (14weeks later), and follow up assessment 9 months later.

The researcher interviewed the patients for socio-demographic data and PANSS taken 40 minutes for one patient approximately, social domains were administering personal face to face interview and observation taken around 20 minutes and MMSE taken about 25 minutes for one patient.

On average it took about 90 minutes to complete the interview and assessment for a patient. During the assessment phase the researcher registered two phone numbers for each patient and his family, so as to contact for follow-up

Program

Social and cognitive rehabilitation Program is a form of psychosocial therapy designed to help patients to improve social and cognitive functioning. The main goals were aimed to teach patients the needed skills and to help patients to originate and maintain communication with others, Cognitive function. Specific objectives: a. to build up Social skills that are necessary for initiate and maintain interaction and communication with others. b. to develop skills that are necessary for patients to empower cognitive domains.

Program phases

Preparatory phase

- a) Preparation of the content: The content of the program based on others related literature (See appendix 3).

The planning phase includes the program strategy (time table, teaching methods, and participants assignments based on each skill were given) (See appendix 4).

The content of the program includes an introduction of signs and symptoms of chronic schizophrenia, determines the influences of negative symptoms of schizophrenia on patients communication and interaction with others, on patients themselves and on style of communication with other patients, applies and practices program in different situations, potentiates social interaction skills through understanding both verbal and nonverbal cues of communication with others, The researchers used discussion, role play, social events, one to one interaction, and demonstrations with participants to practice new skills (See appendix 4).

- b) Preparing patients: Preparing patients to be involved in the study was established by the researchers through introductory phase. Rapport with patients, introduce each one to other patients and researchers facilitate feeling of warmth and security.
- c) Assessment and data collection: (pre test) All participants completed all pre-study tools before the beginning of the program, through interview, revision of patients' records for patients' assessment for signs and symptoms.

Introductory phase (6 sessions)

An rapport between researchers and participants was made, brief explanation was done on signs and symptoms of chronic schizophrenia, immediate influence of these signs and symptoms on patients interaction with others, and how gradually patient become withdrawn.

Implementation phase (120 sessions)

In this stage, researchers started by easy and widely accepted more difficult contents. patients received group rehabilitation therapy by researcher and

two psychologist. The frequency of sessions was three to four time weekly at the same time and in the same place, for 14 weeks (first 6 weeks program was implemented to patients as one group at the garden than they were divided them in two groups at the ward (dining room) for 8 weeks. 14 sessions, Physical exercise one session per week duration of session 45-60 minutes, 46 sessions cognitive exercise and Social Skills training two sessions per week duration of session 60-90 minutes. Games used (alshtrang, ledo. Aldomona), drawing, reading, coloring and and 46 sessions psycho education per week 2 to 3 hours per day for session (Individual psycho education) every patient taken different time during period of fourteen weeks. 14 session's for recreation one to two sessions per week about 1.30 hours per session. Start the program by discussion about their illness and planned activities and demonstration and practice of the skills by explaining the benefits of practicing as to initiate and maintain relationship with others, so patient Participated in preparation of place for program also Participants were reinforced to participate in planned activities as physical exercise, playing different games (Alshtrang, Ledo. Aldomona), role play, and recreation therapy by audio cassette and patients participated by talents. Services provided by themselves. This might improve socialization with residents and others people in addition to improve cognitive function used activities (paper and pencil tasks) including drawing, coloring, reading and psycho education (See appendix 4).

Group interaction was observed and recorded in each session as patient who accepts to interact with only one patient and refused to interact with all other patients. Evaluation for each session was done through; immediate feedback from patients.

Evaluation phase (last session)

Patients were reassessed by using the same tools, at the end of program (14 weeks) to evaluate the impact of the rehabilitations program on the patients functioning (PANSS, social and cognitive), and nine month (follow up (20-09-2016 to 21-03-2017)) after the interventional program additional test was applied evaluate the effectiveness of the combine program on the patients functioning (PANSS, social and cognitive). Comparison was done to determine the effectiveness of the program.

MATERIALS:

Different materials were used (such as paper, pencil, books, pamphlet, footballs, cakes, sweets and games (alshtrang, ledo. Aldomona).

Data processing

The categorical data was analyzed by using SPSS (Statistical package for social sciences) version 21 software, descriptive and inferential statistical methods.

