

## Relationship between Family Caregivers' Attitudes toward Mental Illness and Psychotropic Medications, and Patients' Adherence to Medication Regimen

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### **Abstract**

*Medication nonadherence is a particular challenge in psychiatric nursing practice. Enhancing adherence should involve not only assessing patients' attitudes toward medication, but also their family caregivers' attitudes toward mental illness and its medication regimens.*

**Objective:** *This study aimed to elicit family caregivers' attitudes toward mental illness and psychotropic medications, assess the degree of outpatients' adherence to psychotropic medications regimen, and investigate the relationship between caregivers' attitudes, and patients' adherence. **Setting:** The study was conducted in the outpatient clinic of El-Maamoura Hospital for Psychiatric Medicine, Alexandria. **Subjects:** They comprised 150 family caregivers and 150 of outpatients with psychotic disorders. **Tools:** Four tools were used to collect the data; a Socio-Demographic, Clinical and Caregiving-Related Data Structured Interview Schedule, Family Attitude toward Mental Illness (FAMI) Scale, Family Attitude toward Psychotropic Medications (FAPM) Scale, and Adherence to Psychotropic Medications Structured Interview Schedule. **Results:** It was revealed that the majority of caregivers hold positive attitude towards mental illness, most of them demonstrated positive attitude towards psychotropics, and around two thirds of outpatients were adherents to the medication regimen. Statistically significant relationships were evident between caregivers' attitude toward both mental illness and its medications, and patient's adherence. **Conclusion:** Patients' adherence to medication regimen is significantly related to their family caregivers' attitudes toward mental illness and its medications. **Recommendations:** Incorporating the assessment of family caregivers' attitudes toward mental illness and medications into the routine psychiatric nursing practice, and involving family caregivers while implementing adherence-enhancing interventions are essential.*

**Keywords:** Adherence; Family Caregivers; Attitudes; Mental illness; Psychotropic medications.

### **Introduction**

Remarkable advances in psychopharmacologic agents greatly influence the psychiatric clinical outcomes, and they are now considered the most effective treatment for psychotic disorders<sup>(1)</sup>. Indeed, research evidences indicate that using psychotropic medications as prescribed has major beneficial effects for mental illness sufferers. These medications not only provide patients with a relief from debilitating psychotic symptoms, but also act as a defense against relapse. Patients can then be integrated into the community, and

maintain independent living conditions. In spite of these advantages, many patients do not actually benefit from them due to low adherence to medication regimens<sup>(2-4)</sup>.

Adherence is defined as the patient's willingness and ability to abide by the recommended therapeutic regimen. It is the extent to which the patient is conforming to the prescribed medication dosage, dose scheduling, and method of administration<sup>(5,6)</sup>. Consequently, the patient who follows the treatment schedules, agrees with pharmacotherapeutic recommendations and takes medications exactly as prescribed is considered adherent<sup>(7)</sup>. On the other hand, nonadherence could be defined as a failure

to enter a treatment program, intentional and premature termination of a prescribed medication regimen, and/or incomplete implementation of therapeutic instructions. The patient who is not taking the prescribed medications at all, missing some of the prescribed doses, taking correct doses at incorrect times, taking the incorrect doses, taking medications other than those prescribed, taking medicines of inadvertent combinations, and/or discontinuing the course of medication early can be described as nonadherent<sup>(4,8,9)</sup>.

It was estimated that up to 93% of patients with different psychotic disorders are nonadherents to their medication regimens<sup>(9,10,11)</sup>. Failure to adhere to prescribed medication regimens has been shown to be a significant barrier to effective long-term treatment of chronic psychotic disorders and has a substantial impact on the disease progression. Severe psychopathology, relapse, psychiatric rehospitalization, impaired psychosocial functioning, and increased dependency and disability, are among the serious consequences of nonadherence. These in turn increase the burden on family caregivers, the health care system and the society as well<sup>(7,12,13)</sup>.

