- *Basic Research*

Effectiveness of Psycho-Motivational Training on Improving Social Skills and Emotional Regulation in Patients with Schizophrenia

[1]Saida El Sayed Hassan Ibrahim El-Azzab*, [2] Shimaa Mohamed Hassan Ali, and [3]Basma Elsayed Mohamed Othman.

1. Assistant Professor of Psychiatric/Mental Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt. 2. Lecturer of Psychiatric/Mental Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt. 3. Lecturer of Psychiatric/Mental Health Nursing, Faculty of Nursing, Cairo University, Egypt.

***The corresponding author:** E-mail address: saida.ibrahim@nursing.bsu.edu.eg, saida_hassan@yahoo.com. Orcid ID: https://orcid.org/0000-0002-8615-8591. Phone No: +201119942093.

Abstract:

Background: Schizophrenia is a psychotic condition marked by a lack of understanding of reality and insight, that can be found in symptoms of severe mental disorders such as delusions, hallucinations, chaotic speech, and chaotic behavior, including negative symptoms that cause societal harm. Psycho-educational interventions such as psycho-motivational training are one of the initiatives that can be given to patients with schizophrenia the aim of increasing patient socialization and emotional regulation skills as well as patients are able to adapt to their environment. **Aim:** To study the effectiveness of psycho-motivational training program in improving social skills and emotional regulation in patients with schizophrenia. **Design:** A quasi-experimental design (pre/posttest single group type) was used. **Sample:** A purposive sample of sixty patients with schizophrenia participated in this study. **Setting:** the study was carried out in El kasr El Ainy Psychiatric and Addiction hospital. **Tools** for data collection were: Sociodemographic and Medical data sheet, Observable Social Cognition Rating Scale was aimed to investigate the construction of social cognition; Toronto Alexithymia Scale was used to assess the difficulty of recognizing and describing emotions; Brief Negative Symptom Scale was used for measuring social withdrawal, emotional withdrawal or diminished emotional range, avolition, alogia, and anhedonia; and Emotion Regulation Questionnaire was used to measure respondents' tendency to regulate their emotions. The program consisted of 14 sessions. **Results:** The study results showed that there were highly statistically significant differences between the observable social cognition, identifying and describing emotions, self-evaluation of negative symptoms, and emotion regulation through before, after, and follow-up implementation of the program. **Conclusion:** The findings revealed that psycho-motivational training for patients with schizophrenia had a great positive effect on improving social skills, and emotional recognition. As well as the training program was effective in improving negative symptoms among patients with schizophrenia. **Recommendation:** The study recommended that the essential need for increment empowered psychiatric mental health nurses and other team members with psychoeducation and training programs to help patients acquire social skills and control inappropriate emotions for engaging in adaptive relationships with others in the modern hospitals' environment.

Keywords: Emotions Regulations Skills, Psycho-Motivational, Schizophrenic, Social Skills, Training

1. Introduction

Schizophrenia is a dangerous mental disease that influences 1% of the population and it is associated with personal, social, and family burden. A collection of indications and symptoms linked with decreased social or occupational functioning is used to diagnose schizophrenia. Patients with schizophrenia have impairments in many domains or areas of psychopathology, including disorganization (thought disorders), psychotic symptoms (hallucinations and delusions), negative symptoms (lack of motivation, social withdrawal, and blunted affect), emotional symptoms (mania or depression) and cognitive impairment (executive functions, abstraction, memory, and attention) [(1)].

The assessment of social skills is an essential outcome variable for assessing social dysfunction in patients with schizophrenia. Their evaluation comprises methods such as observation, role-playing, interviews, rating scales and self-assessment, which are employed depending on the type of outcome as well as the cultural norms of the studied population [(2)]. Treatment of social impairment with social skills training improved both social function and negative symptoms in patients with schizophrenia, while positive symptoms have a good response to antipsychotics, negative symptoms therapy is still an unmet need [(3)].

Emotion dysregulation is defined as broad deficits in these four interrelated but distinct components: (a) awareness, understanding, and acceptance of emotions, (b) ability to involve in goal-directed acts while suppressing impulsive behaviors when facing unpleasant emotions, (c) the capability to participate in situationally suitable strategies to modulate emotional replies, and (d) the acceptance of experience negative emotions as part of important life experiences. Accordingly, there may be interaction effects among these components, which may collectively influence the use of dysfunctional cognitive feeling adaptation strategies in schizophrenia spectrum illnesses than a single component of poor emotional awareness [(4)].

Despite the usefulness of psychoeducational interventions, engaging patients with schizophrenia conditions in treatment has been shown to be challenging due to motivational challenges and limited insight. While some people may participate in treatment because of external influences (such as service providers, family, or courts), persons who seek treatment on their own decision tend to have better therapeutic outcomes [(5)].

Essential motivation, which may be characterized as a drive to engage with a task because of an appreciation for its inherent value rather than external reward, is the type of motivation most strongly connected with cognitive remediation results, such as increased visual stimulation, perceived proficiency for the training activity, and enhanced attentional and arithmetic skills [(6)].

Schizophrenia's negative symptoms are distinguished by significant decreases in reward-seeking behavior despite an apparent intact capacity to perceive pleasure. This behavior reduction, which might encompass nonverbal, speech, and social behavior, impedes daily life functioning and interferes with recovery process using reinforcement paradigms or effort tasks, found that as the gap between the likelihood and size of a reward steadily increases, motivational difficulties of schizophrenia might fail to express the amount of the reward modalities [(7)].