Data were presented using figures, frequencies, percentage, and tables, percentage, -to compare between mean used paired t-test and Wilcoxon test because data of social skills not normal distributed. Also used Spearman coefficient for Correlation

Ethical Consideration

Ethical approval was taken from National Ripat University to Abdalaal Aliderisi hospital to conduct the research study and received official permission from the Abdalaal Aliderisi hospital and also verbal consent was obtained from Patients.

After securing official requirement for carrying out this study: The subjects were allowed to decide whether to participate or not, data were unnamed and only used for the purpose of the study. The researcher explained the aim and nature of this study to the patients and their families with reassurance about confidentiality of patients, information and that will be used for scientific research only and apply formed consent (see appendix 5).

RESULTS

Table 1: Socio-demographic characteristics of male schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Variables		Frequency	Percent
1. Age/years	25-29	19	38.78%
	30-34	18	36.73%
	35-39	6	12.24%
	40-44	6	12.24%
2. Level of education	Illiterate	2	4.08%
	Primary	20	40.82%
	Intermediate school	2	8%
	Secondary	17	34.69%
	University	8	16.33%
3. Religion	Muslim	49	100%
	Christian	0	0%
4. Occupation	Student	7	14.29%
	skilled worker	12	24.49%
	Unskilled	8	16.33%
	Worker	10	20.41%
	Professional	5	10.20%
	Others	7	14.29%
5. Marital Status	Single	40	81.63%
	Married	4	8.16%
	Widowed	0	0.00%
	Divorced	5	10.20%
6.Type of family	Nuclear	14	
	Extended	35	28.57%
			71.43%
7. Residence	In parental home	19	38.78%
	In conjugal home	3	6.12%
	With relatives	27	55.10%
8. Family history of mental illness	Yes	26	53.06%
	No	23	46.94%
9. Family monthly income (SP)	<1000	6	12.3%
	1000-1499	25	51.0%
	1500 –1999	15	30.6%
	2000 – 2499	0	0%
	>2500	3	6.1%
10. Hobbies and interests.	Watching TV	16	32.65%
	Writing	1	2.04%
	Sporting	10	20.41%
	Reading Books	4	8.16%
	Others	18	36.73%

Table (1) showed socio-demographic data of the patients According to the results: the study found that one- third of patients were age between 25-29 years and their education Level was secondary school. more of them were skilled worker, student ,most of them

were single, 6.12%live In conjugal home , more than half of them had positive Family history of mental illness ,half of them had Monthly family income 1000-1499.

Table 2: Illness characteristics of Schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Variables		Frequency	Percent
1. Age of onset of schizophrenia	15 -25	18	36.73%
	26 – 35	30	61.22%
	>36 years	1	2.04%
2.Duration of illness	<1 years	7	14.3%
	1-3 years	16	32.7%
	4-6 years	9	18.4%
	7-9 years	10	20.4%
	>10 years	7	14.3%
3. Number of hospitalization within 1 years	Nil	14	28.57%
	Once	27	55.10%
	Twice	5	10.20%
	>three time	3	6.12%
4.Duration of treatment	<year	8	16.3%
	1-5 years	18	36.7%
	6-10 years	20	40.8%
	>10 years	3	6.1%
5. Indication for admission	Dangerous towards others	16	32.7%
	Dangerous towards self/ suicide	0	0%
	Relapse	33	67.3%
6. Causes of relapse	Stress	3	6.12%
	Stopped medication	38	77.55%
	Other	8	16.33%
7.Treatment Anti-psychotic	Atypical	28	57.14%
	Typical	18	36.73%
	Both	3	6.12%
8. Medication administer at home	By patient	30	61.22%
	By family	19	38.78%

Table (2) showed that two third of them age of onset of schizophrenia between 26 – 35years, duration of illness <1 years (14.3%) patients duration of treatment 6-10 years less than half (40.8%). More than

two third Indication of admission was relapse and there were seven patients (14.3%) Develop relapse during study period and majority of them due to stop medication (77.55%).

