- *Basic Research*

Effect of Psycho-educational Program Based on Motivational Interview Techniques on Drug Attitude and Condition-Specific Knowledge among Schizophrenic Patients

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Abstract

Background: Patients with schizophrenia diagnoses struggle with drug attitudes and condition-specific knowledge. A motivational interviewing-based psycho-educational program helps patients recover by enhancing their drug-related attitudes and condition-specific knowledge. **Aim of the study:** This study was conducted to determine the effect of the psycho-educational program based on motivational interview techniques on drug attitude, and condition-specific knowledge among schizophrenic patients. **Design and setting:** A quasi-experimental research design was utilized. The study was carried out in a psychiatric inpatient ward at a psychiatric and mental health hospital in Benha City. **Subject:** A convenience sample with pre- and post-design (n=41). **Tools of data collection:** Three tools were utilized for data collection: A structured sheet for gathering personal and clinical data, Drug attitude inventory (DAI), and a knowledge about schizophrenia questionnaire (KASQ). **Results:** The main findings of the study showed that there were highly statistically significant differences between pre-and post-program regarding drug attitude and condition-specific knowledge degree. There is a positive significant correlation between the total scores of drug attitude and condition-specific knowledge level among the studied patients before implementation of the program. **Conclusion:** Based on the findings of the present study, it is concluded that a psycho-educational program based on motivational interview techniques had an appositive effect on schizophrenic patient's drug attitudes and condition-specific knowledge level. **Recommendations**: Ongoing psycho-educational programs focused on counseling are essential to equip clients with fundamental knowledge and to implement motivational interviewing techniques in psychiatric hospitals. This approach aims to enhance clients' understanding of their illnesses and attitudes toward medication, ultimately reducing relapse rates and the frequency of hospitalizations.

Keywords: Condition-specific knowledge, Drug attitude, Psycho-educational program, Motivational interview techniques, and Schizophrenia.

1. Introduction

The persistent psychotic condition known as schizophrenia is frequently characterized by partial remissions and sporadic relapses. It is the eighth most common cause of disability-adjusted life years (DALYs) in the 15–44 age group globally, affecting 1% of the global population. Early adulthood and late youth are when it is initially diagnosed. A mental illness known as schizophrenia is typified by positive and negative symptom clusters that are further separated into three syndromes: disorganization (a thought disorder), psychomotor poverty (negative symptoms), and reality distortion (such as delusions and hallucinations). The most prevalent positive symptoms included delusions and thought disorder, along with inappropriate affect (a component of disorganization) that, when present, was linked to inadequate insight. The onset of schizophrenia and how it ends are probably. **(Abuzaid et al., 2024).**

Antipsychotic medicine is currently the mainstay of treatment for schizophrenia. Medication is a useful tool for managing schizophrenia in patients, as it has been demonstrated to reduce positive symptoms, prevent relapses, and prolong life. Medication adherence is the degree to which patients adhere to the recommended dosage guidelines and time intervals. **(Clifford et al., 2020).** A low degree is seen as inadequate drug compliance. Medication non-adherence behaviors encompass failing to take medication on schedule, varying dosages, discontinuing medication, and lowering dosage on one's own. (**Correll & Schooler., 2020).**

One of the most significant issues impeding medication adherence to antipsychotics and other treatments in people with schizophrenia spectrum disorders is a lack of understanding about the condition and how to take medicine. Furthermore, in the early stages of schizophrenia, acute and severe psychopathology (such as suspicions and delusional beliefs) and any delay in seeking treatment can make it difficult to provide timely and effective interventions and help patients understand the importance of medication adherence, which lowers the likelihood that they will engage in adherence behaviors. **(Guo et al., 2023).**

Key relatives of psychiatric patients must know about medication compliance. The drug's dosage, effects, adverse effects, and what to do if a dose is missed must all be explained to the families. Drug compliance is the most significant factor influencing outcomes in psychiatric patients. Compliance in the context of medication therapy refers to how well the actual dosage history matches the recommended drug schedule. Psychiatry practitioners have long been concerned about patients adhering to their treatment plans. Adequate insurance is crucial for maintaining excellent medication compliance. **(Nuralita and Khairunisa, 2022).**

More severe relapses (relapses associated with noncompliance with prescribed drug regimens may be more severe than relapses occurring when the client is taking the medication as directed) are among the hazards that clients who do not comply with their therapies face. Chronic noncompliance can exacerbate the illness's overall course and eventually reduce the likelihood that a patient will react to treatment. Poor adherence reduces a medicine's maximum clinical benefit, making it a main factor in its effectiveness. More serious pharmacological side effects, particularly extrapyramidal adverse effects, may be linked to poor adherence. Ninety-seven percent of the patients receiving standard antipsychotic medications may have had side effects that they interpreted as a "bad attitude" toward the drug. **(Lee et al., 2019).**

Low drug compliance will result in high relapse rates and poor treatment efficacy. According to certain publications, the five years preceding the start of schizophrenia are when symptoms first appear, when treatment is most effective when medicine is taken on schedule and at the appropriate dose, and when medication is irregular, the main risk factor for relapse occurs. The likelihood of a patient being readmitted to the hospital is six times higher for those who do not insist on medicine. Additionally,

several studies have demonstrated a link between problematic behaviors like aggression, self-harm, and suicide and inadequate medication adherence. **(Fountoulakis et al., 2020).**

Inadequate drug compliance is a significant public health issue that is frequently disregarded. One of the main drug-related issues in the United States is prescription non-adherence, which can result in needless disease progression, diminished functional skills, disease consequences, lower quality of life, and even death. Merely 50% of patients are thought to consistently take their prescriptions as directed. The necessity for a multidisciplinary approach to medication-taking behavior is becoming more widely recognized. A "medication education team," in which the patient and every member of the healthcare team collaborate to treat the patient's condition while acknowledging the patient's crucial position at the center of the process, is advised by the National Patient Information and Education Council (NCPIE). **(Lam et al., 2020).**

In the therapy of schizophrenia, the patient's viewpoint on psychopharmacology has often been found to be connected to real treatment adherence. These results unequivocally highlight the need to improve drug attitudes among patients diagnosed with schizophrenia and expand our knowledge of the variables influencing these views. Although motivation and comprehension of the current treatment are expected to have a direct impact on a patient's attitude toward psychopharmacology, no study has thoroughly examined the influence of a patient's understanding of their illness and their awareness of ongoing pharmacotherapy on their attitudes toward drug treatment among patients with schizophrenia. **(Nagai et al., 2020)**

The association between medication adherence and attitude toward medication was examined in eleven research. Positive attitudes were linked to poor adherence, and the most significant predictors of non-adherence were patients with first-episode schizophrenia spectrum psychoses, poor early medication acceptance at study entry, and hostility and uncooperativeness at first admission. All of these showed a significant positive association. **(Velligan et al., 2017)**. The patient's attitude toward therapy—such as mistrust, ambivalence, and rejection of unpleasant side effects—as well as their condition, which, if acute and severe, may encourage drug refusal, appear to be related to the patient's lack of treatment adherence. When a patient doesn't follow their treatment plan, the therapist may feel helpless and frustrated, which may lead to an overprescription of pharmaceuticals that is seen as an indication of the so-called "counter-transference desperation. **(Semahegn et al., 2018)**.