The efficacy of psychological and drug-based interventions continues to be limited and there is a strong clinical need for new interventions for negative symptoms. Experts highly advise combining psychological approaches with pharmacological treatments to improve social functioning. Existing psychosocial therapies, however, are insufficiently targeted and frequently only relieve negative symptoms indirectly; yet interventions that challenge defeatist thinking can be useful [(8)].

Many therapeutic approaches, such as support, training, and psychotherapy, have the potential to significantly reduce the negative emotional excitation of family caregivers and

may predispose caregivers' physical, emotional, and mental health to increase care quality. Emotion control assists people in understanding their emotions. This is the procedure by which a person experiences and expresses his or her emotions [9].

1.1. Significance of the Study

Schizophrenia is a critical mental condition marked by significant problems in thinking, mood, perception, and social interaction. It affects around seven per thousand adults, primarily those between the ages of 15 -35. Although the incidence is modest (3 per 10,000), the prevalence is significant due to the illness's chronicity [10]. Moreover, cognitive deficiencies coexist with social dysfunction. These abnormalities that accompany the disorder have been directly associated with problems in everyday living (community functioning, interpersonal relationships, problem-solving strategies, or new skills acquisition [11].

A previous study at Ain Shams University, on 309 patients with schizophrenia, was done by **Khalil et al** [12] who indicated that psychoeducation is a form of mental health intervention in which basic coping skills for dealing with various stressors are taught. They added that it focuses on educating patients with schizophrenia about their symptoms, emotional responses, and treatments, as well as supporting positive coping mechanisms. In this sense, it serves the goals of both treatment and rehabilitation and such as, it is limited and also cost-effective. Another study done by **El-Ghamry et al.** [13] showed that providing patients and their families with psycho-educational program to a sample of Egyptian families of patients with schizophrenia appears to have had a positive impact on patients with schizophrenia and their caregivers. This is supported by the observation of the experimental group showed that, an overall significant improvement in attitudes and gain in knowledge which were not detected in controls. Moreover, there were significant clinical improvements in patients in regard to the symptomatology and the compliance

with treatment. Also, patients' quality of life and social functioning were markedly improved.

Therefore, psycho-motivational training program is needed to empower patient with schizophrenia with social and emotional regulation skills that can act as an enhancement for measuring patients' quality of life and social functioning and enhance essentials for their personal development and adaptation skills. From this perspective this study aims to study the effectiveness of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia.

2. Aim of the Study

The aim of the study was to study the effectiveness of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia. This was achieved by accomplishing the following goals:

- Assessing levels of social skills and emotional regulation in patients with schizophrenia.
- Designing a program of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia.
- Implementing a program of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia.
- Evaluating the effectiveness of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia.

2.1. Research Hypothesis:

- Patients with schizophrenia who participated in the psycho-motivational training program are more expected to improve their social and emotional regulation skills, after implementation of the program than before.
- Patients with schizophrenia who contributed to the psycho-motivational training program are more anticipated to improve negative symptoms after implementation of the program than before.

3. Subjects and Methods

3. 1. Research Design

Quasi-experimental design (pretest and posttest single group type) was used in this research.

3. 2. Setting

The current study was conducted in the Inpatient Departments of El kasr El Ainy Psychiatric and Addiction hospital, Egypt.

3. 3. Sample

The sample includes sixty patients with schizophrenia from the previously mentioned setting and who were selected utilizing the purposive sampling technique. During the study period, the participants were chosen based on the following inclusion criteria: Both genders, aged between 18 -55 years old, patients were taking antipsychotic drugs clinically stable at the time of the study, diagnosed with schizophrenia disorder according to the DSM-IV, and chronicity more than two years.

Exclusion criteria: Participants were excluded if they presented with; current or past history of pervasive developmental disorder or intellectual disability by DSM-IV criteria (defined as IQ < 70), current or past history of medical or neurological disorders that may affect brain function (e.g., seizures, CNS tumors, or loss of consciousness for 15 or more minutes), sensory limitations including visual (e.g., blindness, glaucoma) or hearing impairments that would interfere with assessment, history of substance abuse within the past month, excluding nicotine or caffeine, and patients had language disorders.

3. 4. Data Collection Tools

One constructed interview sheet, which includes of five tools for data collection were used in this study:

Tool I: Sociodemographic and Medical data sheet was developed by the researchers to record all the related sociodemographic and medial data: Sociodemographic data will be collected regarding age, gender, marital status, educational level, occupation. While medical data includes psychiatric diagnosis, age of onset, current medication, current signs and symptoms, duration of illness, number of hospital admissions and family history of psychiatric disorders (specify).

Tool II: Observable Social Cognition Rating Scale (OSCRS): This standard tool was developed originally by **Healey** [(14)]. It consisted of 8 items to assess social cognition among patients with schizophrenia. Each OSCARS item is comprised of a question probing a social cognition construct followed by general example behaviors that reflect

impairment in that domain. Each item is scored on a 7-point Likert-type scale, with higher ratings indicating greater observed impairment. Anchor points were created for four levels (1, 3, 5, 7), and captured the degree of impairment (severity, frequency).

Tool III: Toronto Alexithymia Scale: It was developed originally by **Bagby** [15]. Translation and back translation techniques have been done for the measurement by **El Abiddine** [16]. It is designed to measure difficulty in identifying and describing emotions as measured on 5 points Likert scale. It involved 20 items and is rated as follows; (**1**= strongly disagree; **5**= strongly agree). A total score of the scale ranges from (20 to 100) with higher scores indicating greater impairment/challenges.

