

Effect of Psycho educational Program on Positive and Negative Symptoms among Schizophrenic Patients

Ahmed. S. Mohamed¹, Nadia E. sayied², Amany A. Mohamed³, Safaa Mohammed Zaki⁴

1. Assistant lecturer in Psychiatric Mental Health Nursing, Faculty of Nursing-Minia University, Egypt.
2. Professor of Psychiatric and Mental Health Nursing, Faculty of Nursing-Assiut University, Egypt.
3. Assistant Professor of Psychiatric and Mental Health Nursing, Faculty of Nursing - Minia University, Egypt.
4. Assistant Professor of Psychiatric and Mental Health Nursing, Faculty of Nursing - Minia University, Egypt.

ABSTRACT

Background: A severe mental condition that alters perceptions, thinking, and behavior is schizophrenia. Although they might vary from person to person, the symptoms often fall into three main categories: 1st positive, 2nd negative, as well as 3rd cognitive. **Aim:** The study aimed to evaluate the effect of psycho-educational program on positive and negative symptoms among schizophrenic patients. **Study design:** A quasi-experimental research design was used to achieve the aim of the study. **Setting:** This study had been conducted at Minia Psychiatric Health and Addiction Treatment Hospital. **Subject:** A purposive sample of 40 patients diagnosed with schizophrenia had been included in the study as a study group and 40 patients as control group. **Tools:** Two tools were utilized in this study; the **first tool** is an interviewing questionnaire to collect socio-demographic and clinical data questionnaire and the **second tool** is Positive and Negative Syndrome Scale (PANSS): is a rating scale used to assess the positive and negative symptoms of schizophrenia. **Results:** Less than fifth of studied patients had low positive and negative syndrome comparing to all of them at post-test and the majority at follow up. **Conclusion:** There was a significant improvement in the studied patient positive and negative symptoms in post psycho-educational program comparing to pre-psycho-educational. **Recommendations:** Continuous provision of psycho-educational program should be developed in all psychiatric departments and social contexts to improve learning skills, maintaining the improvement in their social functioning among patients with schizophrenia and decrease positive and negative symptoms.

Keywords: Positive Symptoms, Negative Symptoms, Psycho-educational, Schizophrenic Patients

Introduction

According to psychologists, humans are biopsychosocial units that are always changing and adapting, and psychological diseases have the power to upset this adaptive condition. Schizophrenia is a disruptive psychotic condition that affects about one percent of the population. One of the most crippling mental illnesses, it has a significant negative impact on social, occupational, and personal aspects of life (Abou-Elmaaty, et al., 2021). Schizophrenia is the common prevalent chronic psychosis in Egypt, accounting for most inpatients in mental hospitals. An estimated twenty-two percent of Egypt's population, or 056 thousand people, are thought to be affected by schizophrenia. The both main categories of symptoms associated with schizophrenia, positive or hard "symptoms", as hallucinations, delusions, and speech, incredibly disordered thinking, and behavior, also the negative "symptoms", such as flat impact, decreased of volition, as well as social withdrawal or discomfort (Ebrahim, et al., 2021).

Although antipsychotic treatments have advanced significantly, traditional therapies, which primarily involve the administration of psychotropic medications, are still effective in controlling psychiatric symptoms. However, they do not provide the conditions required to sustain long-term control of negative symptoms. Schizophrenia is a treatable disorder. Although positive feelings can be controlled with medication, after positive sensations have subsided, unpleasant symptoms often continue. The long-term recurrence of these detrimental symptoms poses a significant obstacle to the patient's ability to heal and function better in everyday life (Essam et al., 2022).

A disruptive and stressful condition, schizophrenia is thought to impair not only the patient's lifestyle and

socioeconomic standing but the social, physical, psychological, as well as financial elements of the family personnel. Compared to other physical illnesses, schizophrenia elicits significantly varied reactions from society. It is evident that those with mental illness are not entitled to the same traditions of tenderness, love, compassion, and support as those with bodily illnesses (Elsayed, et al., 2021).

Although individual symptoms of schizophrenia might vary, they often fall into three main categories: 1st positive, 2nd negative, and the 3rd cognitive. Positive symptoms of schizophrenia are distinguished from negative ones based on whether there is an excess of typical experiences, such as delusions or hallucinations. Overly dramatic ideas, feelings, or behaviors that indicate the individual is unable to differentiate between what is genuine as well as what isn't are considered positive signs. "Positive" refers to the existence of symptoms rather than their absence. Although the negative effects manifest as a reduction in experiences or expression (Durna, et al., 2019).

Blunted affect, full loss of volitional drive, lack of desire and enjoyment from activities, and absence of feelings are all results of negative symptoms. As a result, the patients become numb to everything around them and even to their own physical well-being. This leads to poor hygiene, a diminished sense of pain, and in severe situations, the inability for the patients to feed themselves. (Krynicky, et al., 2018). Each person's road to recovery from schizophrenia is different and takes time. Over time, the symptoms often get better and becoming easier to manage, while they don't always go away. Treatment for schizophrenia that is recovery-oriented encourages optimism, empowerment, and hope. A mix of medicine and psychological supports, including

psychotherapy, education, and peer support, may often effectively treat the disorder (**Janah & Hargiana, 2021**).

The psycho-educational intervention is a gathering of systematic interventions built on a supportive as well as cognitive therapy behavior approach with an emphasize on the requirements of patients as well as their families. The intervention's main goals are to improve communication, help patients and families learn more about their illness, and help them learn how to solve problems. Since psychiatric nurses lead creativity groups where patients with schizophrenia can experience numerous advantages, nurses must play a significant part in the implementation of psych-education therapy in these patients. Psycho-education incorporates emotional components and helps patients and their families manage the symptoms of the condition (**Ameel, et al., 2019**).