The way a patient feels about medications is likely a reflection of how they balance the potential or actual advantages of the treatment against any potential hazards or adverse effects. Furthermore, public perceptions of psychiatric drug therapy are shifting in line with advancements made in mental health care over the past 20 years. However, the public still seems to have a propensity to frequently rely on resources outside of the mental health field as well as on conventional "alternative" therapy approaches. Patients who have used (or are now using) psychiatric medications have very different experiences. Many patients find that these medications are effective in managing bothersome symptoms, and these patients are probably more likely to be optimistic and unlikely to wish to stop taking the medication. Even if a large number of patients have. **(Di Lorenzo et al., 2020).**

Psycho-educational intervention enhanced medication adherence and satisfaction with mental health care, decreased relapse and readmission rates, and lengthened average hospital stays, all while improving quality of life. The treatment guidelines of the American Psychiatric Association (APA) state that psycho-educational interventions ought to be a regular component of therapy for individuals diagnosed with schizophrenia. Psychoeducation promotes a shared professional-patient decision-making process that takes the patient's treatment choices and clinical knowledge into account. When decisions are made jointly, autonomy is encouraged and each person's preferences, values, and interests are taken into consideration. It instructs patients and their families on the nature of the illness, treatment

options, coping mechanisms, and relapse prevention techniques. **(Kassaw et al., 2020) & (Vučić Peitl et al., 2022).**

It has been discovered that individuals with schizophrenia, significant treatment resistance, or an aversion to changing their behavior can benefit most from motivational interviews. With early encouraging evidence of the reduction of psychotic symptoms and relapse rates in patients, this therapeutic strategy to behavioral intervention was used to promote treatment adherence and enhance particular knowledge levels in schizophrenia. The encouraging outcomes show that more research is needed to determine how this self-empowerment and motivational approach—which focuses on both cognitive and emotional aspects of the illness—affects various patient outcomes, including medication attitudes and disease knowledge in addition to symptom severity and recurrence. and/or medication, as well as psychosocial functioning in those who don't take their antipsychotic drugs as prescribed. (**Harmanci P, 2022)**

Developed by clinical psychologists, motivational interviewing (MI) is a directive tool for strengthening the intrinsic drive to change through ambivalence resolution. MI was once intended to be a therapeutic strategy for treating alcohol and other substance abuse. Motivational interviewing [MI] follows a pattern in which patients discuss their issues with counselors in well-planned dialogues. Through the exploration of personal concepts and ambivalences, it elicits and selectively reinforces "change talk," which amplifies differences between the patient's future aspirations and their current behavior. When clients do discuss change, it's critical to keep in mind to ask them how they would want to go about making the changes, where they would like to start, what it would entail for them, what obstacles they may have, and how they will need to work through those obstacles. The goal of MI is to boost the patient's internal desire to make changes. Positive transformation approaches that work well concentrate on modest objectives that are meaningful to the patient, precise, doable, and future- or present-focused. (**Sudjai & Hengudomsub, 2020).**

1.1. Significance of the Study

For both men and women, schizophrenia ranks fifth and sixth, respectively, among the causes of disability. Schizophrenia was estimated at 4.6 per 1000 (0.46 %,) worldwide depending on published epidemiological research 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).**

Furthermore, poor knowledge and unfavorable attitudes toward drugs in schizophrenia patients have been linked time and time again to worse functional results, such as decreased activity participation, academic and professional performance, home integration, social functioning, and household integration. On 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 drug attitude and specific knowledge level. Thus, applying a psycho-educational program on drug attitude as well as specific knowledge levels among schizophrenic patients is a practical strategy to increase patient's awareness of their disease.

The results of the study may be used as a reference, especially for nurses working in community mental health centers to receive "motivational interview training," and they may be taken as an example for integrating motivational interview techniques into psychoeducation programs organized in community mental health centers. This study is significant because it would be the first time that motivational interview techniques integrated into psychoeducation would be used in individuals diagnosed with schizophrenia.

2. Aim of the Study

The study aimed to examine the effect of a Psycho-educational Program Based on Motivational Interview Techniques on Drug Attitude and Condition-Specific Knowledge among schizophrenic patients.

2.1. Research Hypothesis: -

H1: Patients with schizophrenia who participated in a Psycho-educational Program Based on Motivational Interview Techniques are more expected to have positive Drug attitudes, after the implementation of the program than before.

H2: Patients with schizophrenia who participated in a Psycho-educational Program Based on Motivational Interview Techniques are more expected to have high condition-specific Knowledge, after the implementation of the program than before.

3. Subjects and Methods:

3.1. Specific objectives*:*

1. Evaluate schizophrenic patients' Drug Attitude.
2. Assess schizophrenic patients' degree of condition-specific Knowledge.
3. Designing, Implementing, and evaluating a Psycho-educational Program Based on Motivational Interview Techniques to improve Drug Attitude and condition-specific Knowledge among schizophrenic patients.

3.2. Research Design

In this research setting, a quasi-experimental design (pretest and posttest single group type) was employed.

3.3. Setting:

This study was carried out in Benha City's Psychiatric and Mental Health Hospital's inpatient psychiatric ward. The General Secretariat of Mental Health is connected to the hospital.

Three buildings make up the hospital:

1. One building houses a single women's department.
2. Five departments are separated within one building for men.
3. An independent Addiction Treatment Center building.