Tool IV: Self-evaluation of Negative Symptoms (SNS): It was designed by **Dollfus et al** [17]. It was used for measuring these 5 domains (social withdrawal, diminished emotional range or emotional withdrawal, alogia, avolition, and anhedonia). It included 20-items instrument. Each item was on a 3-point (0 - 2) scale, with anchor points, generally ranging from the symptoms of being strongly disagreed (0) to strongly agree (2) and total scores ranging from 0 (no negative symptoms) to 40 (severe negative symptoms).

Tool V: Emotion Regulation Questionnaire: It was developed by **Gross and John** [18]. A 10-item scale was designed to measure respondents' tendency to regulate their emotions in two ways: (1) Cognitive Reappraisal and (2) Expressive Suppression. Respondents answer each item on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). and total scores ranging from (10 to 70) with higher scores indicating greater emotion regulation.

3. 4. 1. Content Validity:

Researchers examined the content validity of the tool before beginning the data gathering. Tools were translated into Arabic and their content was confirmed. Translation and back translation techniques have been done for the measurement by a panel of three bilingual experts; two professors in psychiatric mental health nursing, and one expert in the Arabic language, to determine the items' relevancy and comprehensiveness, and the appropriate changes were carried out accordingly. In addition, the time required to complete the data sheet was calculated.

3. 4. 2. Reliability:

Reliability was determined by applying Cronbach's alpha coefficient test which revealed homogeneous items in relatively. The internal consistency of the observable social cognition rating scale (OSCRS), Toronto Alexithymia scale, self-evaluation negative symptoms (SNS), and emotion regulation questionnaire was 0.79, 0.81, 0.93, and 0.91

respectively which these values are highly acceptable as well as acceptable levels of concurrent/ criterion validity.

3.5. A Pilot Study:

To ascertain the time required to fill in the tools and to confirm the tools' applicability and completeness, a pilot study was conducted. It was carried out on a sample of six patients with schizophrenia indicating almost 10% of the sample. Those who contributed to the pilot study were excluded from the main study sample since minor modifications were required on the tools.

3.6. Operational Definitions for Psycho-Motivational Training: Is behavioral training designed for patients with schizophrenia to increase motivation by activating or energizing goal-oriented behavior and pushing themselves to achieve goals they set for themselves [(19)]. It enables them to develop skills such as the ability to adapt to social circumstances, express themselves and understand others, communicate while avoiding struggles, and maintain good interpersonal skills, as well as how they experience and express their emotions. It was determined by:

Social skills: Is defined as the ability to adapt to social situations, express themselves and understand others, communicate effectively while avoiding conflicts, and maintain good interpersonal skills, it is important for a harmonious existence in a social group, a possibility for an individual to act effectively in a social environment, and help person to solve problems, can undergo changes more easily, and adapt to the environment [(20)]. It was assessed by Observable Social Cognition Rating Scale (OSCRS) [(14)].

Emotional regulation: Refers to the process by which people influence their emotions, when they have them, and how they experience and express them [(21)]. It was determined by Toronto Alexithymia Scale [(15)] and Emotion Regulation Questionnaire [(18)].

3.7. Procedure: The program construction consisted of 14 sessions from the End of April 2021 to September 2022 and conducted through three phases as following:

I- Planning and assessment phases (the End of April to the end of October 2021): The study took six months for preparing the research plan and the content of the developed Psycho-Motivational Training for patients with schizophrenia (PMTSP) program translation and back translation was done to prepare Arabic version of the program. In addition, the content validity of the program was reviewed by a panel of five experts in psychiatric nursing and psychiatric medicine. Data were collected from all patients with schizophrenia who met the inclusion and exclusion criteria. They were screened by the application of five tools of assessment (Sociodemographic and Medial data sheet,

observable social cognition rating scale (OSCRS), Toronto Alexithymia scale, self-evaluation negative symptoms (SNS) and emotion regulation questionnaire. Data were statically analyzed to detect patients with schizophrenia who showed high scores of lacked social skills and emotional regulation (pretest phase).

II- Implementation Phase (the first of November 2021 to end of April 2022): Patients with schizophrenia who showed high scores of lacked social skills and emotional regulation were (60) patients. They were informed about the "Psycho-Motivational Training patients with schizophrenia (PMTSP)" which aimed to help them acquire effective social skills and emotional regulation strategies. Patients were informed about the content of the program, activities for training, number of sessions and methods of data collection. The program was implemented on 13 sessions, each group twice times per week for one-hour/session. Each skill was performed by using learning techniques that included: Data work sheets, exchanging personal experiences through the group discussion, and program booklet for all participants as illustrations that would be given to them to assure their compliance on attending the program to the end, guiding instructions from the researchers, and finally, homework assignments, all that were conjugated with positive reinforcement, and incentives such as self-care instruments, chocolate, tea break, biscuits and book notes.