Table 3: Comparison mean difference regarding positive symptoms of the patients pre & post and pre & follow-up rehabilitation programs from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Items	<i>pre & post</i>				<i>pre & follow-up</i>			
	Mean	Std. Deviation	T	p-value	Mean	Std. Deviation	T	p-value
Delusions	.61	1.98	2.15	.036*	1.61	1.94	5.80	.000*
conceptual disorganization	.44	1.45	2.15	.036*	1.32	1.78	5.20	.000*
hallucinatory behavior	.57	1.42	2.79	.007*	1.20	1.64	5.12	.000*
excitement	.34	1.39	1.74	.088	.53	1.63	2.27	.028*
grandiosity	.12	1.83	.46	.642	.75	1.86	2.83	.007*
suspiciousness	.34	1.40	1.72	.091	.83	1.84	3.18	.003*
Hostility	.30	1.34	1.59	.117	.34	1.78	1.36	.180

*p value significant

Table 4: Comparison of mean differences of patient's regarding negative symptoms between pre & post and pr& follow-up rehabilitation program in Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017(N=49)

Items	pre & post				pre & follow-up			
	Mean	Std. deviation	T	p-value	Mean	Std. deviation	t	p-value
blunted affect	0.18	1.95	.65	0.51	.91	1.82	3.52	.00*
emotional withdrawal	0.02	2.21	.06	0.95	.95	2.02	3.32	.002*
poor rapport	0.43	1.84	1.62	0.11	1.32	1.79	5.17	.000*
passive/apathetic social	0.27	1.89	.98	0.33	1.20	1.73	4.86	.000*
difficulty in abstract thinking	0.47	1.73	1.89	0.06	1.28	1.84	4.86	.000*
lack of spontaneity and flow of conversation	0.27	1.75	1.05	0.29	.87	1.50	4.07	.000*
stereotyped thinking	0.18	1.96	.65	0.52	.28	1.74	1.14	.257

*p value significant

Table 5: Comparison mean differences of patients regarding general symptoms between (pre& post) and (pre& follow-up) intervention at Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Items	pre & post				pre & follow-up			
	Mean	Std. deviation	T	p-value	Mean	Std. deviation	t	p-value
Somatic	-.10	1.19	-.59	553	.04	1.07	.27	.792
Anxiety	.32	1.28	1.784	.081	.93	1.49	4.41	.000*
guilt feeling	-.08	.88	-.64	.522	.02	.82	.17	.864
Tension	.673	1.329	3.547	.001	1.10	1.62	4.75	.000*
Depression	.36	.48	5.27	.000*	.46	.68	4.83	.000*
mannerisms and posturing	.14	1.51	.66	.512	.61	1.35	3.17	.003*
motor retardation	.28	1.33	1.49	.142	.91	1.64	3.91	.000*
Uncooperativeness	.40	1.33	2.13	.038*	.53	1.72	2.16	.036*
unusual thought content	.69	1.68	2.88	.006*	1.42	1.58	6.33	.000*
Disorientation	.79	1.60	3.46	.001*	1.28	1.70	5.27	.000*
poor attention	.67	1.49	3.16	.003*	1.59	1.59	6.99	.000*
lack of judgment and insight	.75	1.60	3.30	.002*	1.61	1.68	6.71	.000*
Disturbance of violation	.18	1.72	.74	.461	.63	1.38	3.21	.002*
poor impulse control	.44	1.24	2.52	.015*	.69	1.50	3.23	.002*
preoccupation	.12	1.55	.55	.583	.16	1.22	2.64	.011*
active social avoidance	.30	1.26	1.69	.096	1.11	1.90	7.71	.000*

*p value significant

Table 6: Comparison of total Mean of PANSS of patients pre, post and pre ,follow up intervention at Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

The variables		Mean	Std. Deviation	D f	p-value
Positive	Pre	18.82	8.448	48	0.002*
	Post	16.06	7.915		
	pre	18.82	8.448	48	0.000*
	Flow -up	12.204	5.4657		
Negative	pre	18.531	8.0496	48	0.248
	Post	20.1	8.155		
	pre	18.531	8.0496	48	0.000*
	Flow- up	13.49	5.0005		
General	pre	41.22	11.721	48	0.000*
	Post	35.265	10.916		
	pre	41.22	11.721	48	00.000*
	Flow- up	27.184	27.184		
Total PANSS	pre	80.4	13.017	48	0.013*
	Post	73	10.349		
	pre	80.4	13.017	48	0.040*
	Flow -up	52.9	8.300		

