

Efficacy of Social Skills Training On Symptoms Intensity, Insight and Social Functioning In Patients with Schizophrenia

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Abstract

Background: Schizophrenia is a major mental illness that causes change in perception, thoughts, behavior and insight into illness. Cognitive impairments and social skill deficit are hallmarks of schizophrenia. Social skill training is the specific abilities that enable an individual to perform a task competently in social situations.

Aim: This study aimed at determining the efficacy of social skill training on symptoms intensity, insight and social functioning in patients with schizophrenia.

Research design: Quasi-experimental design was used in this study.

Setting: This study was conducted at El-Azzazi Hospital for Mental Health at Abu Hammad City in Sharkia Governorate.

Subjects: A purposive sample of forty patients with schizophrenia.

Tools of data collection: Four tools were utilized for data collection: Socio-demographic data sheets, Insight Scale, Positive and Negative Syndrome Scale, and Inpatient Psychiatric Rehabilitation Outcome Scale.

Procedure: The sample was randomly divided into an experimental group (twenty patients), and a control group (twenty patients), who participated in the program. The social skills training program consisted of fourteen sessions, two sessions per week and each session lasted about sixty minutes, held during a period of two months. Pre, and post assessment were carried out for the two groups.

Results: There were statistically significant difference between experimental group and control group regarding intensity of symptoms, insight and social functioning after implementation of social skill training program.

Conclusion: Social skill training for patients with schizophrenia was effective in reducing intensity of symptoms and improving both insight and social functioning skills.

Recommendations: Social skills training program, in addition to pharmacological treatments, should be estimated as an important modality in daily practice due to its effect on improving symptoms, insight, and level of functioning in schizophrenic patients.

Key words: social skills training, insight, symptoms, social functioning, schizophrenia

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I. Introduction

Schizophrenia is a serious and disabling brain disorder, affecting 1% of the general population. Social dysfunction is a hallmark of schizophrenia and a major component of burden on the individual and their family. Social dysfunction is described by deficiency in general social functioning and a variety of social skills. Therefore social skills training are the specific abilities that allow an individual to achieve a task proficiently in social situations (**National Institute of Mental Health (NIMH) 2011**).

Schizophrenia is a multifaceted mental illness that manifested by negative, positive and cognitive deficit symptoms in memory, attention and executive functions. In schizophrenia, particular impairments are experienced in vital functioning areas as relations with others, work, and self-care. Such impairments inhibit patients from developing social relationships, satisfying their social roles and requirements, resulting in diminishing quality of life for patients (**Yildirim, et al., 2015**).

According to **Yadav, (2015)**, people with schizophrenia have obvious deficits in social skills since either they have never learnt them or they have missed them within the course of a serious mental disorder (SMI). The deficiency of core social skills (i.e. conversational, interpersonal relationship and assertiveness) exist in several formulas, such as: lack of spontaneity or clearness in conversation and inappropriate style of communication and interaction with others. Individuals suffer from a significant deficiency of social skills find difficulty to establish and maintain social relationships and fulfill ascribed social roles. Also they find it hard to meet their necessities, to adapt and live a stable social life within the society.

Furthermore, schizophrenic Patients suffer from extreme deficiency of social and economic status. Illness makes functional disability that last mostly throughout life. Individuals with schizophrenia who have loss or impairment of function may inhibit them from partaking in different societal events. In patients with

schizophrenia social skills are considered as an essential factor for participating in events of society. So, the role of rehabilitation is necessary to resume their functions in the communities (**Koujalgi, et al., 2014**).

Insight is a vital concept in schizophrenia that consists of a number of different, but interrelating aspects. Clinical insight is defined as the individual's recognition of having a psychiatric disease, medication compliance, and the capacity to re-label abnormal mental events as pathological (**Erol, et al., 2014**). Moreover, insight exists along a continuum and differs in individuals at diverse period of time over the course of illness (**Ayasa-Arriola et al., 2014**). Lack of insight into illness is a familiar clinical feature that exists among serious mental illness, particularly schizophrenia and bipolar disorder. Studies indicate that the impairment of insight is a crucial feature in schizophrenia and the rates of prevalence differing from 30–80% among severely mentally ill patients (**Wiffen et al., 2010**).

In addition, insight in schizophrenia is a multidimensional phenomenon influencing attitude of patient towards medication and compliance. Thus good insight correlates with better post-hospital adjustment, better response to medication, positive post-discharge outcome, and superior medication compliance. On the contrary, poorer insight has a higher association with violent behavior and decline of psychosocial functioning. Lack of insight connects with reduced ability for adherence to medication, which results in relapse and recurrent hospitalization (**Joseph et al., 2015**).

Social skills training (SST) is considered an essential manner of treatment for clinicians, and social workers during rehabilitation. The deficiency of social functions is found in numerous mental illnesses, and one among that is schizophrenia disorder. This deficiency involves difficulty to maintain and establish relationship, failure to perform or resume a role. There are also insufficiencies of self-care skills and participation in recreational activities (**Tsang & Lak, 2010**). Currently the base of treatment for schizophrenia is antipsychotic medication that significantly diminishing the severity of positive symptoms. Conversely, this medication has a very poor influence on diminishing cognitive impairment, negative symptoms and improving the overall functioning of the person. Psychosocial intervention for treatment of person with schizophrenia plays a crucial role in improving social functions. These negative symptoms are linked to the capacity of persons to socialize, and are associated with cognitive deficits that are found in numerous patients (**Singh, et al., 2018**).

In addition, Social skills training are applied to assist individuals in learning specific skills that are missing or those that will compensate for the missing ones. Social skills training enhance ability to acquire and sustainability of particular social skills; it develops social functioning activities significantly more frequently as compared to the patients in treatment as usual (**Kumar & Singh, 2015**).