3.4. Subjects

a convenience sample consisting of 41 schizophrenia patients admitted to the Psychiatric and Mental Health Hospital at the previously specified location. The patient's primary care physicians and nurses in the hospital recruited the subjects. The following criteria had to be met in order to be eligible for inclusion: a diagnosis of schizophrenia based on the International Classification of Diseases - revision: 2013 (ICD-10: codes F20 to F25); being receiving clinically stable oral antipsychotic medication at the time of the study; being able to attend a one-hour session; being able to communicate verbally; and being at least eighteen years old. The following were the subjects' exclusion criteria: being intellectually disabled, declining to take part in the study, and finding it difficult to sit through the sessions.

3.5. Sample Size

It was estimated by detecting a similar effect size as reported in the **Choe et al. (2014)** study with 95% power, a 95% confidence level, and accounting for a potential dropout rate of 15%, you would need a sample size of at least 41 participants for a pre-and-post quasi-experimental design.

3.6. Tools for Gathering Data

The following tools were employed to gather data:

Tool I: Drug Attitude Inventory (DAI)

This measurement tool was created by **Awad, (1993),** in an English language and translated to an Arabic language by **Mohammed & Mohammed (2021**). It was developed to measure schizophrenia patients' perceptions of their experiences of neuroleptic treatment. The DAI-10 is a self-reported assessment tool that asks patients to indicate which components of their treatment experiences and impressions they agree or disagree with. Items 2, 5, 6, and 8 show unfavorable views regarding the current drug, whereas items 1, 3, 4, 7, 9, and 10 show good attitudes. Each "positive" response receives a score of plus one, and each "negative" answer receives a score of minus one when determining the overall score from a collection of replies. A total score of less than zero shows a positive attitude toward psychiatric medications, while a total score of more than zero suggests a negative attitude toward them. The DAI-10 scoring runs from – 10 to + 10. Arabic version of DAI had reliability (Pearson's r= 0.87) and, Cronbach's "coefficient was .86. **(Mohammed & Mohammed., 2021).**

Tool II: Knowledge About Schizophrenia Questionnaire (KASQ)

It was established by Ascher-Svanum, in 1999 in English language and translated into Arabic language by **Hasan, Callaghan, & Lymn., 2014.** This scale was used to measure the participants' knowledge of schizophrenia. The KASQ has twenty-five multiple-choice items. The KASQ assesses fundamental understanding of the causes, manifestations, prognosis, and treatments of schizophrenia, including familiarity with the adverse effects of antipsychotic drugs. The KASQ scores range from 0 to 25, where higher scores indicate a participant's more understanding of schizophrenia: 0–12 indicates limited knowledge, while 13–25 indicates good knowledge.

The expert evaluation revealed that an Arabic version of the KASQ, which was utilized in a study with Arabian schizophrenia patients, had great reliability and high content validity (Cronbach's alpha, 0.88) **(Hasan, Callaghan, & Lymn., 2014).**

In addition, the researchers employed the Personal and Clinical Data Questionnaire, an Arabic-language structured interview questionnaire. Personal characteristics included in it included age, gender, marital status, educational attainment, occupation, place of residence, monthly income, living status, length of illness, and kind of hospital admission.

3.7. Ethical Consideration

Moral reflection The Research Ethics Committee's (REC-PSYN) approval was used, and on June 2nd , 2024, the College of Nursing at Benha University in Egypt received approval (No. P34). The goal of the study was explained to the participating schizophrenia patients, guaranteeing that all information gathered would be used exclusively for scientific purposes. Every participant was also informed of their freedom to deny involvement or to leave the study before completing the required readings without incurring any penalties. Those with schizophrenia who consented to participate were asked to do so in writing and with informed permission

3.8. A Pilot Study:

Prior to carrying out the main investigation, four patients, representing 10% of the total number of patients under examination, underwent a pilot trial. All of these patients had schizophrenia. This was done in order to determine the importance, clarity, viability, and practicability of the study tools that were employed, as well as to gauge how long it would take to complete the tools. No changes were made in response to the pilot study's findings. The learning aids were colorful and guileless. To guarantee the consistency of the findings, the patients who agreed to participate in the pilot trial were excluded from the main study population.

3.9. Fieldwork:

The study was conducted in the Psychiatric Mental Health Hospital's inpatient psychiatric unit in Benha City, Qalyubia, Egypt. Patients with convenience schizophrenia who met the study's inclusion and exclusion criteria were admitted. After introducing themselves, the researchers had one-on-one meetings with each patient to go over the goals of the research, guarantee anonymity, and get informed written consent in order to request participant cooperation prior to using the intervention approach.

There were 41 patients in the field study. Six to eight patients were questioned for thirty minutes for two days a week from 9. AM to 2 PM, during which time the researchers filled out the pre-program questionnaire (pre-program) from the patients. In June 2024, this process took two weeks. Interviews were used to gather data. Each patient's sheet was filled out separately by the researchers.

The sessions are two days a week, from mid-June to mid-September of 2024. Every day, the researchers saw four patient groups that were split into two groups throughout sessions, with five to six patients in each group. For every group, the researchers reiterated the contents. The duration of each session was roughly 45 to 60 minutes. A total of eight sessions were held. Next, Complete the post-program interventions data gathering instruments that were previously employed.

3.10. Program implementation

Three months passed during the implementation phase. The study's implementation was divided into three stages: planning and assessment, implementation, and evaluation.

I- Planning and assessment phase:

A psychoeducational program based on Motivational interview techniques was established by the investigators based on reviewing the recent related literature **(Harmanci & Budak, 2022; Ertem & Duman, 2019)** . An Arabic version of the psychoeducational program was prepared by translating and back-tracking the content using motivational interviewing techniques. A team of seven specialists in psychiatric medicine and nursing also evaluated the program's content validity. The interviewers were placed in a cozy, private area. The name of the researcher, the significance of the study, its objective, and its content were all explained. All patients with schizophrenia who satisfied the inclusion and exclusion criteria had their data gathered. They were screened by the application of three tools of assessment (Personal and Clinical Data Questionnaire, Drug Attitude Inventory (DAI), and Knowledge About Schizophrenia Questionnaire (KASQ)

II- Implementation Phase:

Schizophrenic patients were informed about psychoeducational program based on Motivational interview techniques which aimed to help them acquire positive attitudes toward antipsychotic medication and improve condition-specific knowledge regarding schizophrenia. This psycho-educational program is broken up into sessions, each with a distinct set of goals, and it has a general goal. Patients were made aware of the program's objectives, training activities, session count, and data gathering techniques. Eight sessions were used to implement the curriculum. This was accomplished by using a variety of instructional strategies, including talks, debates, and giving examples. Pictures, videos, role plays, and data shows were all utilized as media. Each session summary was followed by feedback and additional clarifications for any unclear items.