Previous studies have investigated several factors which could influence a patient's decision to adhere or not adhere to prescribed psychotropic medications. Patients' attitudes toward both mental illness and psychotropic medications are among these factors<sup>(12,14,15)</sup>. However, this traditional focus on the relationship between patients' adherence to medications and such attitudes is no longer enough. A better understanding of medication adherence should involve not only assessing patients' attitudes toward medication, but also their family caregivers' attitudes toward patient's mental illness and its medication regimens<sup>(7)</sup>. The renewed interest in the role of the family attitudes in the treatment, prognosis and management of their patients' mental disorders is based on the assumption that attitudes and beliefs within the

individual's social environment might play a role in explaining successful help-seeking behaviors, such as medication adherence. At the same time, it was thought that patients whose families are ambivalent about the treatment are at increased risk of medication nonadherence<sup>(16)</sup>. That is why family caregivers' views on this issue warrant more exploration.

In order to study the relationship between family caregivers' attitudes toward mental illness and psychotropics and their patients' adherence, it is crucial to emphasize the role of the family in the care of patients with psychotic disorders. The Egyptian community mental health services are unfortunately inadequate all over the country<sup>(17)</sup>. Thus, caring for patients with mental illness in the community relies heavily on the informal care provided by their family members who are considered to be the "frontline caregivers"<sup>(18)</sup>. On that base, it was acknowledged that the patients' adherence to psychotropics can be improved by working with the family<sup>(7)</sup>. In spite of this and despite the greater involvement of families in the care of patients with different mental illnesses, their attitudes are less likely to be recognized when evaluating patients' adherence to the prescribed medications<sup>(19)</sup>.

Presently, medication nonadherence is a particular challenge in psychiatric nursing practice<sup>(2,3)</sup>. The psychiatric nurse's responsibility for facilitating and enhancing adherence may require an in-depth assessment and understanding of the family caregivers' attitudes toward mental illness and psychotropic medications as well as the relationship of such attitudes with patients' adherence. If this relationship is determined, the adherence process can be improved in two ways. First, when caregivers' negative attitudes are elicited, they can be modified effectively through developing the appropriate family intervention programs. Second, psychiatric nurses can formulate a strong collaboration with caregivers who have positive attitude toward mental illness and medications to be

involved in the patients' care plan to enrich adherence enhancing nursing interventions.

### ***Aims of the Study***

This study aimed to:

- 1- Elicit family caregivers' attitudes toward mental illness and psychotropic medications.
- 2- Assess the degree of adherence to psychotropic medications regimen among outpatients with psychotic disorders.
- 3- Investigate the relationship between such family caregivers' attitudes, and patients' adherence to psychotropic medications regimen.

### **Research Questions:**

- 1- What are family caregivers' attitudes toward mental illness and psychotropic medications?
- 2- What is the degree of adherence to psychotropic medications regimen among outpatients with psychotic disorders?
- 3- What is the relationship between such family caregivers' attitudes, and patients' adherence to psychotropic medications regimen?

### ***Materials and Method***

#### ***Materials***

**Design:** This study followed a descriptive correlational design.

**Setting:** The current study was conducted in the outpatient clinic of El-Maamoura Hospital for Psychiatric Medicine in Alexandria which is affiliated to the Ministry of Health and Population. The hospital serves three governorates, namely; Alexandria, Matrouh and El-Beheira. The psychiatric outpatient clinic provides free treatment services for all patients suffering from mental illness and substance dependence. The services include psychiatric examination, diagnosis,

dispensing necessary medications, follow up and referral of the outpatients to the inpatient wards when necessary. The outpatient clinic works six days a week (Saturday through Thursday), from 9:00 am to 1:00 pm.

**Subjects:** The Epi info 7 program was used to estimate the sample size based on using 10% acceptable error, 99% confidence coefficient, 60% expected frequency and population size of 1440 patients (the number of patients with psychotic disorders regularly visiting the outpatient clinic and accompanied by at least one family caregiver over a period of three months according to the outpatient clinic's records).

The program revealed the minimum sample size to be 144 subjects, so it was decided to recruit:

1. One hundred and fifty family caregivers of those accompanying the outpatients with the following inclusion criteria:
  - 1) Living with the patient in the same household.
  - 2) Currently engaging in physical, emotional, and/or financial caregiving, i.e., being the patient's parent, sibling, spouse and/or son or daughter.
  - 3) Aged 18 years or older.
2. A convenient sample of 150 outpatients diagnosed with psychotic disorders for at least six months, and able to communicate in a coherent and relevant manner.