*p value significant

Table 7: Distribution of PANSS Scoring of participant's pre, post and follow up intervention to male schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to May 2017 (N=49)

Items	Scoring		
	Pre	Post	Follow-up
Positive	fairly good	Good	Good
Negative	fairly good	fairly good	Good
General	same as before	fairly good	Good
Total PANSS	fairly good	Good	Good

Table 7: Total mean differences of schizophrenic patients regarding 7th items social skills between (pre& post)and pre & after 9months rehabilitation program in Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to May 2017 (N=49)

Items	pre & post				pre & follow-up			
	Mean	Std. Deviation	Wilcoxon	p-value	Mean	Std. Deviation	Wilcoxon	p-value
1-Speech	-.73	.569	-9.035	.000*	-.67	1.34	-3.50	.001*
Conversation with Residents	-.81	.697	-8.193	.000*	-1.06	1.24	-5.95	.000*
3-Conversation with Staff	-1.06	.801	-9.271	.000*	-.85	1.22	-4.90	.000*
4-Social Mixing	-.91	.640	-10.041	.000*	-.46	1.37	-2.4	.020*
5-Participation	-.75	.723	-7.315	.000*	-.46	1.26	-2.61	.012*
6-Leisure Activity	-.73	.730	-7.049	.000*	-.06	1.19	-.36	.722
7-Knowledge/ Concern for Other Residents	-.63	.809	-5.477	.000*	-.38	1.22	-2.22	.031*

*p value significant

Table 8: Comparison mean differences of participants regarding the 5th items of cognitive functioning domains between (pre and post)and (pre and follow up) intervention of male schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Items	pre & post				pre & follow-up			
	Mean	Std. Deviation	T	p-value	Mean	Std. Deviation	T	p-value
orientation	-1.42	1.69	-5.89	.000*	-3.14	2.26	-9.71	.000*
registration	-.26	.97	-1.90	.063	-.59	.95	-4.33	.000*
attention and control	-.14	.95	-1.04	.302	-.65	1.23	-3.70	.001*
recall	-.30	.76	-2.78	.008*	-.51	.86	-4.11	.000*
Language	-.73	1.49	-3.43	.001*	.59	1.65	2.50	.016*

*p value significant

Table 9: Comparison of Total Mean of schizophrenic patients concerning Cognitive Skills Training ,between (pre, post) and(pre, follow up) intervention in Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to May 2017 (N=49)

The variables		Mean	Std. Deviation	T	Df	p-value
Cognitive Skills Training	Pre	18.102	3.4776	5.61	48	.000*
	Post	20.98	3.2048			
	pre	18.102	3.4776	-10.94	48	.000*
	Flow -up	23.755	3.8326			

Table 10: Summary of total mean differences of psychopathology, social skills and cognitive functioning, of male schizophrenic patients, between (pre, post) and(pre follow-up) rehabilitation program of male schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Symptoms	Paired Differences					T	Df	Sig. (p)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
Pre, post +ve <i>symptoms</i>	2.75	5.88	.84	1.06	4.44	3.27	48	.002*
Pre, follow-up +ve sym	6.61	5.98	.85	4.89	8.33	7.73	48	.000*
Pre, post -ve <i>symptoms</i>	1.57	9.40	1.34	1.13	4.27	1.16	48	.248
Pre, follow-up-ve <i>sym</i>	6.61	7.94	1.13	4.33	8.89	5.82	48	.000*
Pre, post general sym	5.95	10.75	1.53	2.87	9.04	3.88	48	.000*
Pre, follow-general <i>sym</i>	2.69	2.06	.29	2.10	3.28	9.13	48	.000*
Pre& post social skills training	5.98	3.46	.49	-6.97	-4.98	-12.09	48	0.000*
Pre, follow social skills	4.83	5.70	.81	-6.47	-3.19	-5.93	48	0.000*
Pre& post cognitive function	1.26	1.57	.22	.812	1.71	5.61	48	.000*
Pre & follow-up cognitive function	-5.65	3.61	.51	-6.69	-4.61	-10.94	48	.000*

Table 11: Summary of statistics Correlation between pre-post and pre-follow-up rehabilitation program regarding psychopathology, social skills and cognitive functioning of schizophrenic patients from Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