The psychoeducational program based on Motivational interview techniques:

A program based on motivational interviewing techniques helps acquire positive attitudes toward antipsychotic medication and improves condition-specific knowledge regarding schizophrenia. The patients will be able to distinguish between side effects from medication and symptoms through to MI. patient will understand how beneficial drugs are in treating illness. These sessions will reveal the many ideas or actions that the patient encountered. There are eight sessions in the program. Because each session provided topic integrity, they were all connected to one another. For instance, the patient describes the signs and symptoms of the illness, points out the barriers to consistent drug use, and provides an arbitrary assessment of the treatment's advantages and disadvantages. The following meeting covers the objective discussion of the disease's symptoms and treatment side effects (using a prospectus, etc.).

- **Each session's goal is articulated as follows:**
- **Session (1):** Give a summary of the program as presented by the researchers, outlining the overall goal, the evaluation procedure, and the subjects' roles during the sessions.
- **Session (2):** Determination of the resistance of the patients to change. For this, the researchers used the projective listening technique. The resistant patients were brought back to awareness through the use of projected listening. To ascertain the reasons for their resistance, open-ended inquiries were employed.
- **Session (3):** The objectives of this session are to comprehend the signs and symptoms of the illness, pinpoint the barriers to consistent drug usage, and assess the advantages and disadvantages of the prescribed course of action. Furthermore, the patient's conflicted emotions about the treatment are attended to.
- **Session (4):** Educating clients about illness, assessing drug adverse effects, balancing the advantages of treatment, and increasing awareness. At this point, it is critical to increase awareness by posing thoughtful, open-ended questions.
- **Session (5):** This session's objective is to help the patient see both the advantages and disadvantages of his prior experiences in order to motivate him to make changes.
- **Session (6):** Aim to assess the patient's decisions on the change and rebuilding trust, this session aims to help relapse prevention and enhance teamwork.
- **Session (7):** This interview's goal is to boost a patient's confidence in their ability to stick to their treatment plan. By highlighting the significance of maintaining or improving one's health, the need for preventative or maintenance treatment is evaluated
- **Session (8):** Conclusion and summary

Throughout the sessions, the techniques of summarizing and reflective listening were applied. Every assessment statement the researchers devised included open-ended inquiries and reflective listening.

III- Evaluation Phase:

To assess the efficacy of the training program, participants' attitudes toward antipsychotic medication and condition-specific knowledge about schizophrenia were assessed using a post-test sheet identical to the pre-test, which was again filled out by the patients.

3.11. Statistical analysis:

The computer was fed data, and IBM SPSS software package version 27.0 was used for analysis. (IBM Corp., Armonk, NY) Numbers and percentages were used to describe the qualitative data. To confirm the distribution's normality, the Shapiro-Wilk test was performed. The terms range (minimum and maximum), mean, standard deviation, and median were used to characterize quantitative data. At the 5% level, the results' significance was assessed. To examine the importance between the various phases, the McNemar Test was employed. To compare two eras, use the Wilcoxon signed ranks test for quantitative variables with anomalous distributions. Two quantitative variables that are abnormally distributed are correlated using the Spearman coefficient.

4. Results

Table (1): shows the characteristics of the patients with schizophrenia who were studied; the largest percentage, 68.3%, were between the ages of 30 and 50 on average. 7.3% of patients in the age category of (50 to more) years old was the lowest percentage. Males made up more than half of the sample (58.5%). Regarding the analyzed sample's educational background, two-quarters of the sample (24.4%) held bachelor's degrees, while 41.5% of the sample had just completed secondary school. Additionally, 51.2% of the sample study's participants were unemployed.

In terms of the study sample's marital status, 29.3% of the sample was married, while 41.5% of the sample was single. In terms of the sample's location of residence, more than half (53.7%) of the patients under study did so in Egypt's rural areas. About 80.5% of the patients in the study lived with their families, and 58.5% of them had inadequate incomes. The remaining study participants, on the other hand, were single and had adequate incomes. According to the patients under study, the majority of the sample (56.1%) had onset of schizophrenia within the last five years. Of the patients analyzed, 53.7% were admitted to the hospital against their will.

Table (2) Figure (1): shows that there are significant differences between pre- and post-program interventions in relation to all items regarding to drug attitude ($p<0.0001$). Both negative drug attitude scores decreased from 26.8% during the pre-program intervention to 4.9% after the program intervention and positive drug attitudes increased from 73.2% during the pre-program intervention to 95.1% after program intervention.

Table (3) Figure (2): demonstrates that there are statistically significant differences between pre-and post-program interventions in relation to all items regarding to knowledge levels ($p<0.0001$). The low level of knowledge scores decreased from 85.4% during the pre-program intervention to 12.2% after the program intervention. The high level of knowledge increased from 14.6% during the pre-program intervention to 87.8% after program intervention.

Table (4): explains that, following program implementation, the overall score of drug attitude has a positive significant relationship with age, educational level, married status, living situation, and hospital admission at ($p \leq 0.05$). Additionally, following program implementation, there is a substantial positive connection between educational level and condition-specific knowledge level at ($p \leq 0.05$).

Table (5): indicates that among the patients under study, there is a strong positive association between the total scores of drug attitude and condition-specific knowledge level before the program is implemented ($r = 0.529^*$, $p<0.001$) and after the program is implemented ($r = 0.643^*$, $p<0.001$).