The compassionate side of nursing cares for patients and their families as well, and nurses play a significant role in helping people with schizophrenia live better lives. Nurses identify aberrant behavior and assist families in managing treatment side effects so they may physically and mentally adjust to the challenges in their lives. Therefore, the capacity of nurses to provide patients and their families with the necessary support, knowledge, and adjustment may have an effect on the patients' and families' quality of life (**Fitryasari, et al., 2018**).

Significance of the Study

Schizophrenia is the 5th reason of disability for males as well as ranks the 6th for females. The global prevalence of schizophrenia is not composed across globally, as well as unlike the incidence that seems to be lesser in developing countries than the developed countries. Schizophrenia was estimated at 4.6 per 1000 (0.46 %,) worldwide depend on published epidemiological researches as well as the prevalence lifetime (**Kane, et al. 2020**). Moreover, schizophrenia is the most prevalent psychiatric disorder in Egypt which affects 15 patients for every 10000 population (**Saied, 2020**).

Schizophrenia's positive and negative symptom intensity has been repeatedly associated with inferior functional outcomes, including reduced involvement in activities, academic and professional performance, home integration, social functioning, and household integration. In the same point, a study performed by (**Yilmaz et. al., 2020**) mentioned that schizophrenic patients who received psycho educational treatment have significant improvement in their positive and negative symptoms.

Thus, applying psycho-educational program on positive as well as negative symptoms among schizophrenic patients is a practical strategy to increase patient's awareness of their disease and reduce the level of positive as well as negative symptoms.

Aim of the study

The study aimed to evaluate the effect of psycho educational program on positive and negative symptoms of schizophrenic patients.

Research hypotheses:

H1- Positive and negative symptoms will be improved after applying psycho educational program in study group more than control group.

Subjects and Method

Research design

The study employed a quasi-experimental research approach in order to accomplish its goal.

Setting

This study was performed at the Mental Health and Addiction A Ministry of Health associated treatment hospital located in New Minia City. The hospital is spread across two floors; the 1st floor houses the female inpatient unit, pharmacy, as well as outpatient clinics. The administration office, the drug rehab center, and the two male inpatient psychiatric units are located on the 2nd floor. This hospital can accommodate 53 beds of each gender and serves the whole governorate of Minia.

Subjects

a convenient sample of 80 male as well as female hospitalized psychiatric patients were included in the study divided to 40 patients as a study group and 40 patients as control group according to statistical equation (**Machin, D., et al., 2011**) which sample size ranged between ten to thirty percent from total population and the total number of patients admitted to this hospital were 300 patients in 2020.

Data collection tools

Tool 1: Interviewing questionnaire:

This questionnaire was designed by the researcher to evaluate socio-demographic as well as clinical traits of participants as: Age, marital status, residence, gender, level of educational, occupation, and duration of illness also the mode of admission.

Tool 2: Positive and Negative Syndrome Scale (PANSS):

The PANSS (**Kay et al, 1987**) is a rating scale utilized to evaluate the positive and negative symptoms of schizophrenia. Also, it composed of thirty items. A scale scoring system was modified by the researcher from one to seven to be from one to four. Every item is rated on a scale from score 1 (not present) to score 4 (severe). The sum of the thirty items is described as the PANSS total score and ranked from 30: 120. The PANSS positive symptom (items 1 to 7), PANSS negative symptom (items 8 to 14) contain seven items of the 30 PANSS items and the scores range from 7 to 28 and PANSS general psychiatric disturbances (items 15-30) includes 16 of 30 PANSS items and the scores ranges from 16 to 64.

Ethical Consideration:

The "Research Ethical Committee" of the Minia University Faculty of Nursing gave a formal first agreement. Since the study complied with standard clinical ethical guidelines, there is no risk to the patients being studied. Oral agreement was obtained from the participants being studied, and written consent was took from the hospital's patient rights committee. Privacy was also maintained during data collection. By classifying the data and granting the patients under research the freedom to decline participation in the study without providing a reason, privacy and confidentiality were ensured. The director of Cairo City's General Loyalty for Mental Health and Addiction Treatment officially granted approval for the study's execution.

Validity of Tools:

The tools of this study were examined for content validity by 5 members' experts in the field of psychiatric and

mental health nursing from both Minia and Assiut University as well as necessary modifications was done. Tools translated into Arabic by the researcher also reviewed by experts to be clearer and more cultural relevant.

Reliability of Tools:

The internal consistency of the scale was gathered utilizing Cronbach's alpha coefficients test which was 0.937 for positive and negative scale that means excellent reliability.

Pilot Study:

A pilot study (ten percent) of the total patients was eight patients under examination was carried out to assess the feasibility and dependability of the instruments utilized in the study, as well as to evaluate the research methodology. It was also helpful in determining how much time would be needed to fill the tools. Since the study tools had not been altered, they were included in the investigation.

The educational program

The psycho-educational program was created by the researcher depended on the pertinent literatures and the available resources.

General objective of the program:

The overall objective of the developed psycho-educational program was to increase the studied schizophrenic patients' awareness of their mental illness as well as decrease positive as well as negative symptoms among the same studied schizophrenic patients.

The program's specific objectives are as follows:

Post execution of the psycho-educational program the patients would be able to:

- Gain information about schizophrenia,
- Enhance patient awareness about positive and negative symptoms and teach them skills to control it.
- Evaluate the effect of the psycho-educational program on patients' positive as well as negative symptoms.

The educational program:

This program was execution via the next phases:

1. Assessment phase (early phase):

This phase aimed to evaluate positive, negative symptoms among schizophrenic patients divided to two groups studied and controlled group; every patient was meet to gather the essential data. Depend on the phase of assessment, the program as well as media was designed by the researcher in the form of teaching methods such as lectures and discussion which reviewed by supervisors. Media that was used include visual materials such as posters, personal laptop, videos and booklets.