**Tools:** The following four tools were used to collect the data:

#### **Tool I: A Socio-Demographic, Clinical and Caregiving-Related Data Structured Interview Schedule**

This interview schedule was developed by the researcher to elicit data about the general socio-demographic, clinical and caregiving-related characteristics of both patients and their family caregivers. It includes two parts:

- o **Part (1):** This part covers *patient's socio-demographic* data such as sex, age, marital status and educational level, and *clinical characteristics*, e.g., psychiatric diagnosis, duration of illness, number of previous psychiatric hospitalization, and reason for visiting the outpatient clinic.
- o **Part (2):** This part is concerned with *family caregivers' socio-demographic, clinical and caregiving-related data*. It covers socio-demographic data such as kinship to the patient, sex, age, marital status and educational level, and clinical and caregiving characteristics such as family history of mental illness, duration of caregiving role, and reasons of becoming a caregiver.

### **Tool II: Family Attitude toward Mental Illness (FAMI) Scale**

The FAMI scale was constructed by the researcher after a thorough review of the related literature to elicit families' attitude toward mental illness<sup>(18,20-22)</sup>. It comprises 20 statements such as "patients with mental illness are usually unpredictable and dangerous", "they can become productive members of the society", and "mental illness is an illness like any other physical illness".

Family caregivers are asked to rate their responses to the statements on a three-point Likert scale, with 0 indicating "no", 1 indicating "neutral/do not know" and 2 indicating "yes". The total score ranges from 0 to 40, with higher scores reflecting a more positive attitude toward mental illness. A score of 0-20 means that the family caregiver has a negative attitude, while a score of 21-40 reflects an inclination towards positive attitude mental illness.

### **Tool III: Family Attitude toward Psychotropic Medications (FAPM) Scale**

This scale was designed by the researcher after an extensive review of the literature to capture families' attitude toward psychotropic medications through gaining some understanding of what they think about medications which their relative patients are taking<sup>(7,11,23-25)</sup>. The FAPM

scale has 20 statements rated on a three-point Likert scale, with 0 denoting "disagree", 1 denoting "neutral/do not know" and 2 denoting "agree".

Statements, such as "continued taking psychotropic medications can minimize patient's relapse", "medications may cause addiction", and "long-term use of medications can be dangerous", are examples of the scale content.

The total score for the scale ranges from 0 to 40, with higher scores indicating more positive attitude toward psychotropic medications. Family caregivers who score from 0 to 20 are considered as having a negative attitude, while those caregivers with a score ranging from 21 to 40 are considered as having a positive attitude toward psychotropic medications.

### **Tool IV: Adherence to Psychotropic Medications Structured Interview Schedule**

For the purpose of the current study, this tool was developed by the researcher after reviewing the related literature<sup>(8-10,12,15)</sup> to assess patients' adherence to psychotropic medication regimens.

Patients are asked through an open ended question to describe the medication taking behavior during the last month. The judgment is made based on the previous adherence-related studies<sup>(26-29)</sup>. Accordingly,

- Patients are considered as medication adherents if they *take all prescribed doses of medications regularly at the correct time by themselves or when reminded by the caregiver and/or accept and do not resist when asked to take medications.*
- Patients are considered as medication nonadherents if they *refuse all or only some types of oral or depot medications, take the medication only when it is compulsory, require persuasion to accept the medication, increase or decrease the prescribed doses and frequency of medication*

*regimen by themselves and/or take it occasionally for specific symptoms and then discontinue the prescribed regimen by themselves when symptoms relieve.*

Classification of patients as either adherents or nonadherents to their medication regimens is done on the basis of both patients' and their family caregivers' self-report descriptions for the patient's adherence over a period of the past month. If the patient's and family caregiver's descriptions are inconsistent, only family caregivers' reports are taken into account.

