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# Effectiveness of Psychiatric Nursing Intervention on Adherence to Medications and Quality of Life of Schizophrenic Patients

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**Abstract:** Medication adherence is a key determinant of the success of pharmacotherapy in patients with schizophrenia and can have an impact on the quality of life. The aim of the study was to evaluate the effect of a psychiatric nursing intervention on adherence to medications and quality of life of schizophrenic patients. A Quasi-experimental design (one group pretest-posttest) was used. The study was conducted at Outpatient Clinics of The Psychiatric and Addiction Treatment Hospital in MIT-Khalaf at Menoufia, Egypt. Non-probability sampling of 50 schizophrenic patients from the previously mentioned setting was recruited. Tools of the study include a structured interview questionnaire, the Medication Adherence Rating Scale and The world health organization quality of life (WHOQOL-BRIEF) scale. The study illustrated that, there was a statistically significant improvement in attitude toward medication and quality of life of patients with schizophrenia after implementation of a psychiatric nursing intervention. In conclusion: the psychiatric nursing intervention was effective in improvement of medication adherence and quality of life of schizophrenic patients. So, it was recommended that, the psychiatric hospital should utilize educational programs to all psychiatric inpatients and outpatients to improve their awareness about their disorder and their medications to improve their adherence and quality of life.

**Keywords:** Medication Adherence, Quality of Life, Schizophrenia

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## 1. Introduction

The significant functional impairments are present in chronic illness such as schizophrenia. Successful treatment in psychiatric patients require long lasting and sometimes lifelong adherence to medications which can influence their quality of life [1]. Medication non-adherence denotes the patient doesn't take the medication or discontinues a medication before completing the therapy, or change the drug dosage and timetable [2]. When the patients do not adhere to their medications this will increase the risk of relapses, hospitalization rate and costs [3].

Lacking of an atmosphere that supports improvement, treatment may not be valuable. In today's society, it is undesirable that schizophrenic patients are 6–7 times more likely to be without a job than the other people, and only 10%–20% are in competitive job. [4]. Although antipsychotic treatment takes a long time may substantially decrease the

risk of relapse in the stable phase of schizophrenia [5], partial or total non-adherence to medication is a ubiquitous clinical problem [6].

Across the world, the prevalence of schizophrenia was 1% of the general population. Schizophrenia is connected with delusions, impairment in occupational, social functioning in addition to social stigma [7]. A lot of negative effects are related to patients and their families misunderstandings about schizophrenia. For instance, a family with a member with schizophrenia sometimes prefers to keep their patient at home instead of working, and engaging in social relationships in the community, this, restricts their quality of life. Actuality when the patient is effectively treated, and have a vocation, their family burden will be diminished [8].

Long-term antipsychotic medication is effective for schizophrenic patients to deal with the symptom and reduce

the risk of relapse [9]. Non-adherence, occur when the patient does not initiate the treatment, stops taking it before completing the treatment, or does not follow the treatment instructions [10]. The first step to improving the medication adherence is helping the patient recognize to the barriers of adherence [11]. The causes of non-adherence include the patient factors, treatment factors, and socio-economic factors. The patient factors as fear of adverse effects, physical and psychiatric conditions, forgetfulness, external distractions, misunderstanding instructions, lack of insight and lack of information about disorders. Treatment factors as numerous medications, enduring symptoms, partial or no efficacy. Socio-economic factors as insufficient income, transportation, homelessness, and stigma of mental illness. Other barriers may include the health care team treating the patient who does not help the patients acquire the skills that help them to adhere to their treatment [12].

The Quality of life is the general well-being and satisfaction of negative and positive sides of life, including health, relatives, education, work, possessions, spiritual beliefs, economics and the milieu [13]. The quality of life of schizophrenic patients has an influence on their emotional state, personality type, adaptation and treatment outcome [14].

Major elements of the treatment plan of schizophrenic patients are education about mental and physical health, psychosocial skills training and adherence training which can motivate them to make rational decisions about their treatment. Therefore the psychiatric nurse should educate their patients about their medication, side effects, and determine if the patient adheres to their medications or not [15]. Some researchers reported that the barriers to improving adherence were difficulty in accessing mental ill patients and ineffective communication between patients and health team [16]. Psycho-education to the patient and their caregivers about the illness, medications, adverse effects, and relapse prevention has benefits to the patients and their families. Regarding the patients, psycho-education can improve their knowledge, learn how to adapt with symptoms and develop behaviors that help them move toward recovery. Regarding the family, reducing the family burden and improve the quality of life [17]. Therefore; the purpose of the current study is to evaluate the effect of a psychiatric nursing intervention on adherence to medications and quality of life of schizophrenic patients'.