Moreover, the training program enables patients to acquire daily life skills when providing them reinforcement and support to practice the skills in appropriate, safe, and therapeutic situations. Subsequently when patients equipped with skills to deal with stressful life events and daily hassles, they become more efficient in problems solving and challenges that arise throughout lifespans; therefore stressors are less likely to activate exacerbations, stabilize their illnesses, enhance medication compliance and support progress to recovery (**Abd EL Aziz, et al., 2017**).

Significance of the Study

Lack of insight has a dominant significance in psychotic patients' condition, it is related to poorer global functioning, intensity of psychopathology, delayed seeking of treatment, prolonged course, treatment-refractory symptoms, avoiding of hospitalizations, recurrence and poorer outcome (**Omer, et al., 2016**).

Social skills training, has proved efficacy in acquiring skill, and has been known as a psychosocial treatment of choice for schizophrenia. Psychosocial treatment aims at improving insight, re-socialization and rehabilitation of patients with schizophrenia in their environment and society to live independently and reduction of symptom or remission is considered the utmost broadly measures (**Mwansisya, et al., 2013**).

Large and developing body of research of previous studies supports the efficacy of social skills training for patients with schizophrenia. Wherever patients can learn and retain a diversity of skills of social life. Consequently, psychiatric nurses are in a great position to assess deficiency of social skills and provide appropriate intervention. Teaching social skills is an essential role of the nurse which involves help patients in learning and practicing skills of social interaction, such as utilizing efficient method of communication for interaction with others. Nurses can support patients in solving problems and improving their social interaction. Therefore, the researchers are interested in providing social skills training for schizophrenic patients and determining the efficacy of the training program on the insight, symptom intensity and social functioning. It is hoped that results of the present study might help enhancing nursing care of schizophrenic patients and establish evidence based data that can upgrade nursing practice and scientific research.

Aim of study

This study was designed to determine the efficacy of social skills training on symptoms intensity, insight and social functioning in patients with schizophrenia through the following objectives:

- Assessing the insight, symptom intensity and social functioning in patients with schizophrenia
- Developing and implementing social skill training program for patients with schizophrenia to improve insight, decrease symptom intensity and enhancing social functioning.

Research Hypotheses

Schizophrenic patients who will receive social skills training program will have statistical significance difference in symptoms intensity than control at post intervention than pre.

Schizophrenic patients who will receive social skills training program will have statistically significance difference in their insight than control group at post intervention than pre.

Schizophrenic patients who will receive social skills training program will have statistical difference in their social functioning at post intervention than pre.

II. Subjects And Methods

Research design

A quasi-experimental research design was used to achieve the aim of this study.

Sample and setting

A purposive sample of 40 patients with schizophrenia was selected from El-Azzazi Hospital for Mental Health at Abu Hammad City in Sharkia Governorate. Patients were selected based on the following inclusion criteria: (a) both genders, b) patients who are newly admitted, c) having no organic disorders, d) being diagnosed as a schizophrenia disorder based on DSM-V e) being mentally and physically stable enough to interact in group, f) having no mental retardation, g) adherence to antipsychotic medication in hospital. Those who agreed to participate in the study were randomly assigned as 20 for the experimental group and 20 for the control group. All names of recently admitted patients were written in a small piece of paper individually, and then the paper was folded and put within the container. They were chosen as 20 for experimental group and 20 for control group.

Tools for data collection:

Four tools were utilized in this study:

1- Socio-demographic/ medical data sheet:

This sheet was designed by the researchers after studying the related literature and opinions of expertise for content validity and including socio-demographic data of the patient: such as age, residence, marital status, educational level, occupation and diagnosis and duration of disease and number of hospitalizations.

2- Insight Scale (IS):

It was developed by **Birchwood et al., (1994)**, in order to measure level of insight in patients with psychosis. It comprise of 8 items separated into 3 subscales to assess awareness of illness (2 items number 2&7) maximum total 4, relabel of symptoms (2 items number 1&8) maximum total 4 and need for treatment (4 items number 3,4,5&6) divide score by 2 to give the total score. The scale was measured on a three-point Likert scale where 0= disagree, 1= unsure and 2= agree. The total score ranged from 0 to 12 points. A higher score means greater level of insight, scores equal to or higher than nine indicate adequate awareness of mental illness. This scale has adequate internal consistency (Cronbach alpha 0.75) for Arabic form. The tool was translated into Arabic by the researchers and back translation was performed. Validity of this scale was confirmed by five experts in the field of psychiatry and psychiatric nursing. Items numbers (2, 3, 6 & 8) are reversed scoring.

3- Positive and Negative Syndrome Scale (PANSS):

This scale was developed by **Kay, et al., (1987)** to assess the symptoms of psychosis. It consisted of 30-items divided into three sub-scales which are positive symptoms involving 7 items (e.g., hallucinations, delusions); negative symptoms containing 7 items (e.g., flat affect, a-volition); and general psychiatric symptoms (16 items). Items are ranked on seven-point Likert scale (1= absent of symptoms to 7= extreme symptoms). Cronbach's alpha of positive and Negative Syndrome Scale was 0.79.

Scoring system:

The scores are calculated by summation of ratings across component items. So, the potential ranges are 7 to 49 for the Positive and Negative Scales, and 16 to 112 for the General Psychopathology Scale. In addition to these measures, a Composite Scale is counted by subtracting the negative score from the positive score. This produces a bipolar index ranging from -42 to +42, which is a fundamentally a difference score revealing the degree of prevalence of one syndrome in relation to the other.

4- Inpatient Psychiatric Rehabilitation Outcome Scale(IPROS):

This scale was developed by **Li, Hu, Jin, Tian& Phillips, (1994)** to measure social function for psychiatric patients. It involves 31 items divided into 5 subscales comprising: Performance in occupational therapy (7 items), daily activities (7 items), socialization (5 items), personal hygiene (5 items), and level of interest in external events (7items). Responses was rated on a 4- point likert scale (0=normal function to 3= sever dysfunction). The highest score indicates the higher level of social dysfunction. Cronbach's alpha of IPROS = 0.973.