2. Planning (preparatory phase):

This phase included construction of teaching educational program time which included 6 sessions which started at 1pm and ends at 2.5 pm three times weekly days were as the following Sunday, Tuesday and Thursday. Application of the intended educational program takes approximately 6 months. Teaching sessions was conducted in the hall of each department in the second floor for men and hall of female department in this hospital. A different of

teaching methods and media were involved in this program as lectures, brief notes, modeling, group discussion participating the patients' experiences, videos, pictures, booklets as well as role-playing.

3. Implementation of the program:

The researcher classified patients into 8 sub-groups everyone involved 5 patients, to enhance communication and interaction the same program sessions were execution for each subgroup of them. Via the beginning of every session, the researcher greeted the patients as well as asked patients' feedback about the previous session then provided them with a discussion related to the planned activities for the next one.

Throughout the psycho educational program, methods of instruction, as group discussion, modeling and role-playing. The researcher used different methods of material and reinforcement as bringing food, fruits, nuts, gum, sweets and other things. Each session concluded with the researcher summarizing the discussion, asking the patients if they had any questions, confirming the schedule of the following appointment, and assigning homework for that session. In order to determine how well the patients understood the exercises that were taught and to go over the session's material once more, the researcher also created a recap of the prior session. Following the completion of the program's execution with each group, the second assessment, or post-test, was conducted. From March 2022 to the end of August 2022, the researcher gathered data and ran the software.

The program content was as following:

Session 1: Introduction about session's purpose, time, place, content and its benefits for the patients.

Session 2: Social skills training such as starting a conversation, asking other patients' questions, listening to other patients, giving compliments, addressing criticism, asking patients to do something with you, being courteous—keeping in mind to say "please" and "thank you". continue along the program sessions.

Session 3: Physical exercises include deep breathing exercises (relaxation training) and warm-up exercises for 10 minutes to decrease negative symptoms.

Session 4: Teach the patient "Distract yourself strategy" to decrease hallucination and delusion.

Session 5: Teach the patient "Perform a Reality Check" to decrease hallucination and delusion.

Session 6: Complete training on "Perform a Reality Check" technique skills to decrease hallucination and delusion

Program evaluation:

Evaluation of the controlled and studied patients' positive and negative symptoms was done three times using the same study tools; 1st, pre the program execution (pretest), 2nd while using the positive and negative symptoms scale, immediately one week after of the execution of the program (posttest) to evaluate the knowledge as well as thirdly, one and half month later post program execution (follow up test) for testing the effectiveness of the executed program.

Data collection procedure

- A reviewing of the relevant literature was done using the internet, obtainable books and articles, to understand the studied problem and how to apply the program.

- The study tools were translated into the Arabic version by the researcher and reviewed by the dissertation supervisors. The jury committee examined and approved the tools that was composed of 5 psychiatric mental health nursing experts; (Minia as well as Assuit Universities, faculty of nursing, Psychiatric and Mental Health Nursing department) to examine the tools for clarity, comprehensiveness, relevance, understanding, applicability in order to accomplish the study aim , and finally, necessary modifications were done.
- The director of the hospital granted formal approval for the study's execution.
- The director of Cairo City's General Loyalty for Mental Health and Addiction Treatment granted formal approval for the study's execution.
- The hospital's patient rights committee as well as the studied patients themselves provided oral agreement.
- The researcher promised anonymity and confidentiality while outlining the goal of the study in direct, personal conversation with the patients under study in order to get their consent and voluntary participation.
- The study sample was met by the researcher three times a day (on Sunday, Tuesday, and Thursday) from 1 to 2.5 p.m. after they had finished supper and taken their prescriptions. Over the course of 6 months, from the starting of March 2022 to the end of August 2022, the researcher gathered data and

implemented the program. To do this, they divided the patients under study into eight subgroups, each of which had five patients.

- Number of sessions were seven sessions, three sessions each week; the duration of every session was about one and half hours which was conducted in the hall of each department in the first and second floor of the hospital.
- Pre/post and follow-up test (after one and half months) assessment tools were used to gather the data by the researcher after implementing the psycho-educational program.

Data statistical analysis

The data were gathered, coded, categorized, presented as well as investigated using the (SPSS 23). Descriptive statistics were employed to display the data for the qualitative variables, using frequencies and percentages, and means as well as standard deviations for the quantitative variables. Also, the Chi-square was utilized in tests of the relationships.

The P-value, or statistical significance level, was:

- P-value less 0.05 showed “significant differences”.
- P-value less 0.001 showed “highly significant differences”.
- P-value less 0.0001 showed “very high significant differences”.
- P-value more 0.05 showed “no significant differences”.

RESULTS

Table (1): Frequency distribution of socio-demographic data among schizophrenic patients (no =40).

Characteristics	Control (No.=40)		Study (No.=40)	
	no.	%	no.	%
Age				
• <20:29	16	40	19	47.5
• 30:40	15	37.5	9	22.5
• >40	9	22.5	12	30
Mean ± SD	31.5±9.33		32.92±10.4	
Gender				
• Male	34	85	33	82.5
• Female	6	15	7	17.5
Marital status				
• Single	23	57.5	25	62.5
• Married	16	40	9	22.5
• Divorce	1	2.5	5	12.5
• Widowed	0	0	1	2.5
Educational level				
• Illiterate	10	25	11	27.5
• Primary	7	17.5	4	10
• Preparatory	3	7.5	7	17.5
• Secondary	18	45	12	30
• University	2	5	4	10
• Post university	0	0	2	5
Occupation				
• Don't work	11	27.5	12	30
• Work	29	72.5	28	70
Residence				
• Rural	37	92.5	37	92.5
• Urban	3	7.5	3	7.5

Table (1): shows that (40% & 47.5%) of the controlled and studied patient were aged between <20:29 years, with mean age (31.5±9.33) and (32.92±10.41) years respectively. As regards gender for both studied and controlled patients, the highest percentage among controlled and studied patients were male constituted (85% & 82.5%) respectively. In relation to marital status (57.5% & 62.5%) of them were single for both controlled and studied patients, respectively. In this respect, the same table illustrates that (45% & 30%) of the controlled and studied patients have secondary education respectively, while (72.5% & 70%) of them were working respectively.