#### *Significance of the study*

Schizophrenia is a severe mental disorder which influences more than 21 million individuals overall [18]. It requires constant use with antipsychotic drugs in combine with psychosocial treatment to diminish the danger of relapse [19]. Psychotic symptoms, cognitive and functional impairments are the major characteristics of schizophrenia which can affect patient's quality of life [20]. The rate of non-adherence ranged between thirty percent and sixty-five percent among severe mentally ill patients [21]. Fifty percent of schizophrenic patients didn't adhere to their medication regimen [10]. In Egypt, non-adherence rates increased to tree

quarter among schizophrenic patients [22].

Non - adherence with medications leads to increasing the rate of re-hospitalizations and visits to the emergency department. The cost of re-hospitalizations and non-adherence per year were (\$100 billion, \$290 billion) respectively [23]. Although multi-dimensions treatment including medication, cognitive behavioral therapy, education, and exercise can improve the symptoms and functioning, most patients still have impaired quality of life including affective, emotional, and social dimensions" [24]. Therefore, interventions that solely target symptoms are not sufficient, however a lot of holistic view is essential for which patients' quality of life is a vital concern [25].

## **2. Subjects and Methods**

### **2.1. The Purpose of the Study**

The purpose of the study is to evaluate the effect of psychiatric nursing intervention on adherence to medications and quality of life of schizophrenic patients'

### **2.2. Research Hypothesis**

- a. Psychiatric nursing intervention may have an influence on the patient attitude toward medication.
- b. Psychiatric nursing intervention may have an influence on the patient quality of life.

### **2.3. Design**

Quasi-experimental design (one group pre test post test design) was used

### **2.4. Setting**

The study was conducted at Outpatient Clinics of The Psychiatric and Addiction Treatment Hospital in Mit-Khalf at Menoufia, Egypt.

### **2.5. Subjects**

Non probability sampling (Purposive sampling) all schizophrenic patients who registered in the follow up sheets of the out patient clinic in the chosen sitting and fulfill the inclusion criteria was selected. The participants were 50 patients.

### **2.6. The Inclusion Criteria**

- Patient with schizophrenia
- Being an adult aged 18 or older
- Who agree to participate in the study.
- Patient who have insight

### **2.7. Exclusion Criteria**

- a. Patient who have other psychiatric illnesses
- b. Patients diagnosed with brain dysfunction or cognitive impairment and receive electroconvulsive therapy
- c. Patient who does not have insight

## 2.8. Tools of the Study

*The tools consisted of the following:*

Tool 1: Structured interview questionnaire:

This tool was developed and used by the researchers based on the review of the relevant literature. It included data related to socio-demographic characteristics and clinical data: such as age, sex, occupation, level of education and family history of mental illness, type of schizophrenia.

Tool (2): "The Medication Adherence Rating Scale (MARS)"

It was originally developed and validated by [26] to measure of medication adherence specifically in psychiatric patients. It was designed to assess both the patients' attitude towards medication and also actual medication-taking behavior. It was translated into Arabic and validated by the researchers. It consists of ten questions; (questions 1- 4), represent medication adherence behavior, (questions 5-8) represent attitude toward taking medication and (questions 9-10) represent negative side-effects and attitudes to psychotropic medication'. Each question should be answered with a 'YES' or 'NO' response. A response consistent with non-adherence is coded as zero, whereas a response consistent with adherence is coded as 1. For questions 1-6 and 9-10 an 'NO' response is indicative of adherence and therefore should be coded as 1; in contrast for questions 7-8 a 'YES' response is indicative of adherence and should be coded as 1. Total scores range from zero to ten, with a higher score indicating better attitudes and behavior towards positive adherence"

Tool (3): "The world health organization quality of life (WHOQOL-BRIEF)"

This scale was developed and validated by Skevington et al., [27]. It was translated into Arabic and validated by the researchers.

WHOQOL-BRIEF is a self-report questionnaire that contains 26 items and classifies four domains: seven items for physical domain (3, 4, 10, 15, 16, 17, 18), six for psychological (5, 6, 7, 11,19, 26),three for social relations (20, 21, 22), eight items for environmental domain (8, 9, 12, 13, 14, 23, 24, 25) and items one and two measure overall quality of life and general health. It is a five-point Likert scale from one to five. The mean score for each domain is calculated and then multiplied by 4 in order to transform the domain score into a scaled score, with a higher score indicating a higher QOL. When transformed, each domain score is then comparable with the scores used in the original WHOQOL-BRIEF.