The Psycho-Motivational Training Sessions are as follows: **Session (1):** Introduction, and overview of program by the researchers who explain the general purpose, process of evaluation, and responsibilities of the subjects in the program sessions. **Session (2):** Social and emotional perception by helping patients to identify emotional expressions from others and assessing emotional words, determining participants' own emotions. **Session (3):** Responding or sending skills through teaching patients effective use of verbal and nonverbal communication. **Sessions (4 & 5):** Affiliative skills by expressing affection to family and friends and using self-disclosure effectively. **Session (6):** Instrumental role skills, through purchasing food, daily living activities, and working on a job. **Session (7):** Interactional skills, teaching the patients to able starting, maintaining and terminating a conversation. **Sessions (8 & 9):** Emotional expression by expressing participants' basic emotions (fear, rage, disgust, sadness, happiness, surprise) and expressing emotions during

a conversation with another person, and by using role-play technique. **Sessions (10 &11):** Emotion usage, through understanding complex emotions, developing the ability to switch emotions and find happiness and developing emotional inference skills. Session (12): Emotional regulation through helping patients understanding their own feeling and emotions and establishing the resources and strategies necessary for regulating emotions and designing a new future based on past experiences; and **Session (13):** Conclusion and summary. The teaching methods were used through the program sessions role play, group discussion, rehearsal, cognitive exercises, debriefing, and feedback. The evaluation methods were used through the program sessions questionnaires, feedback, re-demonstration, and rehearsal.

III- Evaluation Phase (posttest in May 2022 – follow-up in September 2022): After application of the program, patients who attended the program, they once again completed a post-test sheet which was the same as the pre-test in order to evaluate the effectiveness of the training program on their social skills and emotional regulation. Three months later, after post-test, the follow-up test was achieved using the same tools in order to study the effectiveness of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia through comparison of results with pre-post-tests.

3.8. Administrative Design

3.8. 1. Administrative Approval:

Official permission from the research ethics committee in the Faculty of Nursing at Cairo University was obtained upon the feasibility of the research tools and study. The goals and nature of the study were clarified and then it was potential to conduct the study with the least amount of dissatisfaction.

3.8. 2. Ethical Consideration

Prior to applying for the study, patients were reassured about the confidentiality and anonymity of their obtained information. Patients were educated that their acceptance to participate in the study is voluntary with no harm or risk consequences and they could decline participation in the study, or withdraw from it at any time, and after that acceptance of them to contribute to the study was done through written consent.

4. Statistical Design

A Statistical Package for Social Science (SPSS) version 22 is used for statistical analysis of data, Parametric inferential statistics as descriptive (mean & SD), t-test, (ANOVA) were used to examine the differences and similarities between study variables as well as analysis of variance to examine found correlations), Pearson correlation used for quantitative variables and Linear regression analysis for predictors of study variables. Probability (p-value) of less than 0.05 was considered significant and less than 0.001 was considered as highly significant.

5. Results

Table (1) illustrates that the studied patients with schizophrenia were in an average age(15-25) years old constituted the highest percentage of 35%.The least percentage was 6.7% of patients in the average age of (36-45) years old. The mean age of the studied patients was 31.13 years old with SD± 8.81. Over two-thirds of the sample (63.3%) were male. As regards the education level of studied sample, 45% of the studied sample were having an intermediate education followed by 26.7% were having bachelor's degree. Over two-thirds of sample study were not working. Regarding the marital status of the study sample, half of the sample was single followed in 26.7 by studying sample were married. While the place of residence of the studied sample, over two-thirds (65%) of the studied patients were living in urban areas of Egypt. 60% of the studied patients had insufficient income and lived alone while the remaining of the study sample had sufficient income and lived with their families.

Table (2) reveals that (83.3%) of studied patients had been admitted to psychiatric hospitals. The number of previous admissions most often experienced by studied patients was between (1–3) times. While the onset of schizophrenia in years as reported by the studied patients that more than half of the sample were (55%) were ranged from 1-5 years. The majority of studied patients had family history of mental illness and diagnosed with schizophrenia followed major depressive disorder.

Figure (1) displays the mean score of observable social cognition of the study group was (15.47). While the means scores of post and follow up tests were (45.67 and 45.43) respectively. Pretest mean of Toronto Alexithymia Scale was (84.22). While the mean of post and follow-up tests were (34.55). According to pretest mean score of self-evaluation negative symptoms was (38.38), while the mean score of post and follow-up tests was (7.4). Pretest mean score of emotion regulation was (17.53), while the mean score of post and follow-up tests was (54.5).

Table (3) shows that there were highly statistically significant differences between the observable social cognition, identifying and describing emotions, self-evaluation negative symptoms and emotion regulation, the results of the studied group before and after the program ($p<0.0001$). While highly statistically significant differences between before and follow-up the program of observable social cognition, identifying and describing emotions, self-evaluation negative symptoms and emotion regulation at ($p<0.0001$).

Table (4) demonstrates that a highly positive statistically significant relationship between score of observable social cognition and emotion regulation through post-total stages of the program at ($r = 0.58$, $p<0.0001$). As well as a highly positive statistically significant relationship between total score of observable social cognition and emotion regulation through follow up stages of the program at ($r = 0.51$, $p<0.0001$).

Table (5) illustrates that a highly positive statistically significant relationship between the total score of identifying and describing emotions and age through before, after and follow-up implementation of the program at ($r = 0.18$, $p<0. 01$).

Table (6) reveals that a highly statistically significant impact between the total scores of identifying and describing emotions, self-evaluation negative symptoms, emotion regulation and total score of observable social cognition after implementation of the program at ($p<0.004$, 0.000 and 0.000) respectively.

Table (7) clarifies that a highly significant impact between the total score of observable social cognition scale, the total score of self-evaluation negative symptoms scale and the total score of emotional regulation scale after implementation of the program at ($p<0.000$ and 0.004) respectively.

Table (1): Frequency Distribution of Studied Sample According to Demographic Characteristics (n=60).