Table (2): Frequency distribution of clinical data among schizophrenic patients (no =40).

Clinical data	Control (no.=40)		Study (no.=40)	
	no.	%	no.	%
Duration of diseases				
• <1	32	80	26	65
• 1-3	1	2.5	4	10
• >3	7	17.5	10	25
Previous hospitalization				
• Yes	20	50	24	60
• No	20	50	16	40
Frequency				
• 1 once	13	65	9	37.5
• 2 twice	2	10	7	29.2
• >2	5	25	8	33.3

Table (2) illustrates that the highest percent (80% & 65%) of the controlled and studied patients, have the disease for less than one year respectively, while (50% & 60%) of them were previously admitted to the hospital. In addition, (65% & 37.5%) of them were admitted to the hospital one time, respectively.

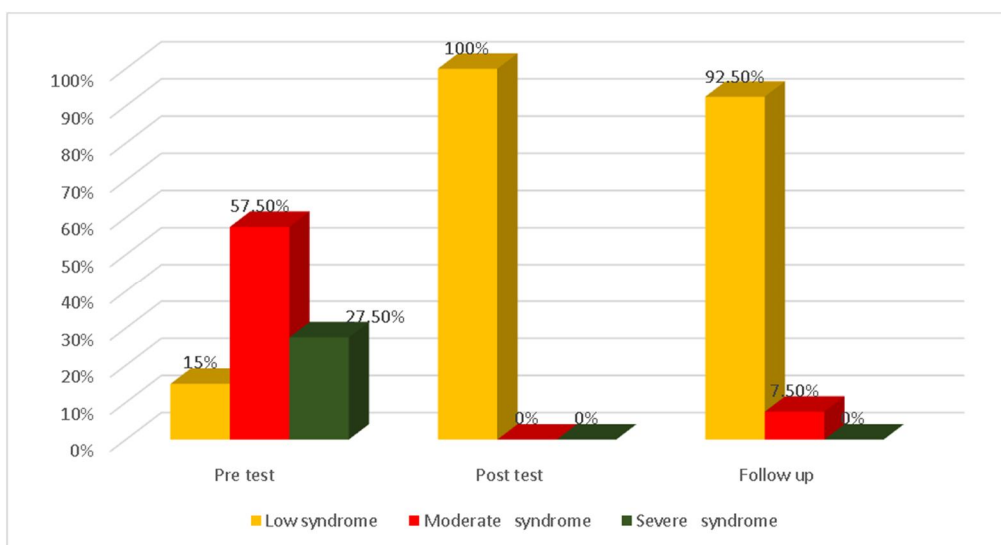


Figure (1) frequency distribution of total positive and negative syndrome among schizophrenic patient for studied patients. (no.40)

Figure (1) illustrates that at pre-test, 15% of studied patients have low positive and negative syndrome comparing to 100 % at post-test and 92.5% at follow up

Table (3): Mean score of positive and negative syndrome among schizophrenic patients (no.40)

Items	Pre-test		Post-test		Follow-Up	
	Control (no.=40)	Study (no.=40)	Control (no.=40)	Study (no.=40)	Control (no.=40)	Study (no.=40)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Positive symptoms	19.4± 7.34	20.17± 7.23	11.8± 4.37	8.27± 1.58	9.85± .44	10.95± .60
T test (p -value)	.542 (.591 NS)		4.8 (0.001**)		1.7 (.089 NS)	
Negative symptoms	16.77 ±5.31	18.65± 5.47	15.5± 5.12	9.5± 2.72	15.1± .799	12.37± .77
T test (p -value)	1.57 (.123 NS)		6.37 (0.001**)		2.25 (.03*)	
General psychiatric disturbances	37.6± 11.64	38.3± 9.95	28.6± 9.32	17.72± 1.61	25.07± 1.2	21.85± .67
T test (p -value)	.290 (.773 NS)		7.14 (0.001**)		2.16 (.03 NS)	
Total positive and negative syndrome	74.07± 20.9	77.2± 18.2	55.97± 14.71	35.57± 4.33	50.07± 1.9	45.17± 1.5
T test (p -value)	.746 (.460 NS)		8.39 (0.001**)		1.85 (.072NS)	

N s: Not significant

Table (3): shows that at pre-test, the total mean score of positive and negative syndrome of the studied patients was (77.2± 18.2) in comparing to the controlled was (74.07± 20.9) with no statistical significance differences between the studied and controlled patients (p- value = 0.460). Concerning post-test, the same table clarifies that, the total mean score of positive and negative syndrome of the studied patients was (35.57± 4.33), in comparing to controlled group was (55.97± 14.71), with highly statistical significance differences between the studied and controlled patients (p- value ≤ 0.001). At the follow up, the same table illustrates that, the total mean score of positive and negative syndrome of the studied patients was (45.17± 1.5), in comparing to the controlled patients was (50.07± 1.9), with no statistical significance differences between the studied and controlled patients (p- value ≥ 0.072).