## 2.9. Procedure for Data Collection

- An authorized consent was obtained by the researcher from the hospital administrator.
- Reviewing literature related to schizophrenia, pharmacotherapy, and stress management was carried out.
- Validity of the tools: Before starting the data collection, tool was translated into arabic and tested for their content validity by a group of five experts in

psychiatric nursing and medicine, to ascertain relevance and completeness and the required modification was carried out accordingly.

- Reliability of the tools: Test retest reliability was done and the two tools proved to be strongly reliable ( $r = 0.7221$ ) for tool one and ( $r = 0.8222$ ) for tool two.
- Pilot study was carried out during June 2014 to test the applicability of tools and to determine the time needed to fill the study and excluded from it.
- Ethical considerations: at the initial interview each patient was informed about the purpose and benefits of the study, and informed that their participation is voluntary, and confidentiality, privacy, and anonymity of the patients were assured. finally, patients' formal consent for participations has been obtained.
- Field work: The tools used in the study were administered by the researcher and fitting the sheets took about 20-30 minutes. Data collected in the period from July to September 2015 at three days/week from 10 AM to 12 AM. Each 5 patients are considered as a group (each group interviewed three per week for the first two weeks), so each group took four educational sessions and two sessions for the practical part as through demonstration &re-demonstration under researchers' supervision and then the patients apply stress management techniques alone. Each interview lasted for 30- 60 minutes, depending on the response of patients. The post test was carried out after one month of completing the session
- Intervention: The program consisted of 8 sessions. Content included knowledge about schizophrenia (symptoms, causes, and treatment); medication and side effects, symptom management, signs and symptoms of relapse, and stress management. The first and last session the patients completed the questionnaires before (pretest) and after the intervention (post-test).

## 2.10. Data Processing and Analysis

"Statistical Package for Social Science (SPSS) version 20 was used. The following statistical measures were used A) - Descriptive measures as numbers (No), percentages (%), mean and stander deviation. B)-Analytical statistics as McNemar's test and Pearson correlation. P value  $>0.05$  was considered statistically non-significant, and  $<0.001$  was considered statistically highly significant"

## 2.11. Limitations

The study was implemented in only one site and the small sample size because of most schizophrenic patients doesn't follow up at an outpatient clinic and their caregivers only come to take their medications.

## 3. Results

Table 1: reveals that the age ranged from (23-55) years

old, 80 % are males, 60% are from rural area, 40% have primary education, 50 % are single, 76 % of them are unemployed, 80% have not enough income, 66% have negative family history, 74% have the previous history of admission and 80 % of them their duration of the disease from 5 to 10 years

Table 2: shows that 54 % of participants have a negative attitude toward medication adherence before the intervention and 94 % of them have a positive attitude of medication adherence after the intervention with a highly statistically significant difference. This means that the medication adherence is improved after the nursing intervention

Table 3: illustrate that 94 % of the participants have positive attitude of medication adherence in post test and 100 % in follow up test with non significant difference. This indicates the maintenance of the improvement in follow up test

Table 4: clarifies that there is a highly significant difference between pre-test and follow up test in medication

adherence and reveals that all the participants in follow up test have positive attitude toward medication adherence compared to 46 % in pre-test.

Figure 1: represents that the domains of the quality of life in the post-test are higher than in pre -test. This means that the quality of life are improved post the intervention

Figure 2: reflects that the mean score of the quality of life in the post-test and follow up test are nearly equal. This means that the improvement occurred after the intervention is maintained.

Figure 3: illustrates that the quality of life in follow up test is higher than the quality of life in the pre-test.

Table 5: shows a highly statistically significant negative correlation between age and quality of life pre and post the intervention. This means that when the patient's age increased the quality of life decreased.

Table 6: reveals that there is no significant co -relation between quality of life and medication adherence pre, post and follow up

**Table 1.** Percentage distribution of the patients according to socio demographic data (N=50).

Socio demographic characteristics	No.	%
Age / years ( $\bar{X} \pm SD$ )	34.0±9.38	
Range	23 - 55	
Gender		
Male	40	80
Female	10	20
Residence:		
Urban	20	40
Rural	30	60
Level of education:		
Illiterate	8	16
Primary education	20	40
Secondary education	15	30
University	7	14
Marital state:		
Single	25	50
Married	17	34
Widow	1	2
Divorced	7	14
Occupation :		
Worker	12	24
Not worker	38	76
Income /month		
Enough	6	20
Not enough	24	80
Family history		
Positive	17	34
Negative	33	66
Previous admission		
Yes	37	74
No	13	26
Duration of disease:		
Less than 5 years	6	12
5 – 10	40	80.0
More than 10	4	8