### **Method**

- Official written permissions to conduct the study were obtained from the responsible authorities. These included the General Secretariat for Mental Health and Population in Cairo, and the director of El-Maamoura Hospital for Psychiatric Medicine in Alexandria.
- Tools I, II, III and IV were developed by the researcher after a careful reviewing of the related literature.
- A jury composed of five experts in the fields of psychiatric nursing and medicine was consulted to examine the content validity of the study tools. All tools proved to be valid.
- A pilot study was carried out on 15 patients of those attending the outpatient clinic and 15 family caregivers of those patients who meet the criteria of the study sample. According to the results of the pilot study, few modifications were done in tools II and III.
- Reliabilities of tools II, III and IV were tested using Cronbach's alpha coefficient method on a sample of 15 outpatients who attending the clinic and 15 related family caregivers who meet the criteria of the study sample. Tools II, III and IV proved to be reliable ( $\alpha=0.88, 0.91$  and  $0.86$  respectively).
- Outpatients' medical charts were reviewed to identify patients who meet

the inclusion criteria and to check their socio-demographic and clinical data using tool I: part (1).

- All available patients diagnosed with psychotic disorders and their accompanying family caregivers who meet the inclusion criteria were recruited as the study subjects.
- Patients were interviewed in the outpatient clinic to assess their adherence to medication regimen using tool IV, and to complete their socio-demographic and clinical characteristics using tool I: part (1). These data were double checked with data collected from the patients' medical charts.
- Family caregivers who accompanied the recruited patients were interviewed to explore their socio-demographic and clinical characteristics and caregiving process using tool I: part (2), to elicit their attitudes toward both mental illness and psychotropic medications using tools II and III respectively, and to double check their patients' level of adherence using tool IV.

### **Ethical considerations:**

- Informed written consent for voluntary participation in the study was obtained from the recruited patients and their family caregivers after explaining the aim of the study.
- Subjects' privacy and anonymity were assured and respected.
- Data confidentiality was considered and respected.

### **Statistical Analysis**

- Collected data were coded and transferred into specially designed formats suitable for computer feeding.
- Data entry, checking and verification were carried out. Frequency analysis, cross-tabulation and manual revision were all used to detect any errors.

- The Statistical Package for Social Sciences (SPSS) program, version 20.0 was utilized for both data presentation and statistical analysis of the results.
- The following statistical measures were used:
  - A. For descriptive presentations frequency, percentage, minimum, maximum, arithmetic mean, and standard deviation were used.
  - B. Fisher's Exact Test (FET) was used to test the association between variables when expected frequency >5 exceeding 20% of cells.
- Levels of significance selected for this study were p equal to or less than 0.05 and 0.001.

## Results

**Table (1)** presents the distribution of the studied family caregivers according to their socio-demographic characteristics. Caregivers were the patient's parents (34.0%), siblings (32.0%), spouses (26.7%), or sons and daughters (7.3%). It was noted that 71.3% of the patients' caregivers were females. Their age ranged between 18 and 66 years, with a mean age of  $42.13 \pm 13.35$  years. The results reveal that the highest percentage of caregivers (28.0%) aged between 18 to less than 30 years, while the lowest percentage of caregivers (8.7%) aged between 60 years and 66 years. It was also found that 70.0% of caregivers were married, 17.3% were single, and 12.7% were divorced or widowers.

As for the caregivers' educational level, 45.3% of them had preparatory education, followed by those who were illiterate (24.0%), and only 6.0% had university education. The greatest percentage of patients' caregivers (60.7%) was housewives. More than one half of the caregivers (56.0%) reported that their income was insufficient.

**Table (2)** shows the distribution of the studied family caregivers according to their clinical and caregiving characteristics. Concerning the family history of mental illness, around one half of caregivers (51.3%) reported that they had positive family history of mental illness.

Regarding the action taken on the first appearance of patient's psychiatric symptoms, 70.0% of caregivers stated that they sought psychiatric help from a private psychiatrist or a psychiatric hospital, while 30.0% reported that they sought help from religious and traditional healers.

The results indicate that the duration of caregiving or being the only caregiver ranged between 8 months and 30 years, with a mean of  $8.42 \pm 6.19$  years. The highest percentage of subjects (32.7%) had a duration of caregiving for a year or less, while 7.3% of subjects were the only patient's caregiver for 20 years or more.