Table (4) Relation between socio-demographic and clinical data regarding positive and negative syndrome, for controlled patients (no.40)

Items	Control group					
	Pre-test	Anova or (t-test) (p value)	Post-test	Anova or (t-test) (p value)	Follow up	Anova or (t-test) (p value)
	Mean ±SD		Mean ±SD		Mean ±SD	
Age						
<20:29	79.1±21.1	.911 (.4NS)	59.4±16.4	.756 (.477 NS)	52.6±14.3	.595 (.55NS)
30:40	72.1±20.3		54.1±13.4		48.1±9.94	
>40	67.1±22.4		52.5±13.7		49.0±11.8	
Gender						
Male	73.8±21.4	.178 (.8 NS)	56.4±15.2	.442 (.661 NS)	50.3±12.5	.306 (.76 NS)
Female	75.5±20.2		53.5±12.7		48.6±6.60	
Marital statuses						
Single	72.8±21.1	.442 (.6 NS)	55.7±15.5	.454 (.639 NS)	49.9±13.5	.338 (.71 NS)
Married	74.6±21.4		55.5±13.8		49.6±10.1	
Divorce	93.0±0		70.0±0		60.0±0	
Educational level						
Illiterate	84.4±15.3	2.41 (.06 NS)	59.8±10.2	1.59 (.196 NS)	52.1±7.75	1.29 (.29 NS)
Primary	82.8±19.9		63.5±20.4		56.3±17.3	
Preparatory	78.3±4.50		60.6±13.5		54.3±15.1	
Secondary	66.8±21.8		51.5±13.3		46.8±10.7	
University	50.5±27.5		43.0±16.9		40.5±13.4	
Post university	-		-		-	
Occupation						
Don't work	70.2±23.5	1.19 (.3 NS)	54.1±15.5	1.15 (.350 NS)	48.8±12.5	1.22 (.31 NS)
Work	75.6±18.3		57.4±14.1		51.4±11.3	
Residence						
Rural	74.3±21.6	.233 (.8 NS 7)	56.5±15.2	.809 (.423 NS)	50.6±12.3	.110 (.27 NS)
Urban	71.3±10.6		49.3±9.60		42.6±4.72	
Duration of diseases						
<1	76.9±20.1	3.11 (.05 NS)	57.3±14.5	1.76 (.186 NS)	50.7±12.0	1.31 (.28 NS)
1-3	31.0±0		31.0±0		31.0±0	
>3	67.0±18.9		53.3±13.7		49.8±11.8	
Previous hospitalization						
Yes	73.2±22.6	.068 (.79 NS)	55.6±16.5	.025 (.874 NS)	49.6±13.9	.048 (.82 NS)
No	74.9±19.7		56.4±13.4		50.5±10.2	
Frequency of admission						
Once	71.9±25.5	243 (.866 NS)	54.5±18.8	.095 (.963 NS)	48.5±15.8	.221 (.88 NS)
Twice	85.0±9.89		55.0±4.24		47.5±7.07	
> 2 times	71.8±19.4		58.6±14.7		53.4±11.9	

(p value more 0.05) No significant difference *p value less or equal 0.0= Significant difference **(p value less or equal 0.005) =highly significant difference

Table (4) shows that there was no significant relation between socio-demographic data, positive and negative syndrome for controlled patients. There was no statistical significance relation between controlled patients' clinical data, positive and negative syndrome at pre, post and the follow up (p-value >0.05).

Table (5) Relation between socio-demographic and clinical data regarding positive and negative syndrome, for studied patients (no.40)

Items	Study group					
	Pre-test	Anova or (t-test) (p value)	Post-test	Anova or (t-test) (p value)	Follow up	Anova or (t-test) (p value)
	Mean ±SD		Mean ±SD		Mean ±SD	
Age						
<20:29	78.5±16.7	.100 (.905 NS)	36.0±3.51	.681 (.512 NS)	45.3±8.08	.006 (.994 NS)
30:40	75.8±12.0		36.2±6.28		45.0±12.2	
>40	76.1±25.5		34.2±3.58		45.0±11.6	
Gender						
Male	77.6±18.1	.348 (.730 NS)	36.2±4.44	1.99 (.05 NS)	46.3±10.1	1.58 (.12 NS)
Female	76.0±19.7		32.7±2.21		39.8±7.71	
Marital statuses						
Single	77.5±19.3	.498 (.686 NS)	36.2±5.12	.445 (.72 NS)	45.5±10.7	.559 (.64 NS)
Married	72.6±18.7		34.5±2.87		42.5±8.73	
Divorce	80.2±12.6		35.0±1.58		49.2±9.01	
Widow	94.0±0		33.0±0		40.0±0	
Educational level						
Illiterate	77.5±16.3	.568 (.72 NS)	36.6±5.95	.611 (.69 NS)	45.4±12.2	.885 (.50 NS)
Primary	75.7±26.9		35.5±3.69		45.7±10.3	
Preparatory	79.5±15.7		34.8±1.57		41.5±4.31	
Secondary	80.4±20.1		36.3±4.65		48.8±10.5	
University	73.7±10.9		33.7±2.21		44.0±8.75	
Post university	57.5±27.5		32.0±2.82		35.5±6.36	
Occupation						
Don't work	77.7±18.2	1.23 (.31 NS)	36.2±5.87	.494 (.74 NS)	46.4±11.8	.884 (.48 NS)
Work	83.7±7.07		35.5±2.12		45.5±2.82	