Pilot study

It was conducted on 10% of patients with schizophrenia who are newly admitted to test the tools for clarity, relevance, generality, understanding, and ease of implementation. The results of the data obtained from the pilot study helped in modification of the tools; items were then corrected or added as needed. Those who join in the pilot study were avoided from the actual study.

Ethical considerations

The researcher was attained an official agreement, for conducting the study, from the Director of El-Azzazi Hospital for Mental Health. This approval for participation of the patients was obtained after the aim of the study was clarified to them; they were given a chance to refuse to participate. They were informed that they could extract at any phase of the research study and also they were sure that the information would be confidential and utilized for the research purpose only.

Content validity

Content validity of the tools was examined by five psychiatric nursing and medicine professors, who reviewed the tools for clearness, relevance, applicability, fullness, understanding, and easiness of application, and according to their opinion, minor changes were applied.

Statistical design

All data collected were organized and submitted to statistical analysis, by utilizing statistical package for the social sciences, version 20 (SPSS Inc., Chicago, Illinois, SA). According to type of data, the quantitative variables were presented in the form of mean and SD, while frequency and percent were used for qualitative variables. Mann Whitney U test was done to compare between two groups of non-normally distributed variables. Paired t test was performed to compare between two dependent variables among normally distributed variables. Wilcoxon Signed Ranks Test was used to compare between two dependent variables of non-normally distributed variables. Percent of categorical variables were compared by applying Chi-square test or fisher exact test when indicated. When, P-value less than 0.05 was considered statistically significant (S). However, p- value greater than or equal to 0.05 was considered statistically non-significant (NS).

Procedure of data collection

Description of social skill training program

Program Objective

This training program was performed to educate patient's necessary skills for communicating and interacting with others that required for improving insight and living independently, which sequentially relieve the intensity of psychiatric symptoms in patient with schizophrenia.

The training program consists of 14 sessions carried out on four phases, the first two sessions were for assessment, and program sessions were 11 sessions and final session for evaluation.

1-Preparatory phase

A-Preparation of the content

The preparation of the intervention program was done by reviewing of the current, past, local and international related literature. There were various strategies used in this program as time table, participants' assignments and teaching methods that depend on every skill were given.

The basic structure of the sessions was prepared by taking in to the account the need of the patients and facilities available in the hospital. After the assessment of the patients in the group, contents of the sessions were prepared.

The program content includes meaning, symptoms, and causes of schizophrenia; influence of schizophrenia on social skills of patients as (self-care and domestic activities); learning to identify schizophrenia, its treatment and side effects; looking for the useful methods in dealing with the persistent symptoms; different method of coping with attention and memory problems; managing emotion; knowledge

about how to cope with stress, improving self-confidence, recreational and daily activities; fostering friendly relationships and participating in activities of social and vocational skills.

The training program focuses mainly on developing and enhancing social skills with others such as (verbal & nonverbal cues, starting and maintaining communication and active listening with others), assisting participants to join the social activities and interpersonal relations. Insight into their illness and associated problems, coping strategies for the warning signs or persistent symptoms, and increase of ego functions of the patients. Applying activities of self-care as personal hygiene and grooming care, through usage of positive reinforcement, importance of diverse conversational skills such as attending and responding skills; applying three forms to communicate with others (passive, aggressive, and assertive type) and learning skills of problem solving.

B- Preparing patients:

The researchers prepared patients to be included in the study via the introductory phase. An associate between researchers and patients was made, introducing every patient to other one and researchers encouraged feeling of security and warmth. The researchers clarified to patients the purpose and procedure of the study.

C-Assessment and data collection: (pretest)

The participants in a study and control group were asked to complete a baseline questionnaire, which was 1 week before the intervention. The assessment was accomplished through 'semi-structured interview for patients, to collect data regarding social function and insight. However, the observation and revision of patients' records were checked by the psychiatrist for assessment of patients' signs and symptoms.

2-Introductory phase (two sessions):

The researchers present themselves to subjects, and described briefly the aim of the study and reassured that the information obtained is firmly confidential and would not be utilized for any purposes other than research and the experimental group then was separated into two subgroups each group contain 10 participants for facilitating interaction and practice. After that, brief explanation was given on meaning and symptoms of schizophrenia (positive and negative symptoms, cognitive symptoms, and insight disturbance), and effect of schizophrenia on patients' skills such as (self-care and social).

3-Intervention program (11 sessions):

The program's contents were implemented in 11 sessions. The length of each session is 60 minutes for the study subgroups. The group intervention was carried out for two months twice a week along with regular providing opportunity for them to practice learned skills. Social skills training were given to the patients according to the established and prepared structure of the sessions.

The following strategy employed for teaching social skills such as lecture, discussion, role play, providing examples, shaping, rehearsal, and reinforcement. Additionally, prompting (providing hand signals) and coaching (providing verbal prompts) were used during role plays to help in improving performance of patients. Summary was given at the end of each session; more explanations and feedback were done for unclear items.

In each session of the intervention phase, the researchers clarified the topic designated for that session for 5 min. Later 25 min were utilized for explanation, demonstration, and role-play; 20 min were utilized for introducing new skills and remaining 10 min were utilized for assigning homework.

The researchers started from simple to more difficult subjects. The interview was twice weekly that performed in the same ward and at the same time. The sessions included demonstration of new skills and discussing planned activities. Learning of new skills as attending to verbal and non-verbal cues, expression of opinions, was achieved through guidance, demonstration and practice.

After the patients had practiced new skills, the researchers motivated them to participate in planned activities as role play, demonstration and practice of the skills by clarifying the importance of practicing as to initiate and maintain relationship with others, efficient interaction and releasing tension. Researchers used open-ended questions, warmth and interest with patients. Teaching another skills as stressors of work place through recognition of work place stressors, manage interpersonal problems, deal with work linked duties, coping with supervisors, interacting with formal socialization. Each session is performed by power point presentation, pamphlet contains the chief points of topic, and what proposed to accomplish. The duration of study was 2 months, started from beginning of February to the end of March 2019. The researchers started from 9Am: 1Pm.