Table (1): Percentage distribution of the demographic and Personal and clinical characteristics of the studied patients (n = 41)

Personal and clinical characteristics	No.	%
Gender		
Male	24	58.5
Female	17	41.5
Age		
Less than 30 years	10	24.4
From 30 – <50 years	28	68.3
50 years and more	3	7.3
Mean ± SD.		
Educational level		
Illiterate	5	12.2
Primary	9	22.0
Secondary	17	41.5
University	10	24.4
Marital status		
Single	17	41.5
Married	12	29.3
Divorced	9	22.0
Widow	3	7.3
Occupation		
Working	20	48.8
Not working	21	51.2
Retried	0	0.0
Student	0	0.0
Income		
Enough	17	41.5
Not Enough	24	58.5
Residence		
Rural	22	53.7
Urban	19	46.3
Living Status		
With a family member	33	80.5
Alone	8	19.5
Onset of disease in years		
Less than5 years	23	56.1
From 5 –10 years	10	24.4
More than10 years	8	19.5
Hospital admission		
Voluntary	19	46.3
Involuntary	22	53.7

Table (2): Percentage distribution of the studied patients' pre and post-program intervention according to drug attitude (n = 41)

Attitude	Pre		Post		Test of Sig.	P
	No.	%	No.	%		
Negative attitude (<0)	11	26.8	2	4.9	McN= 0.771*	0.022*
Positive attitude (>0)	30	73.2	39	95.1		
Total score (-10 – 10)						
Min. – Max.	-8.0 – 8.0		-6.0 – 10.0			
Mean ± SD.	2.10 ± 4.12		5.95 ± 3.56			
Median	2.0		6.0			
Average score (-1 – 1)						
Min. – Max.	-0.80 – 0.80		0-.60 – 1.0		t= 4.967*	<0.001*
Mean ± SD.	0.21 ± 0.41		0.60 ± 0.36			
Median	0.20		0.60			
% score						
Min. – Max.	10.0 – 90.0		20.0 –100.0			
Mean ± SD.	60.49 ± 20.61		79.76 ± 17.82			
Median	60.0		80.0			

SD: **Standard deviation** t: Paired t-**test** **McN: McNemar test**
p: p-value for comparing between **pre** and **post**
*: Statistically significant at $p \leq 0.05$

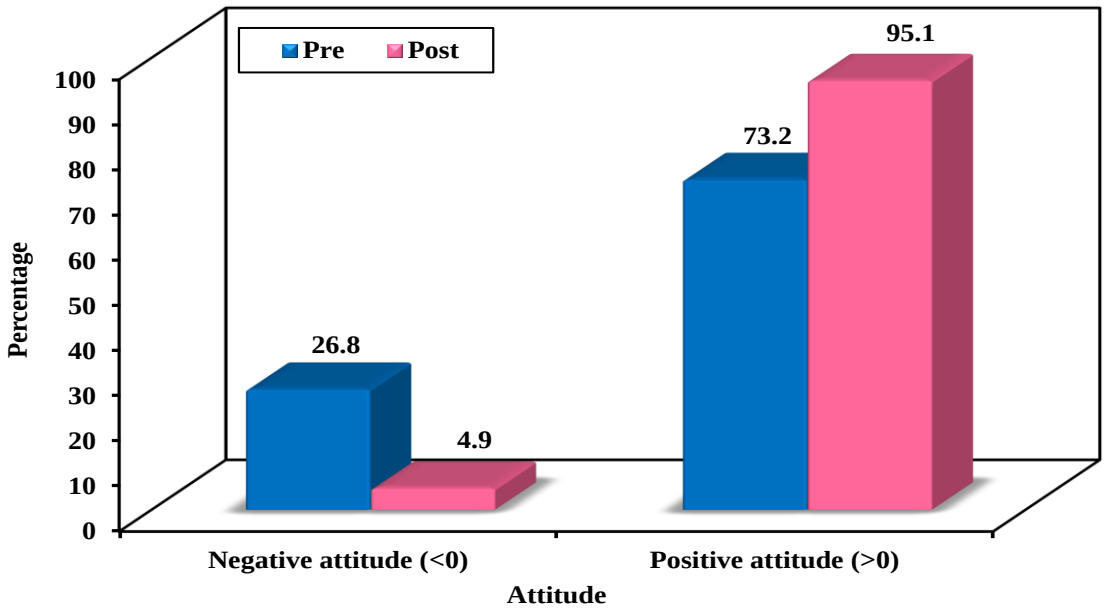

Figure (1): Percentage distribution of the studied patients' pre and post program according to drug attitude (n = 41)

Table (3): Percentage distribution of the studied patients' pre and post program intervention according to knowledge levels (n = 41)

Knowledge	Pre		Post		Test of Sig.	P
	No.	%	No.	%		
Low knowledge (0–12)	35	85.4	5	12.2	McN= 28.033*	<0.001*
High knowledge (13–25)	6	14.6	36	87.8		
Total score						
Min. – Max.	0.0 – 20.0		2.0 – 25.0			
Mean ± SD.	5.90 ± 5.91		19.44 ± 4.65			
Median	2.0		21.0			
Average score (0 – 1)						
Min. – Max.	0.0 – 0.80		0.08 – 1.0			
Mean ± SD.	0.24 ± 0.24		0.78 ± 0.19		t= 15.504*	<0.001*
Median	0.08		0.84			
% score						
Min. – Max.	0.0 – 80.0		8.0 – 100.0			
Mean ± SD.	23.61 ± 23.63		77.76 ± 18.59			
Median	8.0		84.0			

SD: **Standard deviation** t: paired t-**test**
McN: McNemar test
p: p value for comparing between **pre** and **post**
*: Statistically significant at $p \leq 0.05$

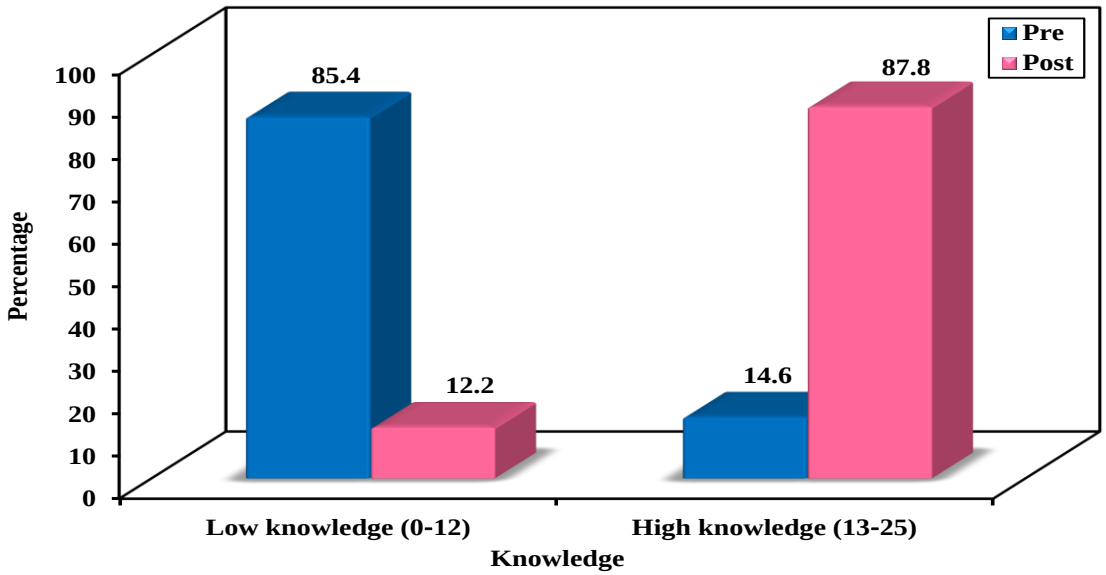

Figure (2): Percentage distribution of the studied patients' pre and post program according to knowledge levels (n = 41)