Items	Study group					
	Pre-test	Anova or (t-test) (p value)	Post-test	Anova or (t-test) (p value)	Follow up	Anova or (t-test) (p value)
	Mean ±SD		Mean ±SD		Mean ±SD	
Residence						
Rural	77.1±18.9	.143 (.88 NS)	35.7±4.43	.930 (.35 NS)	45.4±10.1	.569 (.57 NS)
Urban	78.6±3.78		33.3±2.08		42.0±7.21	
Duration of diseases						
<1	79.5±19.6	.646 (.53 NS)	35.7±3.64	.078 (.92 NS)	45.3±9.42	.324 (.72 NS)
1-3	74.5±14.8		5.0±0.816		48.2±8.84	
>3	72.1±15.5		35.3±6.61		43.5±12.2	
Previous hospitalization						
Yes	78.6±17.7	.383 (.54 NS)	34.7±2.90	2.24 (.14 NS)	42.9±7.74	3.25 (.07 NS)
No	75.0±19.2		36.8±5.75		48.5±12.1	
Frequency of admission						
Once	74.6±13.1	.175 (.91 NS)	60.3±8.59	.175 (.91 NS)	56.4±8.66	.175 (.91 NS)
Twice	82.0±8.84		60.5±2.12		58.5±7.07	
> 2 times	76.2±12.8		64.6±8.20		58.2±5.63	

(p value more 0.05) No significant difference *p value less or equal 0.0= Significant difference **(p value less or equal 0.005) =highly significant difference

Table (5) shows that there is no significant relation between socio-demographic data, positive and negative syndrome for studied patients. As regard age, it was observed that the highest mean score of positive and negative symptoms was among patients in age group (<20:29) (78.5±16.7) at pre-test comparing to 36.0±3.51 at post-test.

As regard educational level, it was observed that the lowest mean score of positive and negative symptoms among post university educational group at pre- post as well as follow up of the program 57.5±27.5, 32.0±2.82 and 35.5±6.36 respectively. There was no statistically significant relation between positive and negative symptoms and their clinical data at pre, post as well as the follow up (p-value >0.05). The same table indicates that, the highest mean scores of the positive as well as negative symptoms was among previously hospitalized patients 78.6±17.7 at pre-test comparing to 34.7±2.9 at post-test and 42.9±7.7 at follow up.

Discussion

Positive, negative, as well as cognitive symptoms are all part of schizophrenia, a severe clinical mental illness marked by abnormalities in thinking, reality testing, perception, attention, emotion, behavior, and motivation (Chatterjee, 2023). Psycho-educational techniques have been created to assist patients have good understanding of their condition and how it is being treated. It is thought that more understanding and knowledge help those who suffer from schizophrenia manage their condition more skillfully, which improves prognosis (Herrera et al., 2023).

The study aimed is to evaluate the effect of psycho educational program on positive, negative symptoms on schizophrenic patients.

Regarding the patient's socio-demographic traits, this study showed that lower than fifty percent of the two groups of patients were aged between <20:29 years. From the perspective of the researcher, it might be the result of schizophrenia, which often manifests in late adolescence or early adulthood. In terms of gender and marital status, less than three quarters of the patients were single and three fifths of the patients were male. However, this result contradicts the findings of (Zaki et al., 2018), who found that the mean age of the patients under study was 38.7±12.63 years, and fewer than 50% of them were older than 40.

This come in accordance with (Shehu et al., 2022) they mentioned that nearly fifty percent of the studied sample their age were ranged from 20:39 years. Also, this finding come parallel with (Ahmed & Ghaith, 2018) they revealed that mean age of the patients in both groups was 34.2±10.2 years. Overall, 66% of them were males.

As regards gender for both groups, the most of the controlled and studied patients were males. This illustrated by the fact prevalence of schizophrenic among men more than women. This result might be attributed to that male schizophrenic patients had more dangerous cognitive deficits than female patients in many areas as thinking, perception, memory, language and attention.

In this respect this result was confirmed by (Okasha et al., 2020) they reported that the male gender represents nearly more than half sixty percent of the recruited sample in comparison to forty percent female. on the other hand this opposite with (Li et al., 2018) who clarified that the males were higher significant to have schizophrenia than female.

In relation to marital status, higher than half of the sample were single among both controlled and studied patients. This could be because schizophrenia patients find it difficult to form and maintain solid relationships, in addition to the debilitating nature of their condition. Indeed, how have a relationship received support and care which decrease effect of disease on schizophrenic patient. This accordance with (Ali et al., 2022) who revealed that lower three quarters of the patients were unmarried and that three fifths of the patients were men.

Concerning the educational level of the controlled and studied patients, the actual study showed that lower half of the controlled patients and less than one third of them had secondary degree of education. Also, the current study showed that more than half of patients working (free work). According to researchers, schizophrenia is thought to be the most severe psychotic illness. It significantly impairs a person's ability to function and lead a normal life, making it impossible for them to work as an employee. This result come in the line with (Okasha et al., 2020) and (Zaki et al., 2018) who reported that more than fifty percent of the studied patients have secondary education. In addition this result confirmed by (Ali et al., 2022) who revealed that half were have secondary education and the three quarters (75%) were working (free work).

Concerning the patient's clinical history, this study illustrated that, the most of the controlled and studied patients have the diseases for less than one year and more than fifty percent of them previously entered to the hospital. This might be attributed to that; schizophrenia is a chronic disease affecting individual for the rest of his life. This result was confirmed by (Zaki et al., 2018) who reported that the most

of the studied patient suffering from the disease for one year and admitted to the hospital one time before. Also, the current study was in contrast with (Fatema, 2014) who stated that more than two fifth 40.7% of the subjects had suffer from the disease for 5 to 10 years and less than one third of them 28.1% were admitted in the hospital more than 10 times.

Regarding the overall positive and negative syndrome among schizophrenia patients in the study group, the current study shown that, in comparison to all of the patients at the post-test and the majority of them at follow-up, less than fifty percent of the examined patients had low positive and negative syndrome during the pre-test. According to the researcher, these results could be attributed to the significant impact of psycho-educational programs, which have emerged as an efficient and supplementary treatment that can raise patients' awareness of schizophrenia and ensure their active participation in their care. These programs have also been linked to improved psychopathological status, a lower rate of relapse, and higher levels of compliance with treatment.