(4) Evaluation phase (last session):

All patients were reassessed by utilizing the same tools of pretest, and comparison was done to determine the efficacy of social skill training program.

III. Results

Table (1) shows that 75% of experimental group and 70% of control group, their ages were less than 40 years. 50% of both groups were males. As regards educational level, 80% of experimental group and 60% of control group had basic and secondary education. 85% of experimental group and 80% of control group were not married. In relation to job, 60% of experimental group and 65% of control group were not working. Regarding residence, 75% of experimental group and 80% of control group were from urban areas. The table also indicates that there was statistically insignificant difference between the study group and control groups regarding demographic characteristics ($P>0.05$).

Table (2) reveals that the mean duration of disease for experimental group was 7.75 ± 4 years while in control group it was 11.6 ± 7.5 . 45% of experimental group had three previous hospital admissions or more compared to 40% in the control group. As regards diagnosis, 70% of experimental group suffered from chronic schizophrenia compared to 60% in control group. The table also shows that there was statistically insignificant difference between the study group and control groups concerning disease history ($P>0.05$).

Table (3) shows that the total mean score of Positive and Negative Syndrome Scale for the experimental group was 153 ± 13 compared with 156 ± 8 for the control group, and there was statistically non-significant difference between both groups regarding total mean score of Positive and Negative Syndrome scale and also regarding all mean scores of Positive and Negative Syndrome subscales before social skill training program ($P>0.05$).

However, after social skill training program, the total mean score of Positive and Negative Syndrome Scale for the study group was 129 ± 11.5 compared with 155 ± 8.2 for the control group, and there was statistically significant difference between both groups as regard to total mean score of Positive and Negative Syndrome scale and also regarding all mean scores of Positive and Negative Syndrome subscales ($P<0.05$).

Figure (1) demonstrates that, the total mean score of Positive and Negative Syndrome Scale at pre-program phase was 153 ± 13 for the experimental group compared to 156 ± 8 for the control group. However, at post-program phase the total mean score of Positive and Negative Syndrome Scale was 129 ± 11.5 for experimental group compared to 155 ± 8.2 for the control group.

Table (4) indicates that, there was statistically insignificant difference between experimental and control groups regarding all mean scores of Insight subscales and also regarding total mean score of Insight Scale at pre-program intervention ($P>0.05$).

However, at post-program intervention, the mean scores of each of Relabeling of Symptoms, Awareness of Illness, Need for Treatment and total Insight scale were 1.8 ± 0.78 , 2.7 ± 1 , 2.5 ± 0.8 and 7 ± 2 respectively for experimental group compared with 1.15 ± 0.87 , 0.5 ± 0.7 , 0.7 ± 0.57 and 2.35 ± 0.7 respectively for control group, also there was statistically significant difference between both groups regarding all mean scores of Insight subscales and also total mean score of Insight Scale ($P<0.05$).

Figure (2) illustrates that, the total mean score of Insight Scale before training program was 2.1 ± 2 for the experimental group compared to 1.95 ± 1.3 for the control group. However, after training program, the total mean score of Insight Scale was 7 ± 2 for experimental group compared to 2.35 ± 0.7 for the control group.

Table (5) revealed that, there was statistically insignificant difference between experimental and control groups concerning all mean scores of Inpatient Psychiatric Rehabilitation Outcome subscales and also total mean score of Inpatient Psychiatric Rehabilitation Outcome Scale at pre-program phase ($P>0.05$).

However, at post-program phase, the mean scores of each of Daily Life Activities, Social Performance, personal Hygiene and total Inpatient Rehabilitation Outcome Scale were 5.9 ± 2.9 , 3.6 ± 3 , 3.75 ± 2.3 and 45 ± 9.5 respectively for experimental group compared with 16.25 ± 3.75 , 11.3 ± 4.4 , 12 ± 2.7 and 74.4 ± 13 respectively for control group, also there was statistically significant difference between both groups regarding mean scores of each of Daily Life Activities, Social Performance, personal Hygiene subscales and also total mean score of Inpatient Psychiatric Rehabilitation Outcome Scale ($P<0.05$).

Figure (3) demonstrates that, the total mean score of Inpatient Psychiatric Rehabilitation Outcome Scale before implementation of the program was 72.9 ± 10.8 for the experimental group compared to 75 ± 12.5 for the control group. However, after implementation of the program, the total mean score of Inpatient Psychiatric Rehabilitation Outcome Scale was 45 ± 9.5 for experimental group compared to 74.4 ± 13 for the control group.

IV. Discussion

Person with schizophrenia displays greater degrees of social skill deficiencies. The deficiency could be related to poor premorbid learning capabilities, resisted environmental stimulation, psychopathology, and the diminished skills due to extended or further number of hospitalizations (**Koujalgi et al., 2014**). This study aimed to determine the efficacy of psychosocial skill training on symptoms intensity, insight and social functioning in patients with schizophrenia.

As regards, patients' characteristics, the results revealed that, the majority of both experimental and control groups, their *ages* were less than 40 years and there was no statistical significant difference between

experimental and control groups. This can be related to the beginning of schizophrenia which arises early in life in adolescence or young adulthood and the illness is progressive and restricting condition.

In this respect, **Elmasri (2011)** indicated that, approximately half of patients in experimental group and more than half of patients in control group, the beginning of disease among them ranged from 20 to less than 30 years.

On the same line, **Mousa et al. (2011)** and **Khalil (2012)** found that, near than half of patients' age ranging from 30-40 years. However, more increase in patients' age was recorded by **Abd El Aziz et al. (2017)** who found that the majority of the patients their ages ranged between 40 < 50 years old. Similarly, **Abd El Khalek (2008)** in his study about educational program for chronic schizophrenic male patients on their insight demonstrated that, three quarters of patients in the study and control groups were found in the age between 40 to less than 60 years.