Table (4): Relation between total score drug attitude and Personal and clinical characteristics (n = 41)

Personal and clinical characteristics	N	Total score drug attitude						Knowledge									
		Pre			Post			Pre				χ^2	P	Post				χ^2	p
								Low (n=35)		High (n=6)				Low (n=5)		High (n=36)			
		Mean ± SD.	Test of sig.	p	Mean ± SD.	Test of sig.	P	No.	%	No.	%			No.	%	No.	%		
Gender																			
Male	**24**	1.33 ± 3.90	U=	0.138	5.75 ± 3.19	U=	0.482	22	91.7	2	8.3	1.839	^{FE}p=	2	8.3	22	91.7	0.806	0.633
Female	**17**	3.18 ± 4.30	149.0		6.24 ± 4.12	178.0		13	76.5	4	23.5		0.212	3	17.6	14	82.4		
Age																			
Less than 30 years	**10**	1.0 ± 4.03	H=	0.516	3.60 ± 3.63	U=	0.036*	9	90.0	1	10.0	0.506	^{FE}p=	2	20.0	8	80.0	3.147	^{FE}p=
From 30 – <50 years	**28**	2.36 ± 4.32	1.323		6.71 ± 3.36	6.668*		23	82.1	5	17.9		1.000	2	7.1	26	92.9		0.186
50 years and more	**3**	3.33 ± 2.31			6.67 ± 2.31			3	100.0	0	0.0			1	33.3	2	66.7		
Educational level																			
Illiterate	**5**	1.60 ± 4.56			3.20 ± 4.38			5	100.0	0	0.0			3	60.0	2	40.0		
Primary	**9**	1.56 ± 4.10	H=	0.379	6.89 ± 2.85	H=	0.011*	6	66.7	3	33.3	3.994	^{FE}p=	1	11.1	8	88.9	8.348*	^{FE}p=
Secondary	**17**	1.29 ± 4.36	3.082		4.82 ± 3.54	11.118*		16	94.1	1	5.9		0.214	1	5.9	16	94.1		0.014*
University	**10**	4.20 ± 3.33			8.40 ± 2.07			8	80.0	2	20.0			0	0.0	10	100.0		
Marital status																			
Single	**17**	1.65 ± 3.41			5.88 ± 3.50			13	76.5	4	23.5			2	11.8	15	88.2		
Married	**12**	1.83 ± 5.15	H=	0.026*	5.83 ± 2.89	H=	0.097	10	83.3	2	16.7	2.535	^{FE}p=	2	16.7	10	83.3	0.744	^{FE}p=
Divorced	**9**	1.33 ± 3.32	9.254*		4.89 ± 4.48	6.313		9	100.0	0	0.0		0.514	1	11.1	8	88.9		1.000
Widow	**3**	8.0 ± 0.0			10.0 ± 0.0			3	100.0	0	0.0			0	0.0	3	100.0		
Occupation																			
Working	**20**	1.80 ± 3.99	U=	0.585	7.10 ± 2.47	U=	0.057	15	75.0	5	25.0	3.359	^{FE}p=	1	5.0	19	95.0	1.888	^{FE}p=
Not working	**21**	2.38 ± 4.32	189.500		4.86 ± 4.13	138.500		20	95.2	1	4.8		0.093	4	19.0	17	81.0		0.343
Income																			
Enough	**17**	0.82 ± 4.13	U=	0.082	5.53 ± 2.60	U=	0.152	15	88.2	2	11.8	0.191	^{FE}p=	3	17.6	14	82.4	0.806	^{FE}p=
Not Enough	**24**	3.0 ± 3.96	139.500		6.25 ± 4.14	151.000		20	83.3	4	16.7		1.000	2	8.3	22	91.7		0.633
Residence																			
Rural	**22**	3.0 ± 3.99	U=	0.098	5.91 ± 4.43	U=	0.575	18	81.8	4	18.2	0.478	0.668	4	18.2	18	81.8	1.589	^{FE}p=
Urban	**19**	1.05 ± 4.13	147.000		6.0 ± 2.31	188.0		17	89.5	2	10.5			1	5.3	18	94.7		0.350
Living Status																			
With a family member	**33**	2.18 ± 4.19	U=	0.735	5.39 ± 3.69	U=	0.022*	30	90.9	3	9.1	4.160	^{FE}p=	5	15.2	28	84.8	1.380	0.563
Alone	**8**	1.75 ± 4.06	121.500		8.25 ± 1.67	63.500*		5	62.5	3	37.5		0.077	0	0.0	8	100.0		
Onset of disease in years																			
Less than5 years	**23**	2.17 ± 4.59			5.74 ± 4.15			21	91.3	2	8.77			1	4.3	22	95.7		
From 5 –10 years	**10**	1.60 ± 3.98	H=	0.833	6.60 ± 2.67	H=	0.852	7	70.0	3	30.0	2.517	^{FE}p=	3	30.0	7	70.0	4.038	^{FE}p=
More than10 years	**8**	2.50 ± 3.16	0.366		5.75 ± 2.92	0.320		7	87.5	1	12.5		0.241	1	12.5	7	87.5		0.086
Hospital admission																			
Voluntary	**19**	3.37 ± 4.37	U=	0.016*	8.42 ± 1.84	U=	<0.001*	15	78.9	4	21.1	1.168	^{FE}p=	2	10.5	17	89.5	0.092	^{FE}p=
Involuntary	**22**	1.0 ± 3.64	119.0*		3.82 ± 3.32	33.500*		20	90.9	2	9.1		0.390	3	13.6	19	86.4		1.000