This result comes in accordance with (Apriance & Sujatmoko, 2021) they reported that the most of the studied sample had fair to severe psychiatric symptom in pre intervention, comparing to the majority of them had low psychiatric symptom after intervention. In addition this result come in accordance with (Bighelli et al., 2021) they found that psychoeducation can lower the recurrence rates of individuals with schizophrenia.

Regarding the total positive and negative syndrome as well as their dimensions among schizophrenic patient, the present study showed that, the total means score of positive and negative syndrome of the studied patients were (77.2± 18.2) in contrast to the controlled were (74.07± 20.9) at pre-test with no statistical significance differences between the studied patients and controlled patient (p- value ≥ 0.460). These might be due to the both (studied and controlled) patients chosen to participate at the same stage of hospitalization, share most of environmental circumstances also, were under the same type of treatment before intervention.

Concerning post-test, the present study clarified that, the total means score of positive and negative syndrome of the studied patients were (35.57± 4.33), in contrast to the controlled patients were (55.97± 14.71), with highly statistical significance differences between the studied patients and controlled patients (p- value ≤ 0.001). At the follow up the same illustrates that, the total means score of positive and negative syndrome of the studied patients were (45.17± 1.5), in contrast to the controlled patients were (50.07± 1.9), with no statistical significance differences between the studied patients and controlled patients (p- value ≥ 0.072) which could be associated with effect of psycho education program applied to studied not controlled patients.

This outcome is consistent with the findings of (Shehu et al., 2022), who said that psycho-educational therapies are a part of a typical therapeutic program for patients with schizophrenia in both the acute and post-acute stages. Additionally, according to Alhadidi et al. (2020), it had a favorable and negative symptom-reducing impact. Additionally, Shinozaki et al. (2020) found that psychoeducation can aid in the improvement of both positive and negative symptoms.

Regarding the relation between socio-demographic data, positive and negative symptoms for controlled patients, the present study showed that, there was no significant

relation between socio-demographic data, positive and negative syndrome for control group this result could be explained by two factors first one that the blind technique the researcher followed in all stages of the study and second one that people undergoing the study were studied in specific area of time after admission affected by the disease with the same degree.

This result come in the line with (Ali et al., 2022) who reported that there was no statistical significance differences between the studied sample socio-demographic data and their positive and negative syndrome. While this results differ with (Desalegn et al., 2020) who reported that there was highly statistical significance differences between the studied sample demographic characteristics and their positive and negative symptoms.

Concerning the relation between the studied patients' positive and negative syndrome and their clinical data, the present study illustrated that, there weren't statistical significance differences between studied patients' positive, negative syndrome and their duration of diseases, admission to hospital and the mode of admission at pre, post and the follow up (p-value >0.05). This result differ with (Ahmed, 2021) who stated that there were statistical significance differences between studied patients' positive and negative symptoms and the studied patient clinical history.

Conclusion

Drawing on the results of this study, it can be concluded that,

Less than fifth of studied patients have low positive and negative syndrome comparing to all of them at post-test and the majority at follow up. In addition, there is no significant relation between socio-demographic data and positive and negative syndrome for both controlled and studied patients, there was no statistical significance relation between controlled patients' clinical data and positive and negative syndrome at pre, post and the follow up.

Recommendations

According to the current study's findings, it is recommended that:

- A. Continuous provision of psycho-educational program should be developed in all psychiatric departments and social contexts to improve learning skills, and maintaining the improvement in their social functioning among persons with schizophrenia and decrease positive and negative symptoms.
- B. Continuous implementing support programs, rehabilitation programs, family therapy and workshop for the patients that focused on behavior management, stress management.
- C. Encourage Involving patients as much as possible in their treatment plan to become active partner, gain their trust as well as cooperation. And enlisted patient's families as a source of encouragement and support.
- D. Workshops and training programs should be put in place to provide hospital employees the knowledge, instruction, and abilities they need to understand the value of psychoeducation.

For further research

- Conducting the study again with a bigger probability sample drawn from several geographic regions in Egypt

to assess effect of psycho educational program on positive, negative symptoms among schizophrenic patients

References:

1. Abou-Elmaaty, G. M., Shaheen, S. H., & Eweida, R. S. (2021). Relationship Between Self-Concept Clarity, and Positive and Negative Symptoms among Patients with Schizophrenia. *Alexandria Scientific Nursing Journal*, 23(2), 105-1114.
2. Ahmed, H. A. A. E., & Ghaith, R. F. A. H. (2018). Effect of psycho-educational program on families' perception of burden and attitudes toward mental illness among caregivers of patients with schizophrenia. *Egyptian Nursing Journal*, 15(3), 331.
3. Ahmed, S. E. E. (2021). Impact of Social and Cognitive Rehabilitation Program on Schizophrenic Patients: Pre & Post study. *Saudi J Nurs Health Care*, 4(10), 333-348.
4. Alhadidi, M. M., Lim Abdullah, K., Yoong, T. L., Al Hadid, L., & Danaee, M. (2020). A systematic review of randomized controlled trials of psychoeducation interventions for patients diagnosed with schizophrenia. *International Journal of Social Psychiatry*, 66(6), 542-552.
5. Ali Mohammed, Z., Abo-Bakr Osman, O., & Mohamed Barakat, M. (2022). Relationship between Positive, Negative Symptoms and Quality of Life among Schizophrenic Patients. *Journal of Nursing Science Benha University*, 3(2), 1083-1098.
6. Ameal, M., Kontio, R., & Välimäki, M. (2019). Interventions delivered by nurses in adult outpatient psychiatric care: An integrative review. *Journal of Psychiatric and Mental Health Nursing*, 26(9-10), 301-322.
7. Apriance, Y., & Sujatmoko, A. (2021). The Role of Psychoeducation Interventions in Preventing Schizophrenia Recurrence. *Scientia Psychiatrica*, 2(2), 135-141.
8. Bighelli, I., Rodolico, A., García-Mieres, H., Pitschel-Walz, G., Hansen, W.-P., Schneider-Thoma, J., . . . Salanti, G. (2021). Psychosocial and psychological interventions for relapse prevention in schizophrenia: a systematic review and network meta-analysis. *The Lancet Psychiatry*, 8(11), 969-980.
9. Chatterjee, I. (2023). Understanding Schizophrenia: Introductory Aspect of the Mental Disorder from Various Perspectives Cognizance of Schizophrenia:: A Profound Insight into the Psyche (pp. 1-14): Springer.
10. Desalegn, D., Girma, S., & Abdeta, T. (2020). Quality of life and its association with psychiatric symptoms and socio-demographic characteristics among people with schizophrenia: A hospital-based cross-sectional study. *PloS one*, 15(2), e0229514.
11. Durna, G., Yorulmaz, O., & Aktaç, A. (2019). Public stigma of obsessive compulsive disorder and schizophrenic disorder: Is there really any difference? *Psychiatry research*, 271, 559-564.
12. Ebrahim, A. S., El-Bilsha, M., & Elhadidy, M. (2021). Social Support among Patients with Schizophrenia. *Mansoura Nursing Journal*, 8(2), 13-25.
13. Elsayed, E. E., Mourad, G. M., & Abd El-Fatah, W. O. (2021). Assessment of knowledge, practices, and burden among caregivers of patients with schizophrenia.
14. Essam Ahmed, H., Hassan Abdel Aal, M., Hosny Shalaby, M., & Mohamed Ahmed, F. (2022). Effect of Family Caregiver Expressed Emotion Control Program on Relapse among Patients with Schizophrenia. *Journal of Nursing Science Benha University*, 3(1), 855-872.
15. Fatema, K. (2014). Cognitive illness representation as perceived by persons with schizophrenia in Bangladesh. Prince of Songkla University.
16. Fitriyasari, R., Yusuf, A., Tristiana, R. D., & Nihayati, H. E. (2018). Family members' perspective of family Resilience's risk factors in taking care of schizophrenia patients. *International Journal of Nursing Sciences*, 5(3), 255-261.
17. Herrera, S. N., Sarac, C., Phili, A., Gorman, J., Martin, L., Lyallpuri, R., . . . Wyka, K. E. (2023). Psychoeducation for individuals at clinical high risk for psychosis: A scoping review. *Schizophrenia research*, 252, 148-158.
18. Janah, M., & Hargiana, G. (2021). Levels of stress and coping strategies in family caregivers who treat schizophrenic patients with risk of violent behavior. *Journal of public health research*, 10(s1).
19. Kane, J. M., Schooler, N. R., Marcy, P., Correll, C. U., Achtyes, E. D., Gibbons, R. D., & Robinson, D. G. (2020). Effect of Long-Acting Injectable Antipsychotics vs Usual Care on Time to First Hospitalization in Early-Phase Schizophrenia: A Randomized Clinical Trial. *JAMA psychiatry*.
20. Kay S, Fiszbein A, Opler L (1987). The Positive and Negative Syndrome Scale (PANSS) for schizophrenia. *Schizophr Bull.*;13(2):261-276.
21. Krynicki, C. R., Upthegrove, R., Deakin, J., & Barnes, T. R. (2018). The relationship between negative symptoms and depression in schizophrenia: a systematic review. *Acta Psychiatrica Scandinavica*, 137(5), 380-390.
22. Li, R., Ma, X., Wang, G., Yang, J., & Wang, C. (2018). Why sex differences in schizophrenia? *J Transl Neurosci (Beijing)*, 1(1), 37-42.
23. Machin, D., Campbell, M.J., Tan, S.B., & Tan, S.H. (2011) Sample size tables for clinical studies. John Wiley & sons.
24. Okasha, T. A., Hussein, H., Shorub, E., Nagi, H., Moustafa, A. A., & El-Serafi, D. (2020). Cognitive dysfunction among inpatients and outpatients with schizophrenia: relationship to positive and negative symptoms. *Middle East Current Psychiatry*, 27(1), 1-7.
25. Saied M, (2020) Thinking and acting beyond the positive: the role of positive and negative symptoms in schizophrenia. *CNS Spectr.* 19 suppl 1:38-52; quiz 35-37,53.
26. Shehu, A., Gommaa, H., Usman, U. S., Usman, S. T., & Auwallawan, K. (2022). Effect of psycho-educational intervention on drug adherence and quality of life among patients with Schizophrenia in Jigawa State, Nigeria.
27. Shinozaki, A., Hayashi, T., & Okamura, H. (2020). Effects of a Psychoeducation program for people with schizophrenia aimed at increasing subjective well-being and the factors influencing those effects: a preliminary study. *Psychiatric Quarterly*, 91, 45-52.
28. Yilmaz et. al., Nilsberg G., Hoff J, Morken G., Helgerud J., (2020): Effects of high aerobic intensity training in patients with schizophrenia: a controlled trial, *Nord J Psychiatry*. Sep; 65(4):269-75
29. Zaki, M., Sayed, F., & Ahmed, F. (2018). Effect of Psycho-Educational Program for Schizophrenic Patients on Their Adherence to Antipsychotic Medication. *IOSR Journal of Nursing and Health Science*, 7.