The current study results found that majority of experimental group and more than half of control group had basic and secondary *education* only, and there was no statistical significant difference between two groups. This can be related to the early beginning and chronicity of illness that hinder the patient to achieve higher levels of education.

In this respect, **Abd El Hameed (2006)** mentioned that, the greater number of his studied samples were uneducated or had primary school education. Additionally, **Abd El Khalek (2008)** revealed that more than three fifths of patients in study group achieved moderate education as well as two fifths of patients in control group who did it. On the other side, **Abd El Aziz et al. (2017)** found that majority of the studied subjects had higher education.

The present study results revealed that more than half of both experimental and control groups were not *working*, and there was no any statistical significant difference between two groups. This can be related to illness manifestation or hospitalization. This result is in accordance with **Abd El Aziz et al. (2017)** who stated that majority of the studied subjects had no work as they left their works or didn't work at all. In this respect, **Barzegar et al. (2016)** found the same results. However, **James (2013)** who studied effectiveness of social skills training in patients with chronic schizophrenia mentioned that most of the patients receiving social skills training were employed. Similarly, **Abd El Khalek (2008)** revealed that majority of patients in experimental group and most of patients in control group were working.

The current study results found that majority of both experimental and control groups were not *married*, and there was no any statistical significant difference between two groups. This might be owing to the damaging outcome of schizophrenia on the personal relations of the patients. This goes on line with the results of **AlHossainy (2012)** who showed that, the majority of studied sample were single and referred his results to poor social adjustment as a well-known symptom of schizophrenia.

The present study results revealed that majority of both experimental and control groups were from *rural areas*, and there was no any statistical significant difference between two groups. In this regards, **James (2013)** found the same results.

The current study results indicated that, patients suffered from a long *duration of disease* (extra seven years) among experimental and control groups, and there was no statistical significant difference between both groups in relation to the mean duration of disease. This can be related to the chronicity and relapse of mental illness. This result also agreed with, **James (2013)** who found that the mean duration of illness among the patients in his study was more than ten years. On the same line, **Elmasri (2011)** mentioned that there was no statistical significant difference between experimental and control groups regarding duration of illness.

The current study found that less than half of both experimental and control groups have *admitted* to the hospital three times and more, and there was no statistical significant difference between experimental and control groups. However, **Abd El Aziz et al. (2017)** mentioned that more than half of patients in their study entered the hospital from 3-6 times. Also, **Elmasri (2011)** reported that, more than half of subjects in experimental group and three quarters of subjects in control group were entered hospital for more than three times in their lifetime.

The socio-demographic characteristics of patients in this study for both the experimental and control groups show that no statistical significance, this means that all of these factors are retrograde that didn't influence the training program.

Concerning psychiatric symptoms, the current study revealed that, there were a statistically significant difference in mean scores of Positive Symptoms, Negative Symptoms, General Psychiatric Symptoms and the total mean scores of Positive and Negative Syndrome Scale (PANSS) for the experimental group compared with the control group at post program phase. This finding revealed a significant reduction in intensity of symptoms after the program, which in turn accepts the research hypotheses. This indicates that, the program played an important role in reduction of intensity of symptoms, as well as it improved knowledge and awareness of psychiatric illness, enhanced medication adherence and effective communicating skills. These findings were in agreement with several studies such as those of **Deveci et al. (2008)**, **Abo ElElla et al. (2015)** and **Yildirim et**

al. (2015) who found similar results.

In the same vein, **Abd El Aziz et al. (2017)** found that there was a highly statistically significant reduction of mean score of positive symptom, negative symptoms and overall symptoms post program intervention. In this respect, **Soliman et al. (2018)** reported that there is a statistically significant difference between patients who received PCSPP (patient and caregiver schizophrenia psycho-education program) and those who received TAU (treatment as usual) regarding positive, negative, general psychopathology symptoms, and total scores, with a higher score in TAU patients.

Moreover, **Li et al. (2018)** who studied intervention for people with schizophrenia, they noted a significant reduction of BPRS (Brief Psychiatric Rating Scale) and PANSS-N (PANSS-Negative scale) scores in the intervention group after nine months intervention. These results indicate that the inclusive intervention can diminish psychotic symptoms, specifically some negative symptoms among schizophrenic patients.

However, **Koujalgi et al. (2014)** indicated no significant decrease in SANS (Scale for the Assessment of Negative Symptoms) score in the study group in comparison with the control group. Similarly, **James (2013)** found that the scores of PANSS after receiving social skills training had decreased significantly but when compared with patients' not receiving social skills training the scores were similar. He concluded that social skills training had no influence over improvement in the severity of illness.

Regarding insight into illness, the current study revealed that there was a significant difference in mean scores of *relabeling of symptoms* of the experimental group compared with the control group at post program. This means that the program has succeeded to change patients' beliefs toward attribution of one's symptoms as portion of one's illness positively. In contrast, **Elmasri (2011)** and **Abd El Khalek (2008)** found that, the ability to relabel symptoms didn't show statistical significant difference at pre, post and follow-up program in experimental and control group.

Results of the current study revealed that, at post program, there was a significant difference in mean scores of *awareness of illness* of the experimental group compared with the control group. This might be related to improved level of consciousness regarding presence of disease among experimental group as a consequence of training program. Similarly, **Elmasri (2011)** found that, at post program, there was highly statistically significant difference between experimental and control groups. At follow up, the result didn't prove any statistically significant difference.

The current study results indicated a statistically significant difference in mean scores of *need for treatment* of the experimental group compared with the control group at post program. This means that the program has changed patients' views and attitudes toward benefits of medication positively. Meanwhile, **Elmasri (2011)** and **Abd El Khalek (2008)** mentioned that, there was no statistical significant difference between experimental and control group at post and follow-up program regarding need of treatment.