Demographic data	No.	%
Age		
15-25	21	35.0
26-35	17	28.3
36-45	4	6.7
46-55	12	20.0
Mean±SD	31.13±8.81	
Gender		
Male	38	63.3
Female	22	36.7
Education		
Illiterate	2	3.3
Read and write	15	25.0
Average	27	45.0
University	16	26.7
Occupation		
Without job	37	61.7
Working	23	38.3
Marital status		
Married	16	26.7
Single	30	50.0
Divorced	13	21.6
Widow	1	1.7
Place of residence		
Rural	21	35.0
Urban	39	65.0
Income level		
Not enough	36	60.0
enough	24	40.0
Do you live with your family		
No	36	60.0
Yes	24	40.0
Number of family members		
2-3	21	35.0
4-5	27	45.0
>5	12	20.0

Table (2): Frequency Distribution of Studied Sample According to Their Medical Data (n=60)

Medical data	No.	%
Have you ever been go to the psychiatric hospital?		
No	10	16.7
yes	50	83.3
Onset of schizophrenia in years		
1-5	33	55.0
6-10	13	21.7
11-15	9	15.0
>15	5	8.3
Number of Pervious admissions		
0	10	16.7
1	13	21.7
2	16	26.7
3	11	18.3
4	6	10.0
5	4	6.7
History of mental illness in family		
No	21	35.0
Yes	39	65.0
Type of psychiatric disorder		
None	21	35.0
Schizophrenia	17	28.3
Bipolar	4	6.7
Major depression	12	20.0
Other	6	10.0

Figure (1): Mean Change Between Pre, Post, and Follow-up in Observable Social Cognition, Identifying & Describing Emotions, Self-Evaluation Negative Symptoms and Emotion Regulation Among Studied Patents (n=60)

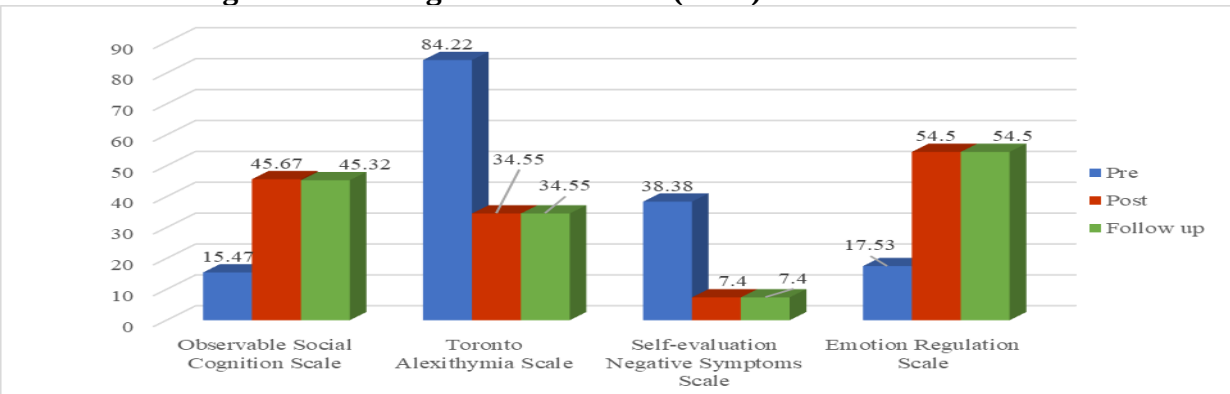

Table (3): Difference Between Total Scores of Observable Social Cognition, Identifying & Describing Emotions, Self-Evaluation Negative Symptoms and Emotion Regulation at Before, After Follow-up of the Program Among Studied Sample (n = 60)

Study Variables	Pre		Post		Follow		t1	p-value	t2	p-value
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**				
Observable social cognition scale	15.47	4.68	45.67	4.99	45.32	4.77	10.81	.0001*	34.6	.0001*
Toronto Alexithymia scale	84.22	5.80	34.55	7.64	34.55	7.64	13.4	.0001*	40.1	.0001*
Self-evaluation negative symptoms scale	38.38	3.08	7.40	4.76	7.40	4.76	42.3	.0001*	42.3	.0001*
Emotion regulation scale	17.53	5.61	54.50	8.16	54.50	8.16	28.9	.0001*	28.9	.0001*

t1= t test between pre and post t2=t test between pre and follow up *significant at p-value<0.05

Table (4): Correlation Matrix Among Study Variables of Pre, Post, and Follow-up Observable Social Cognition, Identifying & Describing Emotions, Self-Evaluation Negative Symptoms and Emotion Regulation Among Studied patents (n = 60)

Variables		Observable Social Cognition Scale		Toronto Alexithymia Scale		Self-evaluation negative symptoms		Emotion Regulation	
		r	p	r	p	r	p	r	p
Observable social cognition scale	Pre	1							
	Post	1							
	Follow-up	1							
Toronto Alexithymia scale	Pre	-0.9	.0001*	1					
	Post	.18	.14	1					
	Follow-up	.16	.19	1					
Self-evaluation negative symptoms scale	Pre	-0.93	.0001*	0.92	.0001*	1			
	Post	-.03	.8	-.23	.07	1			
	Follow-up	-.008	.95	-.23	.07	1			
Emotion regulation scale	Pre	0.93	.0001*	-0.89	.0001*	-0.91	.0001*	1	
	Post	0.58	.0001*	.03	.82	-.17	.18	1	
	Follow-up	0.51	.0001*	.03	.82	-.17	.18	1	

significant at p-value<0.05** * Highly significant at p ≤ 0.01**

Table (5): Correlation Between Observable Social Cognition, Identifying & Describing Emotions, Self-Evaluation Negative Symptoms, Emotion Regulation and Socio-Demographic Characteristics Before, After and Follow-up the Program of Studied Patients (n = 60)