U: Mann Whitney test H: H for **Kruskal Wallis test** χ^2: **Chi square test** **FET: Fisher Exact test** *: Statistically significant at $p \leq 0.05$

p: p value for comparison between **the studied categories**

Table (5): Correlation between total scores of drug attitude and condition specific knowledge among the studied patients pre\ post program intervention (n = 41)

	Pre		Post	
	r	p	R	P
Attitude vs. knowledge	0.417*	<0.007*	0.626*	<0.001*

r_s: Spearman coefficient
*: Statistically significant at $p \leq 0.05$

5. Discussion

Psychoeducation program provides patients with the knowledge, skills, and tactics required to overcome the symptoms of their illness. Motivational interview techniques, therefore, encourage individuals to excessively focus on the management of diseases and adherence to drug attitudes and improve patient-specific knowledge levels. Motivation is the main contributing factor to psychosocial management outcomes, and this is increasingly identified as a significant goal of behavioral interventions **(Pinar, 2022).**

Psycho-educational programs have been created to assist patients have a 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).** Therefore, the current study aimed to evaluate the effect of a Psycho-educational Program Based on Motivational Interview Techniques on Drug Attitude and condition-specific Knowledge among schizophrenic patients. Using a pretest-posttest quasi-experimental design, the study examined whether the studied sample enhanced Drug Attitude and condition-specific Knowledge level.

Concerning the distribution of patients studied before and after the program's implementation, the current research revealed that over two-thirds of participants exhibited a negative attitude toward medication for schizophrenia before the program. This figure decreased to one-third following the program's application. Furthermore, more than three-quarters of the sample demonstrated a significant increase in positive attitudes toward medication after the program was implemented. That's because effective interventions employ a blend of educational and behavioral strategies. By integrating educational sessions that cover diagnosis, symptoms, and medication alongside personalized training provided by skilled nurses, medication adherence can be significantly enhanced **(Loots et al., 2021).** This finding is corroborated by a systematic review titled "Interventions to Improve Medication Adherence in People with Schizophrenia," which reported that various studies demonstrated significant improvements in medication adherence through interventions based on motivational interviewing, typically conducted over 5 to 8 sessions within a 6 to 18-month timeframe**(Cahaya et al., 2022).** Conversely, Motivational interviewing did not improve medication adherence among previously nonadherent

patients who had relapsed into psychosis, according to another study.**(Barkhof et al., 2013).**

The current study's findings showed that over two-thirds of patients possessed a limited understanding of schizophrenia before the program. Following the implementation of the program, this figure decreased to less than one-third. Additionally, more than three-quarters of the sample exhibited a significant increase in their degrees of specific knowledge after the program was executed. This may be attributed to the association between the level of knowledge about schizophrenia and various outcomes, including treatment adherence, self-stigma, and quality of life (**Alhadidi et al., 2021)**. These findings align with the research conducted by **White et al. (2014),** which reported a statistically significant increase in knowledge immediately following the post-workshop session. Participants expressed satisfaction with the content and demonstrated a willingness to incorporate the insights gained from the session into their practice. Another study found that adherence therapy based on motivational interviewing can effectively enhance insight into illness and/or treatment among individuals with schizophrenia over a medium-term follow-up period of six months **(Chien et al., 2015)**. Conversely, a quasi-experimental study conducted by **(Matsuda & Kohno, 2016)** aimed at evaluating the clinical effectiveness of a nursing psychoeducation program for patients with schizophrenia found that the program did not enhance their knowledge regarding their illnesses.

The findings of the current study indicated females' genders demonstrated a significant enhancement in their drug attitudes following the psychoeducational program grounded in motivational interviewing. This may be attributed to the fact that, compared to female patients, male patients are more likely to be unemployed, live alone, possess weaker social networks, exhibit more severe negative symptoms, experience less severe positive symptoms, and demonstrate poorer functional outcomes **(Zhou et al., 2016).**

Moreover, this study demonstrated a significant positive relationship between age and the total score of drug attitudes following the implementation of the program. Specifically, patients aged 30 to 50 exhibited notable improvement in their drug attitudes after the program. This may be attributed to the fact that The rising use of medications among older adults, driven by the high prevalence of non-communicable diseases in this demographic, necessitates that healthcare professionals consider access to treatment when promoting adherence(**Facchini & Mengue, 2013)**. This finding is corroborated by a meta-analysis encompassing five cross-sectional studi8es and fifteen cohort studies, involving a total sample of 342,408 patients on antipsychotic medication. The analysis identified specific personal characteristics, such as being over 50 years old or under 25 years old, as potential risk factors for medication adherence**(Guo et al., 2023).**

The level of education is a significant factor in an individual's life, closely linked to cognitive functioning and medication adherence **(Wen & Liu, 2023).** This study found that schizophrenic patients with higher educational levels exhibited positive drug attitudes following the implementation of the psychoeducational program based on motivational interviewing, showing statistically significant relationships. This may be due to individuals with low educational levels who tend to have a limited understanding of treatment frameworks and reduced access to healthcare information, which negatively impacts their medication adherence. Furthermore, they often have lower incomes, diminished access to

healthcare resources, poorer living conditions, and are more likely to face stressful life events **(Wen & Liu, 2023)**. This was in agreement with **Mahaya et al., (2012**), who found a relation between educational level and level of adherence. In the same context, another study by **Ebtsam et al. (2018),** titled "Drug Attitude and Medication Adherence Behavior among Schizophrenic Patients," revealed a significant positive relationship between drug attitudes and educational levels.

This study showed a significant positive relationship between marital status and specific knowledge degrees following the implementation of a psychoeducational program based on motivational interviewing. In a similar vein, A community-based cross-sectional study conducted in China found that marital status serves as an important predictor of attitudes toward long-acting injectable antipsychotics**(Sun et al., 2022)**. In a similar context, a study by **Markowitz (2013)** found a significant positive correlation between marital status and attitudes toward antipsychotic drug therapy among patients with schizophrenia. This result contradicts the findings **of Ebtsam et al. (2018),** who reported a negative correlation between drug attitudes, medication adherence behavior, and marital status.