Symptoms	N	Correlation	Sig.
Pair 1 pre& post +ve Symptoms	49	.743	.000*
Pair 2 pre& follow-up +ve Symptoms	49	.709	.000*
Pair 3 pre & post-ve Symptoms	49	.326	.022*
Pair 4 pre & follow-up -ve Symptoms	49	.348	.014*
Pair 5 Pre & post general	49	.551	.000*
Pair 6 pre& follow-up general	49	.443	.001*
Pair 7 pre& post social skills training	49	.722	.000*
Pair 8 pre& follow –up social skills training	49	-.043	.768
Pair 9 Pre & post cognitive function	49	.641	.000*
Pair 10 pre & follow-up cognitive function	49	.515	.000*

*p value significant

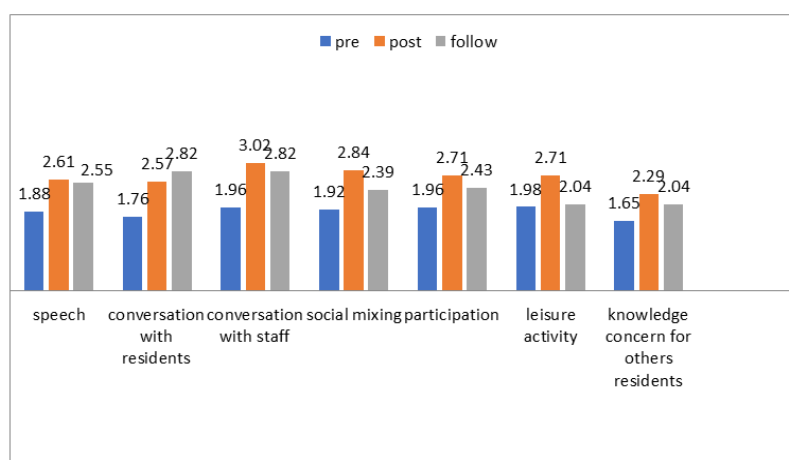


Figure 1: Distribution of mean total score of participant’s regarding social functioning, domains, between pre, post and follow-up rehabilitation program of schizophrenic patients from Abd Alaal Alidrisi during the period September 2015 to may 2017(N=49)

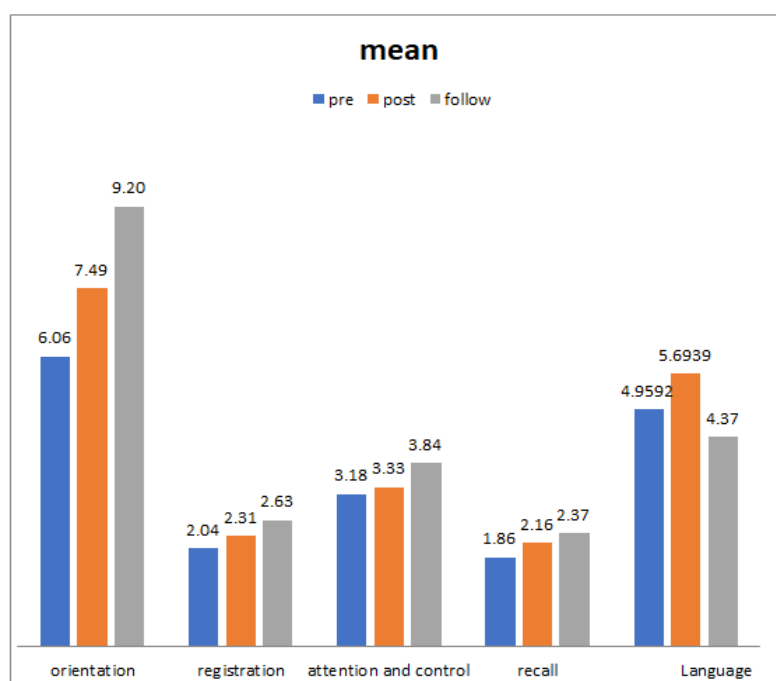


Figure 2: Distribution of total mean score of schizophrenic patients regarding the cognitive functioning domains pretest& posttest and follow- up intervention at Abd Alaal Alidrisi psychiatric hospital during the period September 2015 to may 2017 (N=49)