Socio-demographic data	Observable Social Cognition scale		Toronto Alexithymia Scale		Self-evaluation negative symptoms scale		Emotion Regulation scale	
	F	p	F	p	F	p	F	p
Age	R=0.03	.63	R=0.18	0.01*	R=0.09	.19	R=0.04	.52
Gender	.47	.49	.0	.99	.0	.98	.0	.98
Education	.28	.83	.3	.82	.08	.98	.16	.92
Occupation	.006	.93	.07	.79	.07	.78	.07	.78
Marital status	.14	.93	.1	.95	.25	.86	.44	.72
Residence	.18	.66	.84	.77	.02	.88	.3	.58
Income	.02	.87	.96	.32	.14	.7	.02	.88
Living with family	.005	.94	.3	.58	.08	.76	.46	.49

significant at p-value<0.05** * Highly significant at p ≤ 0.01**

Table (6): Linear Regression for Predictors of Observable Social Cognition After Implementation of the Program Among Studied Patients (n = 60)

Independent variables	Regression coefficient	Standard error	R-square	t-value	p-value
Age	.021	.043	0.9	.478	.633
Education	-.160	.503		-.319	.750
Income	.593	.822		.721	.472
Toronto Alexithymia scale	-.112	.038		-2.911	.004*
Self-evaluation negative symptoms scale	-.315	.067		-4.708	.000*
Emotion regulation scale	.378	.046		8.213	.000*

significant at p-value<0.05** * Highly significant at p ≤ 0.01**

Table (7): Linear Regression for Predictors of Emotional Regulation After Implementation of the Program Among Studied Group (n = 60)

Independent variables	Regression coefficient	Standard error	R-square	t-value	p-value
Age	-.052	.060	0.88	-.866	.388
Education	-.346	.704		-.491	.624
Income	-.838	1.151		-.728	.468
Observable social cognition scale	.742	.090		8.213	.000*
Toronto Alexithymia scale	-.116	.054		-2.126	.035
Self-evaluation negative symptoms scale	-.283	.097		-2.913	.004*

significant at p-value<0.05** * Highly significant at p ≤ 0.01**

6. Discussion

Emotion regulation skills and social cognition skills consist of all procedures encountered in the process of perceiving, understanding, and producing appropriate reactions while confronting others. Social cognition skills and emotional expression have been recognized as vital components in the rehabilitation process for persons with schizophrenia, it's strong contributors in social function among individuals suffering from schizophrenia [(22)]. Motivation is the main contributing factor of psychosocial management outcomes, and this is increasingly identified as a significant goal of behavioral interventions. Consequently, the current study was established to study the effectiveness of psycho-motivational training in improving social skills and emotional regulation in patients with schizophrenia.

Considering age as a socio-demographical variable, in this study, the highest percentage of the studied patients were at the age between (15-25) years old constituted the highest percentage of more than a third of patients at the age between (26-35) years old. This indicated no difference because that selected sample aged between (18-55) years old and developmental timing of schizophrenia onset varies widely among individuals. In general, the peak incidence for the diagnosis of schizophrenia is between 20 and 24 years old. This result was matched with **Musket et al.** [(23)] who showed matched finding that, average age of onset for schizophrenia to be between 14.78 and 26.28 years and suggested that symptoms tend to be more severe when they appear early in patient life.

The highest number of studied patients it indicates three-fifths were male, which indicate that the incidence of schizophrenia is higher in men. These results were agreement with

Tesfaw, Kibru and Ayano [24] who found that three-fifths of their studied patients were males.

Regarding the education level, results of the present study revealed that nearly one-half of the sample was having an intermediate education, more than one-quarter was having bachelor's degree. This finding might be indicated that there was effect of signs and symptoms of schizophrenia on studied patients school achievement. On the same line, **Luo, Pang and Zhao** [25] found that education plays an important role in the development of schizophrenia and evidence highlights that not completing primary school and receiving low school marks were associated with a higher risk of schizophrenia.

The place of residence of the studied sample, over two-thirds of the studied patients were living in urban areas of Egypt. This finding indicated that urbanity is now well established to be one of the most influential environmental factors for developing severe mental illnesses. A strong association between exposure to urban environment and the risk of developing schizophrenia due to increased stressors and level of anxiety. The findings were congruent with **Desalegn, Girma and Abdeta** [26] who studied "Quality of life and its association with psychiatric symptoms and socio-demographic characteristics of schizophrenia". They concluded that more than half of patients were from urban areas.

The study result indicated over one-half of the studied patients had insufficient income and lived alone. This may be as a result of effect of psychotic symptoms, of schizophrenia which leads to the inability of patients to continue in a job, as well the stigma of mental illness leads to others abandoning them. The results of current study were matched with **Iseselo, Kajula and Yahya-Malima** [27] who revealed that family caregivers had difficulties in managing psychiatric patients' symptoms and expressed concern that there was no one else who would be able to handle the unpredictable behavior of the patient.

The greatest number of studied patients (83.3%) had been previous admissions at psychiatric hospitals. The number of previous admissions most often experienced by studied patients was between (1- 3) times. This finding might be indicated that most of studied patients' non-compliance of their treatment plan .The results of current study were congruent with **Jung et al.** [28] who illustrated that estimates high numbers of patients' recurrent readmission of psychiatric hospitals due to lack of providing management strategies and policies to support patients and received timely treatment.