This study demonstrated a significant positive relationship between educational levels and specific knowledge degrees following the implementation of the program. This result is supported by **Alhadidi et al. (2021)** in their study titled "Knowledge about Schizophrenia, Insight into Illness, and Internalized Stigma and Their Associated Factors Among People Diagnosed with Schizophrenia in a Long-Term Care Facility," which reported a significant positive correlation between total scores on the Knowledge About Schizophrenia questionnaire and educational level. Additionally, **Ali et al. (2022)** found a positive relationship between educational level and the knowledge of patients diagnosed with schizophrenia. A recent study focused on assessing the knowledge, attitudes, and practices (KAP) regarding drug use among residents in western China, along with the factors influencing these elements, found that a low level of education was a significant factor contributing to the residents' insufficient drug knowledge**(Shi et al., 2024)** .

The current study found that patients with schizophrenia who had a shorter duration of illness demonstrated an improvement in specific knowledge levels following the implementation of the psychoeducational program based on motivational interviewing. The result was supported by a naturalistic study that investigated the relationship between the predominant clinical dimension, duration of illness, and acute antipsychotic response in a sample of schizophrenic inpatients. This study found that a longer duration of illness, along with more severe cognitive impairment, predicts treatment non-response, indicating worse outcomes for chronic patients with predominant cognitive symptoms **(Buoli et al., 2012).**

Moreover, this study revealed a significant positive correlation between drug attitudes and condition-specific knowledge levels among the patients studied before and after the program's implementation. This is because individuals with low levels of insight may be resistant to their treatment, rejecting psychiatric diagnoses, symptoms of illness, and appropriate interventions **(Ertem & Duman, 2019).** A Cross-Sectional Survey study concluded that increased knowledge about the therapeutic effects of medications may lead to improved attitudes toward pharmacotherapy among patients with schizophrenia. This

finding has significant implications for managing this typically chronic mental condition, which necessitates long-term antipsychotic treatment to maintain stability**(Nagai & Yoshida, 2020)**. Similarly, A study conducted at Ayder Referral Hospital and Mekelle Hospital in the Tigray region of Northern Ethiopia sought to identify factors influencing medication adherence among patients with schizophrenia. The findings indicated that a key factor positively associated with improved adherence was the patients' awareness of their illness **(Eticha et al., 2015).**

On the contrary, A study titled "Patients' Knowledge about Prescribed Antipsychotics and Medication Adherence in Schizophrenia" found no significant differences in medication possession ratios between individuals who correctly answered questions regarding the effects, types, and neurotransmitter implications of their prescribed antipsychotics and those who did not. The authors concluded that knowing antipsychotic medications does not necessarily correlate with improved medication adherence among patients with schizophrenia **(Nagai et al., 2017)**

6. Conclusion

The findings of the current study indicate that a psychoeducational program utilizing motivational interviewing techniques had a beneficial impact on the drug attitudes and condition-specific knowledge of patients with schizophrenia, thereby supporting the study's hypothesis. Additionally, a significant positive correlation was observed between drug attitudes and condition-specific knowledge levels among the patients both prior to and following the implementation of the program.

7. Recommendations

The study's conclusions lead to the formulation of the following recommendations:

7.1. Considering these findings, both psychiatric patients and healthcare institutions stand to gain from enhanced drug attitudes and condition-specific knowledge through the implementation of motivational interviewing techniques, beginning at the time of a patient's initial registration in a psychiatric outpatient clinic.

7.2. Continuous in-service training programs about counseling need to be implemented to provide basic necessary skills.

7.3 Apply motivational interviewing sessions in psychiatric hospitals to provide a better prognosis for schizophrenic patients.

7.4 Further research to confirm these - still preliminary -findings is needed. Even if MI would only result in positive effects for patients with schizophrenia, it could mean a lot in terms of lessening personal suffering and decreasing the burden on families and society.

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الملخص العربي

العنوان

تأثير برنامج التثقيف النفسي المبنى على تقنيات المقابلة التحفيزية على الاتجاه نحو الدواء والمعرفة الخاصة بالحالة لدى مرضى الفصام

مقدمه: يعاني المرضى الذين تم تشخيصهم بالفصام من صعوبات في التعامل مع مواقفهم تجاه الأدوية والمعرفة الخاصة بالحالة. يساعد برنامج تعليمي نفسي قائم على المقابلات التحفيزية المرضى على التعافي من خلال تعزيز مواقفهم المتعلقة بالأدوية ومعرفتهم الخاصة بحالتهم.

الهدف: هدفت هذه الدراسة لتحديد تأثير برنامج التثقيف النفسي المبنى على تقنيات المقابلة التحفيزية على الاتجاه نحو الدواء والمعرفة الخاصة بالحالة لدى مرضى الفصام.

التصميم: تم استخدام تصميم بحث شبه تجريبي مع عينة مكونه من 41 مريضا بالغا مصاب بمرض الفصام أجريت الدراسة في جناح داخلي للأمراض النفسية في مستشفى للأمراض النفسية والصحة العقلية في مدينة بنها. تم استخدام ثلاث أدوات لجمع البيانات 1- استبيان لجمع البيانات الشخصية والديموغرافية والسريرية للمرضى، ، و2-استبيان المعرفة بالفصام*(KASQ)* و3-استبيان الاتجاه نحو الادوية *(DAI)*

النتائج: أظهرت النتائج الرئيسية للدراسة وجود فروق ذات دلالة إحصائية عالية بين فترة ما قبل وبعد تطبيق البرنامج فيما يتعلق بموقف المريض من الأدوية ودرجة المعرفة الخاصة بالحالة. وهناك ارتباط إيجابي ذي دلالة إحصائية بين الدرجات الإجمالية لموقف المريض من الأدوية ومستوى المعرفة الخاصة بالحالة بين المرضى المدروسين قبل تنفيذ البرنامج.

الخلاصة : بناءً على نتائج الدراسة الحالية، نستنتج أن البرنامج التثقيف النفسي المبنى على تقنيات المقابلة التحفيزية كان له تأثير إيجابي على مواقف المريض المصاب بالفصام من الأدوية ودرجة المعرفة الخاصة بالحالة.

التوصيات: تعد البرامج النفسية التعليمية المستمرة التي تركز على الإرشاد ضرورية لتزويد المرضى بالمعرفة الأساسية وتنفيذ تقنيات المقابلة التحفيزية في المستشفيات النفسية. يهدف هذا النهج إلى تعزيز فهم المرضى لأمراضهم ومواقفهم تجاه الأدوية، مما يؤدي في النهاية إلى تقليل معدلات الانتكاس وتكرار الاستشفاء