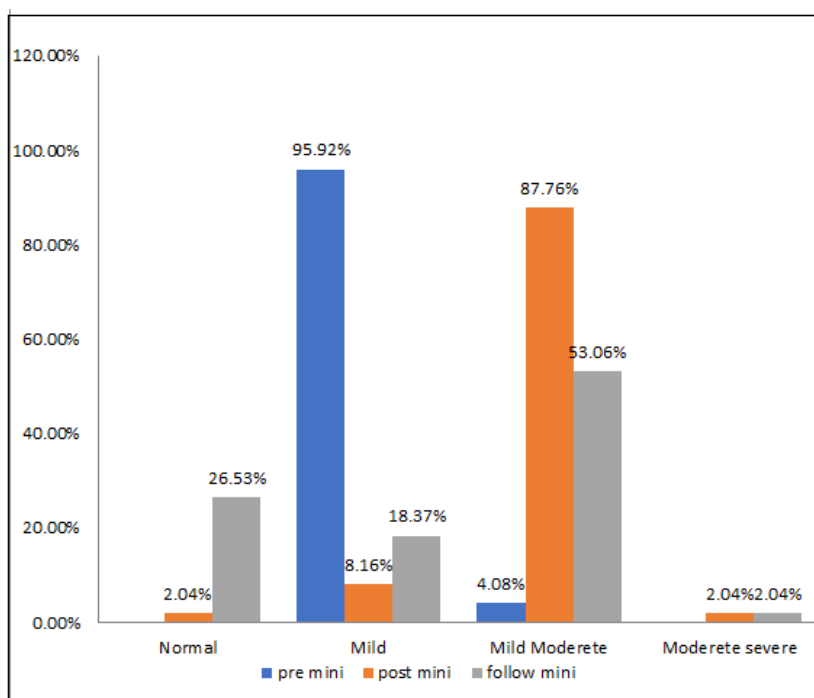


Figure 3: Scoring grade of overall cognitive functioning domains of patients in Alaal Alidrissi psychiatric hospital, pre & post and follow-up program application, during the period September 2015 to May 2017 (N=49)

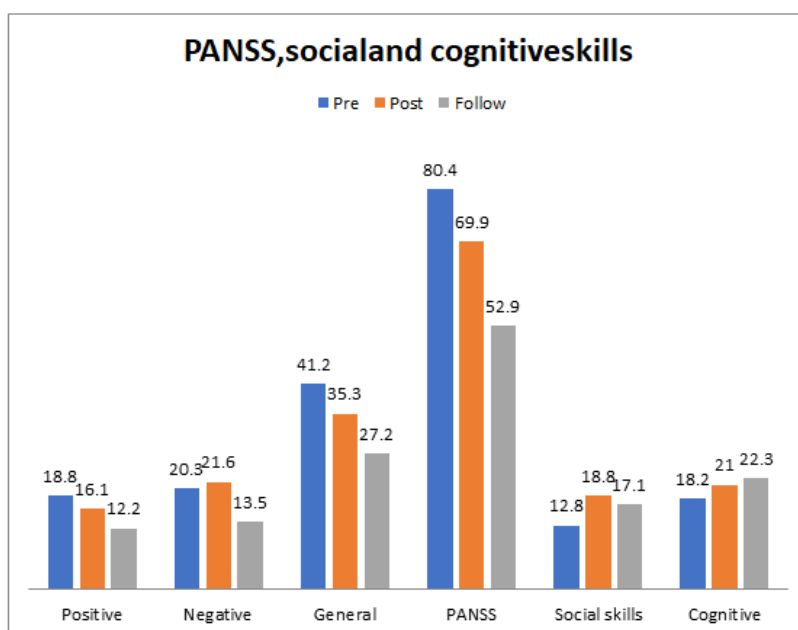


Figure 4: Summary of total mean scores of schizophrenic patients regarding psychopathology (symptoms), cognitive and social skills pretest, posttest and follow-up rehabilitation program at Abd Alaal Alidrissi psychiatric hospital during the period September 2015 to May 2017 (N=49)

DISCUSSION

Many recent developments in mental rehabilitation programs have helped people with schizophrenia enhance their social and cognitive functions as well as their quality of life. The goal of this study was to see how social and cognitive rehabilitation programs affected male Schizophrenic patients at the Abd Alaal Alidrissi Psychiatric Hospital. It included 49 inpatients who were allocated to the Rehabilitation program, some of whom had been clinically stable on

antipsychotic drugs for at least six months prior to the trial.