Concerning total insight into illness, the current study demonstrated a statistically significant difference in total mean scores of insight for the experimental group compared with the control group at post program. These findings accept the research hypotheses. This result can be contributed to the psycho-social training program that was concerned with enhancing insight through teaching patients about schizophrenia and agreeing their mental illness and training them different skills to enhance their insight. In this regards, **Elmasri (2011)** found the same results.

This result also agrees with those of, **Deveci et al. (2008)** who stated that the mean insight score increased significantly following the PST (social skill training) program. They added that the high insight scores were due to the patients had completed acute treatment and were on maintenance therapy. On the same line, **Uchino et al. (2012)** reported that there was statistically significant difference between experimental and control groups in the level of insight.

Moreover, these findings were in agreement with several studies such as those of **Chien and Lee, (2013)**, **Chien and Thompson (2014)** and **Çetin and Aylaz (2018)**, who found an improvement in patients' insight about schizophrenia. They interpreted their results as the mindfulness-based psycho-education given to the study group improved the cognitive insight of the patients.

However, in a study performed by **Khoury et al. (2015)** it was clarified that the psychosocial symptoms of the patients declined but the cognitive insights did not improve. Also, **Sauvanaud et al. (2017)** found the same results.

The effect of the program on patient's social functioning was measured through five domains of Inpatient Rehabilitation Outcome Scale including performance at work, daily life activities, social performance, personal hygiene and interest in surrounding events.

As regards patient's *performance at work*, the present study results demonstrated that there was no statistically significant difference between study and control groups before and after the intervention program. This could be explained in terms of the patients learn to be dependent on the controls or routines of others specifically the nursing staff and consequently they could not take initiative for self or environment. Similarly, **Elmasri (2002)** mentioned that none of the items of patient's function in work therapy has shown any

statistically significant difference between the study and control groups pre and post intervention program.

Concerning the domain of *daily life activities*, results of the present study revealed that statistically significant differences were detected among experimental and control groups at post intervention phase. This indicates that the program was successful in improving skills and enhancing activities that require intellectual multidimensional functions and complex interactions. However, **Elmasri (2002)** found that none of the items of activities of daily life has shown any difference of statistical significance between the experimental and control groups at pre and postprogram phase.

As regards *social performance*, the current study clarified that there were statistically significant differences among study and control groups at post program phase. This can be explained as the effect of social skill training which expands an individual's social, recreational, physical and leisure time skills. It brings out talents and lets the individual feels proud of his achievements, a matter which decrease withdrawal, promotes motivation and increase the level of social competence. Similarly, **Roberts and Penn (2009)** stated that there was a significant enhancement in socialization level, relation with others and conversation spontaneity among a sample of patients with schizophrenia after implementation of a program.

As regards the domain of *personal hygiene*, results of the current study revealed that statistically significant differences were detected among study and control groups at post intervention phase. This can be interpreted as the program helped the patient in the study group to play an active role regarding care of himself and management of his home environment. In the same line, **Abd El Hameed, (2006)** and **Roberts and Penn (2009)** reported that there was statistical significant difference in the study sample as regards personal hygiene scores before and after the intervention.

Concerning patient's *interests in surrounding* events, results of the present study indicated that no significant difference was found between study and control groups before and after the intervention program. This indicates that the program needs more concentration on activities which can enhance sense of reality of the self and the world and reality testing. Also more concentration is needed on creative and recreational activities. In contrast, **Elmasri (2002)** demonstrated that, as relates to interests in surrounding events, the mean percent score in the study group was statistically lower at post intervention phase, compared to that of the control group.

The effect of the program on total Inpatient Psychiatric Rehabilitation Scale (IPROS) revealed that, the total mean score in the study group was statistically significantly lower at the post-intervention phase, compared to that of the control group. This finding revealed a significant improvement in social functioning after the program, which in turn accepts the research hypotheses. This indicates that the program played a successful role in improving problem solving, enhancing member's abilities to adapt and perform life's daily tasks, increasing patient impulse control, increasing interpersonal interaction and enhancing learning. Similarly, **Abd El Aziz et al. (2017)** revealed that, there were highly statistically significant relations between mean scores of social skills dimensions in the study sample before and after the intervention.

In this respect, **Gupta et al. (2012)** in their study stated that, there was a significant enhancement in social functioning and personal relations in the patients, and neurocognitive functioning seemed as an indicator of enhanced skills and behaviors.

Furthermore, **Koujalgi et al. (2014)** mentioned that, intensity of social deficits reduced in their study, there was an enhancement in social functioning level after 20 sessions. They added that, this effort is seen to be contributed; so social skill training management option is extremely significant when dealing with schizophrenic patients with predominant negative symptoms. These interventions may ultimately declines symptoms therefore more improves the quality of social life.

Additionally, **Li et al. (2018)** in their study clarified that there is a significant improvement in social functioning, which was evaluated by GAF (Global assessment of functioning). GAF score in the intervention group was really increased at both 6 months and 9 months, and there was a significant interaction between intervention and time.

To summarize, actual steps will have been taken for recovery only to the degree the patients are able to utilize the skills they developed in social skills training in their lives. Strengthening is a natural outcome of social skills development, because skillful patients can have superior control of their lives. Social skills training is an effective remedy based on learning while practicing, not just talking about what will be done and nourishing the potentials of every patient. It does not focus on symptoms or psychopathology (**Liberman, 2012**).

V. Conclusion

This study demonstrated that social skills training for patients with schizophrenia have made important contributions in reducing intensity of patients' psychiatric symptoms, improving insight and social functioning. It is expected that the addition of this social skill training program into the routine treatment of schizophrenia would provide significant positive outcomes.