**Table 2.** Number and percent distribution of medication adherence pre and post intervention.

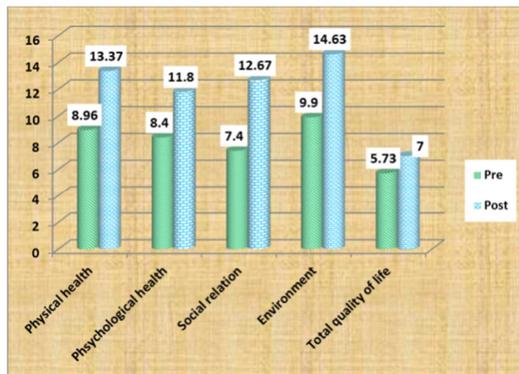
Studied variables	Pre		Post		McNemar P value
	No.	%	No.	%	
Medication adherence					
• Positive attitude	23	46	47	94	0.001
• Negative attitude	27	54	3	6	

**Table 3.** Number and percent distribution of medication adherence post intervention and follow up.

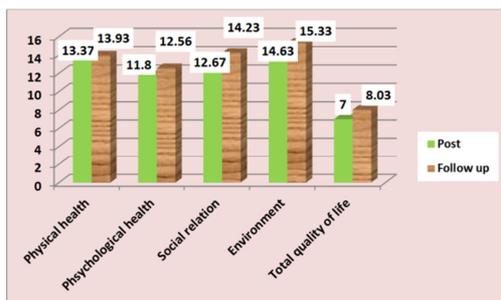
Studied variables	Post		Follow up		McNemar P value
	No.	%	No.	%	
Medication adherence					
• Positive attitude	47	94	50	100	0.512
• Negative attitude	3	6	0	0.0	

**Table 4.** Number and percent distribution of medication adherence pre and follow up test.

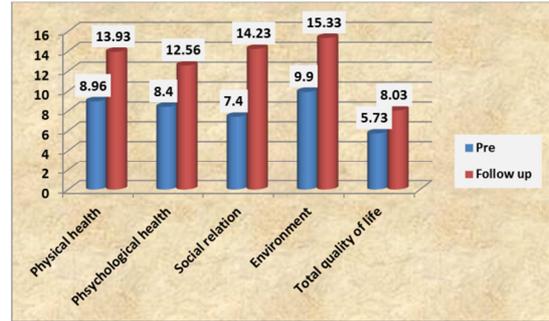
Studied variables	Pre		Follow up		McNemar P value
	No.	%	No.	%	
Medication adherence					
• Positive attitude	23	46	50	100	0.001
• Negative attitude	27	54	0	0.0	



**Figure 1.** The domains of quality of life in pre and post test.



**Figure 2.** The domains of quality of life in post and follow up test.



**Figure 3.** The domains of quality of life in pre and follow up test.

**Table 5.** Correlation between age and quality of life pre and post.

Studied variable	Quality of life			
	Pre test		Post test	
	r	P value	r	P value
Age	-0.647	0.001	-0.660	0.001

**Table 6.** Correlation between quality of life and medication adherence pre, post and follow up.

Studied variable	Medication adherence					
	Pre		Post		Follow up	
	r	P value	r	P value	r	P value
Quality of life	0.299	0.109	0.117	0.538	0.313	0.093

## 4. Discussion

The efficacy of the drugs is affected and the risk of relapse will be increased when the psychiatric patients discontinue their medications [28]. Nonadherence to medications happens after discharge, for that reason, follow-up is important to prevent the noncompliance to antipsychotic medication and early detection of signs and symptoms of relapse [29]. The study done by Barkhof et al., [30] revealed that treatment strategy that involved patients can improve medication adherence, symptoms and quality of life of schizophrenic patients, and nursing interventions that contain supervised self-care, action planning, social skill training, relaxation training, and psycho-educative intervention might minimize the associated disability which needs to be validated. Hence the purpose the study was to evaluate the effect of a psychiatric nursing intervention on adherence to medications and quality of life of schizophrenic patients'.