A percentage of 56.0% of the studied caregivers reported that they became carers because they wanted to help and support a loved one and 22.7% did that because of having a sense of responsibility and obligation to their ill relative, whereas 21.3% became caregivers just because of living with the patient in the same house.

The table also shows that 17.3% of caregivers were suffering from psychological problems, e.g., anxiety, insomnia and/or depressed mood. Out of them, 61.5% sought professional psychiatric help. This help was obtained from a psychiatrist (87.5%) and/or a psychiatric nurse (25.0%). Most of these caregivers (88.5%) received psychotropic medications (prescribed or self-medication) to manage their own psychological problems.

**Table (3)** presents the distribution of the studied patients according to their socio-demographic characteristics. It was noted that 68.7% of the studied patients were males. Patients' age ranged between 20 and 72 years, with a mean age of  $37.75 \pm 12.09$  years. Those aged 20 years to less than 30 years constituted more than one quarter

(28.7%), while patients aged 30 years to less than 40 years constituted more than one third (39.3%) of the studied patients.

As for the marital status, single patients constituted 47.3%, followed by married ones (41.3%), and only 11.4% of patients were divorced or widowers. It was also found that 29.3% of patients had secondary or intermediate education, 24.7% were illiterate, and 21.3% had preparatory education. Those who only read and write and those who had primary education constituted 18.0%, while only 6.7% of patients had university education.

In relation to the occupation, 34.0% of patients were manual workers and 28.0% were housewives. Unemployed patients constituted 20.0% of the studied subjects. The majority of the studied patients (98.0%) were living in urban areas with their caregivers.

**Table (4)** shows the distribution of the studied patients according to their clinical characteristics. It was found that 72.0% of patients were diagnosed with schizophrenia, whereas 28.0% had mood disorders. The duration of illness ranged between 8 months and 35 years, with a mean of  $11.75 \pm 8.61$  years. It was noted that the duration of illness for more than two fifths of patients (41.3%) was less than or equal to 5 years.

Previously hospitalized patients constituted 79.3% of the studied subjects. The number of previous psychiatric hospitalization ranged between 1 and 15 times, with a mean of  $3.82 \pm 3.48$ . The time lapsed since last discharge ranged from 2 months to 8 years, with a mean of  $2.10 \pm 2.19$  years. It was found that 31.1% of the studied patients discharged since less than 6 months. The results also reveal that 62.0% of patients were visiting the outpatient clinic accompanied by caregivers routinely for follow up and dispensing medication, while 38.0% of them were seeking the clinic to manage their psychotic relapse.

The table also lists the prescribed psychotropic medications for the studied

patients as recorded in their medical charts. Typical antipsychotics was the most frequently prescribed group of psychotropic medications (74.0%). From this percentage, oral medications were prescribed for 89.2%, whereas intramuscular injections were prescribed for 42.3% of patients. Mood stabilizers and atypical antipsychotics were prescribed for 37.3% and 28.0% respectively of the studied patients. On the other hand, the least frequent prescriptions were novel and cyclic antidepressants (9.3% and 8.0% respectively).

**Table (5)** shows the distribution of the studied family caregivers according to their attitudes towards mental illness (FAMI) and psychotropic medications (FAPM). It was found that caregivers had a mean score of  $27.15 \pm 3.91$  on FAMI, with the majority of them (93.3%) having positive attitude towards mental illness. On the other hand, caregivers' mean score on FAPM was  $25.30 \pm 3.21$ , with 85.3% demonstrating positive attitude towards psychotropic medications.

**Figure (1)** presents the distribution of the studied patients according to their adherence to medication regimen. A percentage of 64.7% of the outpatients reported that they were adherents, whereas 35.3% of patients reported that they were nonadherents to their medication regimens.

**Table (6)** illustrates the relationship between family caregivers' attitudes toward both mental illness (FAMI) and psychotropic medications (FAPM), and patient's adherence to medication regimen. It was noted that the percentages of caregivers who had positive attitudes on both FAMI and FAPM were the highest among patients who were adherents to medications (68.6% and 70.3% respectively). On the other hand, most of caregivers who had negative attitudes toward mental illness (90.0%) and psychotropic medications (68.2%) their patients reported being nonadherents to medications.