VI. Recommendations

Depending on the current study results, the following recommendations were advised:

- Social skill training program, in addition to pharmacological treatments, should be estimated as an important modality in daily practice due to its effect on improving symptoms, insight, and level of functioning in schizophrenic patients.
- Longer follow-up periods are recommended to determine the long-term effects of psychosocial skills training intervention on outcomes of schizophrenic patients and their families.
- Generation of community-based mental health services, including administration of psychosocial skills training programs, can contribute significantly to increasing quality of life in patients and their families.
- Further research is needed to address assessment of generalizability of social skill training in real life situation and also the factor affecting the transferring of new learned skills from therapeutic setting to real life situation.

Table (1): Demographic characteristics of experimental group and control group:

	Experimental group No (%)	Control group No (%)	X ²	P
Age per year:				
<40	15(75)	14(70)		
≥40	5(25)	6(30)	0.13	0.72
Sex:			0	1
Male	10(50)	10(50)		
Female	10(50)	10(50)		
Educational level:				
Illiterate	4(20)	6(30)	3	0.23
Basic& secondary	16(80)	12(60)		
University	0(0)	2(10)		
Marital status:				
Married	3(15)	4(20)	f	0.99
unmarried	17(85)	16(80)		
Job:				
not work	12(60)	13(65)	1.6	0.2
work	8(40)	7(35)		
Residence:			0.1	0.7
Urban	15(75)	16(80)		
Rural	5(25)	4(20)		

X²= Chi square test

f=Fisher Exact test

Table (2): Comparison between experimental group and control group as regard disease history

	Experimental group No(%)	Control group No(%)	test	P
Duration of disease per year				
mean± SD	7.75±4	11.6±7.5	MW	0.14
Median(Minimum-maximum)	8(2-18)	10(2-23)		
Admission			X ² =5.3	0.2
Once or two times	11(55)	12(60)		
three times and more	9(45)	8(40)		
diagnosis			X ² =1.9	0.6
schizo affective	3(15)	4(20)		
chronic schizophrenia	14(70)	12(60)		
Paranoid	3(15)	4(20)		

MW=Mann-Whitney-u test of significant

Table (3): Comparison between of experimental group and control group regarding Positive and Negative Syndrome Scale pre and post intervention

	Group I cases (No= 20)	Group II control (No= 20)	t	p
Pre-test Positive Symptoms				
mean± SD	37.9±3.7	39±4.4		
minimum- maximum	27-43	31-45	0.78	0.44
Post-test Positive Symptoms				
mean± SD	31.3±3	38.8±4.4	6.3	<0.0001
minimum- maximum	23-35	31-45		
Paired t	20.8	1		
P	<0.0001	0.33		

Pre-test Negative Symptoms mean± SD minimum- maximum	36±5.8 25-47	38.6±4.2 31-43	1.56	0.13
Post-test Negative Symptoms mean± SD minimum- maximum	33.4±4.8 24-41	38.5±4.3 30-43	3.5	0.001
Paired t p	6.2 <0.0001	1.4 0.11		
Pre-test General Psychiatric Symptoms mean± SD minimum- maximum	79±9 54-90	78±6 69-88	0.43	0.67
Post-test General Psychiatric Symptoms mean± SD minimum- maximum	64.6±7.6 45-75	77.9±6 69-88	6.1	<0.0001
Paired t p	25.4 <0.0001	1.3 0.16		
Pre-test total Positive and Negative Syndrome Scale mean± SD minimum- maximum	153±13 120-174	156±8 143-167	0.72	0.48
Post-test total Positive and Negative Syndrome Scale mean± SD minimum- maximum	129±11.5 104-147	155±8.2 142-167	8	<0.0001
Paired t p	26 <0.0001	2 0.056		

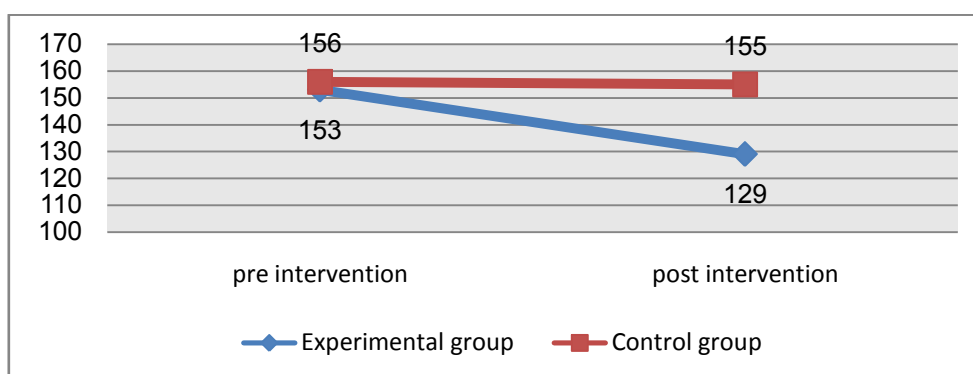


Figure (1): Total mean score of Positive and Negative Syndrome Scale at pre and post intervention of experimental group and control group

Table (4): Comparison between experimental group and control group regarding Insight Scale at pre and post intervention

	Study group (No= 20)	Control group (No= 20)		*p
Pre-test Relabeling Symptoms mean± SD minimum- maximum	0.9±1.1 .00-3	0.9±0.72 0.0-2		0.67
Post-test Relabeling Symptoms mean± SD minimum- maximum	1.8±0.78 .00-3	1.15±0.87 0.0-2		0.02
**p	0.004	0.25		
Pre-test Awareness of Illness mean± SD minimum- maximum	0.6±.8 0.0-2	0.4±0.68 0.0-2		0.35
Post-test Awareness of Illness mean± SD minimum- maximum	2.7±1 0.0-4	0.5±0.7 0.0-2		.000
**p	0.0001	0.16		
Pre-test Need for TTT mean± SD minimum- maximum	0.6±.6 0.0-1.5	0.65±0.7 0.0-2		0.821
Post-test Need for TTT mean± SD minimum- maximum	2.5±0.8 1-3.5	0.7±0.57 0.0-1.5		.000

**p	0.0001	0.52		
Pre-test total Insight Scale				0.827
mean± SD	2.1±2	1.95±1.3		
minimum- maximum	0-5.5	0-4		
Post-test total Insight Scale				.000
mean± SD	7±2	2.35±0.7		
minimum- maximum	3-10	1-3.5		
**p	0.0001	0.096		

*Mann-Whitney-u test of significant ** Wilcoxon Signed Ranks Test.