The current study results revealed that there were highly statistically significant differences between the observable social cognition, identifying and describing emotions, self-evaluation of negative symptoms, and emotion regulation through before, after, and

follow-up implementation of the program at ($p<0.0001$). Also, a highly statistically significant difference between before and follow-up the program of observable social cognition, identifying and describing emotions, self-evaluation negative symptoms and emotion regulation at ($p<0.0001$). This means that psycho-motivational training had effective role on social skills and emotion regulation through improvement social skills and emotion regulation of patients with schizophrenia. On other hand studied patients experienced reduction in negative symptoms of schizophrenia, this might be indicated that the program had a positive effect for patients with schizophrenia.

The findings of the study were congruent with **Gautham, Gururaj and Varghese** [29] who revealed that a significant improvement at end of social skills training and emotional expression was as normal as expected. In the context, **Larsson, Andersson and Stern** [30] who found that, the intervention which focused on emotion regulation for young adults and improvement in their pilot study could potentially be an effect of repetition in practicing how to identify, label and describe emotions during skills training. On the same line **Granholm et al.** [31] who revealed that the intervention have showed positive management effects on cognition functioning in persons with schizophrenia, quality of life, performance, and severity of negative symptom.

The present study outcome revealed that a positive highly statistically significant relationship between score of observable social cognition and emotion regulation through post-total stages of the program at ($r=0.58$, $p<0.0001$). As well as a positive highly statistically significant relationship between total score of observable social cognition and emotion regulation through follow up stages of the program at ($r=0.51$, $p<0.0001$). This might be linked to the need of patients with schizophrenia for help to improve their social cognition skills, emotion regulation skills and contact with others in suitable ways. These results agreed with **Park et al.** [32] who indicated that a gradual increase in their emotion recognition score represent in improved sensitivity to facial expressions, emotional attention, and emotional clarity and improved the emotion recognition skills regarding negative emotions. Similarly, **Lam et al.** [33] revealed that better application of adaptive emotion regulation approaches may enhance the emotion regulation process in patients with schizophrenia, therefore, informing a new management direction to help patients deal with emotional experiences.

The study result showed a positive statistically significant relationship between the total score of identifying and describing emotions and age through before, after and follow-up implementation of the program at ($r=0.18$, $p<0.01$). This finding might be attributed to

higher alexithymia scores are frequently reported in older adults, which is consistent with the emotional changes related to aging as well as the majority of studied group aged between 20-40 years. The results of current study were matched with **Rady et al.** [34] who studied that multiple comparisons between the six age groups demonstrated a developmental aspect of alexithymia and reveled that Total TAS-20 scores of teenagers and group of people who aged between 20-30 years were relatively higher than those aged between 40-50. As reported by **Gundogmuş, Aydın and Algul** [35] who found that high level of positive correlation between total TAS-20 scores and predictors of their study for instance age, gender, place of residence, monthly income, number of social media.

Findings of the present study indicated that the total scores of identifying and describing emotions, self-evaluation negative symptoms, and emotion regulation had a highly statistically significant impact on total score of observable social cognition after applying of the program at ($p<0.004$, 0.000 and 0.000) respectively. Researchers attempt to communicate, reassure, and motivate participants to encourage them to express their feelings, and instructed them on how to contribute effectively in groups to deal with their daily problems and negative symptoms to improve their social and emotional regulation skills. Findings of the present study were concurrent with **Abram et al.** [36] who showed that the effectiveness of psycho-motivational training for patients with schizophrenia on their individual differences in social reward sensitivity predict how people frame their social goals, such that people who are higher in this trait are more likely to adopt approach-oriented goals (e.g., make a new friend, spend quality time with their spouse). Likewise, they added that social reward sensitivity is also hypothesized to impact how people define achievement in relationships. People with greater social reward sensitivity have more positive expectancies, leading them to perform in a way that produces more positive responses from others.

This outcome was corresponding with that of a research done by **Obeid et al** [37] who found that Alexithymia appears to be influenced by many factors, including stress, anxiety and emotional exhaustion and application stress management program had effect decrease level of Alexithymia and improve emotional expression of their studied group. Also, **Lu et al.** [38] who found that significant effects from combinations of psychoeducation, cognitive remediation training, and social skills training on the psychosocial functioning of patients with schizophrenia, compared with all control conditions.

Findings of the present study stated that a highly statistically significant impact of the total score of observable social cognition, the total score of self-evaluation negative symptoms

and the total score of emotional regulation after application of the program at ($p<0.000$ and 0.004) respectively. This might mean that the positive effect of implementation of the program on studied patients on improving their social skills and emotional regulation skills. Findings of the present study were concurrent with **Favrod et al.** [7] who revealed that the positive emotions program for patients with schizophrenia is an emotion regulation approach training that plans to increase the frequency, duration, and intensity of positive emotional experiences and to improve positive functioning attitudes. These approaches include remembering and anticipating enjoyment, expressing emotions through nonverbal activities, focusing controlled attention to positive experiences once they happen, and sharing positive experiences with others. The previous findings are congruent with those of **Lawlor et al.** [39] who found that the studied patients stated high satisfaction, involving improved emotional awareness, acceptance, understanding of self-efficacy in relation to managing feelings, improving confidence that they can modify unwanted or persistent emotions, and achieved insights into past experiences of emotional distress involving their mental health problems.