Fisher exact test detected statistically significant relationships between both

FAMI ( $p=0.0004$ ) and FAPM ( $p=0.0012$ ), and patient's medication adherence.

**Table (7)** displays the relationship between family caregivers' attitudes towards mental illness (FAMI) and their attitudes towards psychotropic medications (FAPM). It was noticed that 91.4% of the caregivers who had positive FAMI demonstrated positive FAPM compared to 8.6% for those who hold positive FAMI and negative FAPM, whereas all caregivers (100.0%) with negative FAMI hold negative FAPM. A statistically significant relationship was evident between FAMI and FAPM ( $FET=5.529$ ,  $p=0.023$ ).

### *Discussion*

Numerous studies revealed that adherence to medication regimens is lower among individuals with psychotic disorders<sup>(9,10,13,14,27)</sup>. More specifically, it was reported that the prevalence of outpatients' nonadherence to psychotropic medications ranges from 40.3% to 58.8%<sup>(26,30)</sup>. Yet, the present study revealed that nearly two thirds of the studied outpatients were adherents to their psychotropic medications. The same result was obtained by Edelman (2010) who observed that almost two thirds of the subjects reported full adherence to medication regimens<sup>(31)</sup>.

The present findings also revealed that the majority of the studied family caregivers hold positive attitudes toward both mental illness as measured by FAMI scale and psychotropic medications as measured by FAPM scale. These findings come in accordance with de Sousa et al. (2012) who noted that family caregivers had positive attitude toward the mental illness<sup>(32)</sup>. As well, caregivers in the study of Grover et al. (2014) had positive attitude toward psychotropic medications<sup>(23)</sup>. To the contrary, Elbur et al. (2014) concluded that the interviewed relatives had negative attitudes towards patients and mental illness<sup>(33)</sup>. In addition, Lazaratou et al. (2007) reported that parents have a negative opinion on psychotropic medications<sup>(24)</sup>.

Clinically, patient's adherent behavior does not develop in isolation. Rather, it was believed that a patients' willingness to adhere to medication regimen may reflect the attitudinal atmosphere in which it is proposed<sup>(15,16)</sup>. The results of current study are in harmony with this belief where statistically significant relationships were detected between family caregivers' attitudes toward both mental illness and its medications, and patient's adherence. The studied caregivers whose patients were adherents demonstrated higher mean scores on both FAMI and FAPM than those whose patients were nonadherents to the prescribed medications regimens. Thus, it can be said that these attitudes significantly and positively impacted the studied patient's adherent behavior. Consistent with these results, previous studies found that attitudes of family members toward mental illness and psychotropics can influence patients' adherence and reactions toward these medications<sup>(23,31)</sup>.

According to the results of the current study, the studied caregivers' attitudes toward both mental illness and psychotropic medications are not just related to patient's adherence, but also they are significantly related to each other. It was stated that favorable family caregivers' attitudes toward mental illness can be expressed by their belief in the effectiveness of medications<sup>(34)</sup>. As a consequence, family caregivers who usually acknowledge the beneficial effect of medication on the clinical outcome of mental illness can motivate patients to take it<sup>(35)</sup>. On the other hand, if they have untoward attitudes, unpleasant feelings and poor perceptions of the illness, negative attitudes toward medications can result and in more extreme cases, these attitudes are sufficient enough for patients to discontinue their medication regimens<sup>(36)</sup>.

By its very nature some psychotic disorders, such as schizophrenia, impair the insight and judgment, and place the patient at risk for medication nonadherence. Here, the caregivers' role is to help their relatives



continue taking their medicines in order to maintain stability in the community. This can be done through continuous encouragement and reminders to ensure that medications are taken as prescribed<sup>(7,37)</sup>. However, the actions of family caregivers to promote adherence may go beyond mere encouragement<sup>(38)</sup>. Actually, many caregivers play a supportive role in more practical ways by accompanying their patients for dispensing medications from the outpatient clinic. This is particularly true knowing that more than one half of the studied patients were visiting the outpatient clinic routinely accompanied by their family caregivers for follow up and dispensing the prescribed medication regimens. These caregivers' supporting and motivating behaviors reflect the positive attitude toward the patient and his mental illness and are perhaps of utmost powerful tools to carryout any long-term medication therapy<sup>(15,32)</sup>. In this context, it was argued that the patients' ability to manage their illness by adhering to the prescribed treatment program may be impaired without constant external support and motivation<sup>(11,34)</sup>.