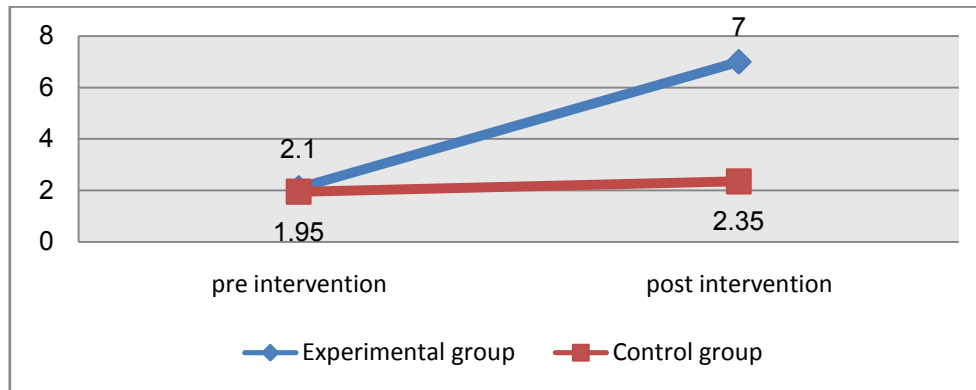


Figure (2): Total mean score of Insight Scale at pre and post intervention of experimental group and control group.

Table (5): Comparison between experimental group and control group regarding Inpatient Psychiatric Rehabilitation Outcome Scale at pre and post intervention

	Study group (No= 20)	Control group (No= 20)	t	p
Pre-test Performance at Work				
mean± SD	20.5±0.69	20.2±0.9	1.2	0.24
minimum- maximum	19-21	19-21		
Post-test Performance at Work				
mean± SD	18.8±3.3	19.8±1.2	1.3	0.19
minimum- maximum	12-21	17-21		
Paired t	2.7	1.6		
P	0.01	0.11		
Pre-test Daily Life Activities				
mean± SD	16±3.5	16.4±3.8	0.3	0.76
minimum- maximum	9-21	9-21		
Post-test Daily Life Activities				
mean± SD	5.9±2.9	16.25±3.75	MW	0.000
minimum- maximum	3-14	9-22		
**p	0.0001	(paired t)=0.8 P=0.4		
Pre-test Social Performance				
mean± SD	11.25±3	11.5±4		.373
minimum- maximum	5-15	3-15		
Post-test Social Performance				
mean± SD	3.6±3	11.3±4.4	MW	.000
minimum- maximum	0.0-11	3-15		
**p	0.0001	0.18		
Pre-test personal Hygiene				
mean± SD	11±3.9	11.9±2.6	MW	0.6
minimum- maximum	3-15	8-15		
Post-test Personal Hygiene				
mean± SD	3.75±2.3	12±2.7	MW	<0.0001
minimum- maximum	.00-10	7-15		
**p	0.0001	Paired t=0.37 P=0.7		
Pre-test Level of Interest in Surrounding Events				
mean± SD	14±4.4	15.4±3.7	0.96	0.34
minimum- maximum	6-21	11-21		

Post-test Level of Interest in Surrounding Events mean± SD minimum- maximum	13±4.2 4-21	15.1±4.4 6-21	1.4	0.16
Paired t				
P	2.4 0.025	0.9 0.38		
Pre-test total Inpatient Rehabilitation Outcome Scale mean± SD minimum- maximum	72.9±10.8 54-91	75±12.5 53-93	0.66	0.5
Post-test total Inpatient Rehabilitation Outcome Scale mean± SD minimum- maximum	45±9.5 30-66	74.4±13 49-94	5.1	.000
(paired t)	16	1.6		
P	<0.0001	0.12		

** Wilcoxon Signed Ranks Test Mw= Mann-Whitney-u test of significant

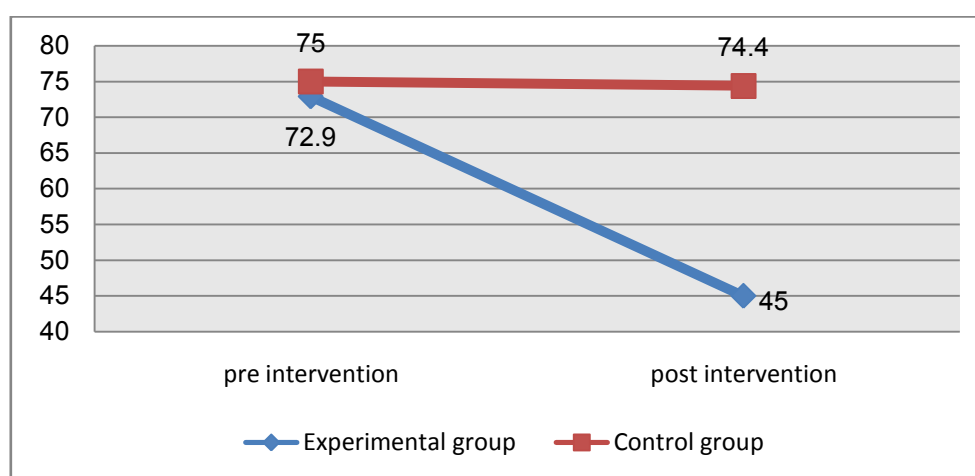


Figure (3): Total mean score of Inpatient Psychiatric Rehabilitation Outcome Scale at pre and post intervention of experimental group and control group

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