7. Conclusion

The findings revealed that psycho-motivational training program for patients with schizophrenia had a great positive effect on improving social skills, and emotional recognition. As well as the training program was effective in improving negative symptoms among patients with schizophrenia, which confirms the hypothesis of the study.

8. Recommendations

Based on the study findings, the following recommendations are formulated:

- The establishment of advocacy campaigns to aware caregivers of the importance of rehabilitation phase of patients with schizophrenia to empower them with social skills and emotional regulation skills.
- The need for increment-empowered psychiatric mental health nurses and other team members with psychoeducation and training programs to help patients acquire social skills and control inappropriate emotions for engaging in adaptive relationships with others.
- Applying psycho-motivational training for patients with schizophrenia to improve their social skills, and emotional regulation skills and reduce negative symptoms.
- Widening the scope of this study by carrying it in a longer time and a larger sample size. and on different psychiatric diagnoses is essential

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الملخص العربي

"أثر التدريب التحفيزي النفسي في تحسين المهارات الاجتماعية والتنظيم العاطفي لمرضى الفصام"

المقدمة: يعد مرض الفصام من أكثر الاضطرابات العقلية الخطيرة التي تصيب الفرد، ويؤثر على وظائفه العقلية ويسبب خلل على مستوى التفكير والوجدان وأحيانا الإدراك وبالتالي يظهر تدهور على المستوى السلوكي والاجتماعي مما يؤدى إلى عرقلة وتغيير مجرى حياته من جميع الجوانب والمجالات التي يشغلها. كما قد يبعده عن أصدقائه وأهله ويدفعه إلى العزلة والانطواء على الذات ليعيش في واقع خيالي غير حقيقي وبالتالي يصبح في معزل عن العالم الحقيقي. واهمية هذا البحث تتمركز في دعم وتعزيز مرضى الفصام بالمهارات الاجتماعية ومهارات التنظيم العاطفي وله أثر جيد على الصحة الجسدية والعقلية والاجتماعية للمصابين بالفصام وتأهليهم للعودة لحياتهم الطبيعية قبل المرض ومنع الآثار السيئة للمرض سواء على المستوى البدني والنفسي والمهني.

الهدف من الدراسة: تهدف هذه الدراسة إلي تقييم أثر التدريب التحفيزي النفسي في تحسين المهارات الاجتماعية والتنظيم العاطفي لمرضى الفصام. تحقق ذلك من خلال الأهداف التالية- :

- تقييم مستويات المهارات الاجتماعية والتنظيم العاطفي لدى مرضى الفصام.
- تصميم برنامج تدريب تحفيزي نفسي لتحسين المهارات الاجتماعية والتنظيم العاطفي لدى مرضى الفصام.
- تنفيذ برنامج تدريب تحفيزي نفسي لتحسين المهارات الاجتماعية والتنظيم العاطفي لدى مرضى الفصام.
- تقييم فعالية التدريب التحفيزي النفسي لتحسين المهارات الاجتماعية والتنظيم العاطفي لدى مرضى الفصام.

فرضية البحث: يُظهر مرضى الفصام الذين تعرضوا لبرنامج التدريب التحفيزي النفسي درجات أعلى في مهارات الاجتماعية و التنظيم العاطفي بعد تنفيذ البرنامج أكثر من ذي قبل. من المتوقع أن يحدث تحسن للأعراض السلبية لدي مرضى الفصام الذين ساهموا في برنامج التدريب التحفيزي النفسي بعد تنفيذ البرنامج أكثر من ذي قبل.

نوع البحث: استخدمت هذه الدراسة تصميمًا شبه تجريبي (قبل/ بعد اختبار مجموعة واحدة).

منهجية البحث: شارك في هذه الدراسة عينة قصدية قوامها (60) مريض بالفصام. تم اجراء هذا البحث الأقسام الداخلية بمستشفى القصر العيني للطب النفسي والادمان. تم تطبيق البرنامج من خلال ١٤ جلسة فى الفترة من نهاية ابريل 2021 حتى نهاية سبتمبر 2022. كما تم استخدام خمس ادوات لجمع البينات، استبيان البيانات الاجتماعية والديموغرافية والطبية، مقياس تقييم الإدراك الاجتماعي الملحوظ، مقياس تورونتو أليكسيثيميا، استبيان موجز عن الأعراض السلبية و مقياس تنظيم العاطفة.

النتائج: أظهرت نتائج الدراسة وجود فروق ذات دلالة إحصائية بين نتائج الإدراك الاجتماعي الملحوظ، وتحديد ووصف العواطف، والتقييم الذاتي للأعراض السلبية، وتنظيم العواطف قبل وبعد و اثناء متابعة البرنامج.

الخلاصة :كشفت النتائج أن التدريب التحفيزي النفسي لمرضى الفصام كان له تأثير إيجابي كبير على تحسين المهارات الاجتماعية، و مهارات التنظيم العاطفي .وكذلك كان البرنامج التدريبي فعالاً في تحسين الأعراض السلبية لدى مرضى الفصام. مما يؤكد فرضية الدراسة.

التوصيات: أوصت النتائج فإن الحاجة إلى زيادة تمكين ممرضات الصحة النفسية وأعضاء الفريق الآخرين من خلال برامج التثقيف النفسي والتدريب لمساعدة المرضى على اكتساب المهارات الاجتماعية والسيطرة على العواطف غير الملائمة للانخراط في علاقات تكيفية مع الآخرين في بيئة المستشفيات الحديثة.

الكلمات المفتاحية: مهارات تنظيم العاطفة، التحفيز النفسي، الفصام، المهارات الاجتماعية، التدريب.