The current study revealed that more than half of the participants had a negative medication adherence before the intervention. From the observation this is might be expected due the treatment team did not give the patient and their family the complete information regarding their medications, including action, dose, route, therapeutic effect and drug side effects, therefore, the caregiver gives the patient the hypnotic drug only and did not give the antipsychotic drugs. This result explained by Lee [12], who reported that psychiatric drugs have a variety of side effects that the patients attempt to evade. The quantity of drugs, side effects, previous family experience, and media may affect patients' attitude toward certain medications. This result was in the line with

Dibonaventura et al., [31], Dassa et al., [32], and Yang et al., [33], who reported that poor medication adherence was found in about half of the schizophrenic patients. Contrasting to Kamali et al., [34], who reported that only lower than one-third of the schizophrenic subjects had poor medication adherence.

Results of the present study showed that a highly statistically significant difference between pre and post-test regarding medication adherence. This result supported by Ran et al., [35] and Chaiyajan et al., [36], their result was nearly similar to the present results and revealed a statistically significant difference in medications compliance. Also Dsouza et al., [37] found that patients who participate in psycho-educational program their compliance of treatment was improved. Moreover, Baruah et al., [38] showed statistically significant difference in drug compliance scores after the intervention between the control and the experimental groups. This might be because of correcting the misunderstanding of the patients and their caregivers; we observed that most of the patients take only the hypnotic drugs and didn't take the antipsychotic medication; from the interview we found that the patients and their caregivers lacking the knowledge about the medications types, action, side effects and precautions to prevent the side effects.

According to the present study, no significant correlation found between quality of life and medication adherence. This result is similar to Puschner et al., [39] who reported that no direct relation found between quality of life and adherence to medication. This result was not consistent with Mitchell et al., [40] who indicated "a significant relationship between medication non-adherence and quality of life scores and illustrated that the patients with poor medication adherence had lower scores on all domains of the quality of life compared with medication adherent subjects, non-adherence to medications may lead to the recurrence or worseness of symptoms and the deterioration of patients' mental health and consequently affect their quality of life". Also Puschner et al., [41] suggested that "medication non-adherence might affect patients' quality of life indirectly via symptom severity and medication side effects". This difference may be due to small sample size.

The present study illustrated that there was a significant difference observed in quality of life between pre and post test; the quality of life score in the post-test was higher than in pre-test. This means that the quality of life was improved after the intervention. The present study results were not in the line with Vreeland et al., [42] who found that "a non-significant difference in the quality of life before and after the intervention". This may be due to improvement in the patient's attitude toward medication, improvement of their knowledge about the medications management which leads to reducing signs, symptoms and the side effects of the drugs. Also, improve the misconceptions about the antipsychotic medications which in turn improve their quality of life.

The current study revealed that there was a highly statistically significant negative correlation between age and

quality of life pre and posts the intervention. This means that when the patient's age increased the quality of life decreased. This result was consistent with Huang et al., [43] who found that "quality of life score among young age patients was higher than old age patients. In contrast, other study carried out by Krok et al., [44] they noted that the quality of life improved among old age patients because they had the abilities to cope with their pain. This is may be due to in the old age, the person is unable to share in social activities which may affect their quality of life.

The current study revealed a highly statistically significant difference between pre-test and follow-up test in medication adherence and revealed that all the studied subjects in follow-up test had a positive attitude toward medication compared to less than half in the pre-test. This result was in the line with Mahler et al., [45] who noted that after one year, there was a significant improvement in medications adherence in the studied group, but the quality of life and symptoms did not improve. Moreover, the results of the current study supported by the world health organization who stated that "adherence will be improved if the health professionals such as psychologists, social workers, or behavioral health therapists were available to help patients develop the skills that will improve adherence" [46]. This result was explained by Sari et al., [47] who illustrated that attitude toward medication will be improved if the patient's and family knowledge about illness and medication improved this helped them understand how medication can control the symptoms and behaviors. Also, this result was consistent with Kulhara et al., [48] who found that patients and families information about schizophrenia and the benefits of successful treatment can be improved through psycho educations. Moreover, Leclerc et al., [49] believed that psycho-educational program can reduce the number of relapses, improve the patient's awareness, and quality of life. This result was contradicted with Cutler et al., [50] reported that medication non-adherence was found in the patients within six months from the start of treatment and occasionally after one month. This is may be due to improving their awareness about medications, side effects, and precautions to prevent relapse.

## 5. Conclusion

It can be concluded from this study that psychiatric nursing intervention was effective in improvement of medication adherence and quality of life of schizophrenic patients.

## Recommendation

The psychiatric hospital should utilize educational programs to all psychiatric inpatients and outpatients and their caregivers to improve their awareness about their disorder and their medications to improve their adherence and quality of life.

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