In terms of the patients' socio-demographic information, According to the findings, one-third of the patients were between the ages of 25 and 29, and their education level was secondary school, indicating that this is a productive age. More of them were skilled workers, students, and the majority of them were unmarried, with 6.12 percent of them living in poverty.

In the conjugal household, more over half of them had a positive family history of mental illness, half had a monthly family income of 1000-1499, and two-thirds of them had no family history of mental disease. Patients with a start of schizophrenia between the ages of 26 and 35, a duration of disease of less than one year (14.3%), and a treatment duration of less than six years (40.8%) [2]. Relapse was the reason for more than two-thirds of admissions, and there were seven p

In terms of psychopathology, the study found that positive symptoms in schizophrenia patients were reasonably good before the program, improved to good after the program (P value 0.002), and then returned to good after nine months (P-value=.000). This could be attributable to the program. This conclusion was similar to that of studies conducted in the United States and Europe [65, 67]. Tao J, *et al.*, also did research. Patients in Group B demonstrated considerable improvement in PNASS after the cognitive rehabilitation impact of schizophrenia patients participating in rehabilitation training [95]. Another study was carried out by Ne da Ali beigi1 and colleagues [101].

The current study found a significant correlation between pre- and post-intervention mean scores of participants for positive symptoms (p value 0.000) and pre- and post-intervention total mean score of participants for positive symptoms (pvalue.000), indicating that positive symptoms decreased in mean scores post-intervention than before, and that this reduction in positive symptoms led to an improvement in patency.

Negative symptom data revealed that they were quite good, (18.5318.050) pre, no change at post program (20.10 8.155) p value.248 and to good, (13.4905.001) after nine program intervention, p value 0.000 very significant. This indicates that patients who received rehabilitation training improved significantly, with a substantial drop in negative symptoms score in the pretest compared to the follow-up program, as evidenced by various nursing studies [72-81]. Except for stereotyped thinking (value 0.257), all mean values suggest substantial improvement (p0, 05). Negative symptoms may take a long time to improve [65, 67].

The current study found a p value 0.022 association between pre and post mean scores of participants for negative symptoms, as well as positive findings at follow-up p value0.01, implying that as participants' negative symptoms are reduced, their social function improves. Negative symptoms of schizophrenia are obviously significant factors in defining a patient's quality of life, particularly their social life [54]. A growing number of researchers and doctors are concentrating their efforts and focusing their interests on enhancing abilities in the management of unpleasant feelings in patients (54)Negative symptoms are essential to the pathology of schizophrenia and are

associated with significant decline of motivation, verbal and nonverbal communication, affect, and cognitive and social functioning [54, 55]. Therefore, the negative symptoms give a huge impact on poor outcome and functioning in schizophrenia. On the other hand, those findings have been in American and European countries [65]. Also a study was carried out by Koujalgi SR *et al.*, [110].

Evaluation of a social and cognitive skills training program's effectiveness: There were statistically significant changes post intervention compared to before in terms of participants' general symptoms pre intervention (Mean = 41.2211.721), post intervention (Mean = 35.2710.916 at p value.000), and follow-up (Mean = 27.186.512, p value.000) in terms of general psychopathology symptoms in patients with schizophrenia. This means that the social and cognitive skills training program was successful in lowering participants' general symptoms and improving their social and cognitive skills. Participation in sports may be a possible factor for increased social and cognitive performance. So that showed correlation between general psychopathology symptoms in patients with schizophrenia pre & post test p value 0.000) and pre& follow-up test p value 0.01. All this results showed significant improvement post intervention due to effect of program.

Effectiveness of social and cognitive skills training program: Regarding psychopathology symptoms (Total mean PANSS) among in patients with schizophrenia, there were statistically significant changes post intervention than before regarding participants' general symptoms pre intervention (Mean =80.3±13.017) while post intervention (Mean 73±10.349) (p value0.0130) and follow-up Mean =52.9±8.300, (p value0.040).

Concerning social skills rehabilitation for schizophrenic patients a study proves that improves social functioning, in the domains of Speech, Conversation with Residents, Conversation with Staff, Social Mixing, Participation, and Conversation with Staff, Leisure Activity and Knowledge/Concern for Other Residents.) results indicate that statistical significant difference in the mean scores of the study population regarding social skills training, pre mean12.77, increased at posttest18.75 but follow-up decreased were 17.09. to compare of participant's regarding items social functioning pre, post and after 9months rehabilitation program, respectively pair wise comparison showed significant level change in Pre test measurement & post test measurement regarding social skills training mean (5.98±3.46 (p value 0.000) and pre& follow-up social skills training mean(4.83±5.70) (p value 0.000) .also there was improvement concerning to social skills training grading score levels among schizophrenic patients were found that 20.41% Moderates, 44.90% Low, 22.45% Poor and 12.24% very

Poor pre program but improved at the post program to 10.20% high level 53.06% Moderate, 34.69% low and 2.04% Poor of social skills score and slightly decrease in follow-up rehabilitation program test to 46.94% moderates and 53.06% low, this indicates the importance of carrying on social skills training program. This means an increase at post program with a slightly decrease in follow-up rehabilitation program test. This needs continuous social skills training. This finding is in concordance with the findings of many studies [27, 99, 108, 109]. The results demonstrate significant correlation between social skills training program pre intervention & posttest intervention p value 0.000. This means it indicates improvement in social skills after 14-week training program but negative correlation of Pre test & follow-up Intervention p value 0.768. This means there is no effect. The study indicated the effectiveness of social skills training program in improving the social skills of schizophrenic patients.

Regarding cognitive skills training, the study results showed statistically significant improvement in cognitive domains (orientation, registration, attention, calculation, recall, language) which were used to assess the cognitive functioning in schizophrenic patients. Cognitive skills training in study, the mean scores of the participants during pre (18.20 ± 3.478) to (20.99 ± 3.205) post and (22.3 ± 3.833) at follow-up compared to cognitive domains correspondingly pair-wise comparison showed significant cognitive level. Increased mean scores between the patients pre test measurement & post test measurement were found (P value 0.000) and Pre & follow-up (p value .000). The data indicated the effect of cognitive rehabilitation training on attention, memory, and language fluency in schizophrenia patients. This finding is in concordance with the findings of many studies [27, 65, 77, 78]. The results discovered that there was a statistical significant difference between pre and post test data of patients as regarding social skills training $P < 0.05$. The study indicated the effectiveness of social skills training program in improving the social skills of the participants and had proposition to its importance for schizophrenic patients, as it should be run as a regular care like medications and other therapies.

The study revealed that significant improvement of overall cognitive functioning domains scoring grade of study participants, compared pre measurement 95.92% mild, 4.08% mild moderate & post program to 2.04% normal, 8.16% mild, 87.76% mild moderate and at follow up 26.53% normal, 18.37% mild, 53.06% mild moderate, 2.04% moderate severe. These results suggest that the cognitive rehabilitation therapy played a significant role in improving the cognitive functioning of schizophrenic patients [95]. Correlation mean scores of patient's cognitive domains pre & posttest and pre & follow-up (p value 0.000) these findings are not consistent with the findings of numerous studies [94, 100, 105, 106].

These results indicate that physical exercise, games playing, reading, writing individual and psycho-education (social and cognitive rehabilitation training) can contribute to an improvement in the cognitive function of people with schizophrenia. The changes in cognitive outcomes can also contribute to improvement in community integration. Participants were encouraged to praise each other using positive interaction, which encouraged communication skills and improve interaction. The present study result revealed that, there was statistically significant when compared cognitive domains pre and post rehabilitation training a significant improvement in pre and follow up rehabilitation training a significant increase in level of cognitive domains (orientation, registration, attention, recall and Language) cognitive domains play an important role in respect of social and cognitive functioning. Our study results revealed that after the cognitive rehabilitation had impact on schizophrenia patients participating in a rehabilitation training. The data indicates the effectiveness of cognitive rehabilitation training on attention, memory, and language fluency in schizophrenia patients. Finally, this study results suggest that the social and cognitive rehabilitation program was played a significant role in improving the social and cognitive functioning of schizophrenic patients.

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