Caregivers' supportive actions and encouraging efforts cannot happen without positive attitudes toward their patient's mental illness. Only then, the patients' negative reactions to treatment can be reduced<sup>(39)</sup>. In this respect, patients in the study of Teferra et al. (2013) mentioned lack of support from their family caregivers as one of the most important reasons for discontinuing treatment and follow up. Indeed, the respondents commented that adherence was impossible without the active involvement of their families<sup>(38)</sup>. Furthermore, Tesfay et al. (2013), found more than one half of the outpatients were nonadherents to medications due to poor social support from the family. This lack of support was associated not only with increasing risk of nonadherence, but also with irregular follow up<sup>(30)</sup>. In this way, social network of patients appears to be a valuable factor influencing the decision to take medication. It may also form an

environmental pressure on the patient to take psychotropic medications<sup>(13)</sup>.

It would seem worthwhile to mention here that more than one half of the studied caregivers in the present study reported that they became carers to help and support a loved one. Again, these findings place a great emphasis on the fundamental role of family caregivers' favorable attitudes on reinforcing medication adherence by setting a supportive caring actions involving medication giving. On the same line, various studies suggested that the availability of a supportive family caregiver to help patients manage their medications has been consistently shown to be associated with improved medication adherence<sup>(19,34,37,40)</sup>.

Additionally, the current results revealed that the highest percentage of the studied caregivers (around one third) were the parents of the studied patients. These results may reflect the parents' greater involvement and responsibility for all the care of their ill child. Parents, as caregivers, usually reinforce patients' adherence by taking responsibility for obtaining, keeping and administering the medication and/or having patients' take it under their direct supervision. Through this close parent-patient relationship, more accepting reactions toward mental illness and medications are developed, and patient's adherence increases. Moreover, the results of the present study pointed out that females constituted the largest percentage of the studied caregivers. It was hypothesized that females are known to be the most often family caregivers who are involved in the care of their affected loved ones with a more tolerant attitude toward them<sup>(32)</sup>. Conversely, Caqueo-Urizar et al. (2011) found that the patients' mothers had the most rejecting and negative attitudes toward their patient's mental illness<sup>(18)</sup>.

Some other potential explanations of the statistically significant relationships between positive attitudes of the studied caregivers and patient's adherence may include the close personal contact of family

caregivers with the patient. It is worth mentioning here that one of the main inclusion criteria of caregivers in the present study is to live with the patient in the same household. It has been believed that this daily personal contact with a relative who suffers from mental illness can result in a rich emotional experience which in turn can lead to accepting and empathetic attitudes toward the patient's mental illness<sup>(41)</sup>. Furthermore, it was postulated that caregivers who live with the patient are more likely to be hopeful for a cure, exhibit fewer critical atmospheres toward the patient and develop an optimistic view of treatment, so they emphasize the patient's regular use of medications<sup>(34)</sup>. Conversely, it was claimed that the extended exposure of caregivers to the patients with psychosis resulted in negative attitudes towards both the patient and mental illness<sup>(18)</sup>.

The findings of the current study continue to reveal that most of the studied caregivers sought the psychiatric help from a private psychiatrist or a psychiatric hospital to manage patients' symptoms. This finding suggests that the actions taken by family caregivers on the onset of patient's psychiatric symptoms may shape their attitudes toward mental illness and consequently patient's adherence. In an attempt to explain this finding, the stigma of mental illness should be tackled here. It appears that the studied caregivers might view the mental illness and medications positively due to absence of stigma. Indeed, both stigma and denial of mental illness were reported as inhibitors to mental health services utilization and treatment. They may be harder to face and may lead caregivers to avoid everything connected with the illness and its treatment. Here, family caregivers are willing to seek traditional and religious advisors instead of seeking help from mental health professionals<sup>(42)</sup>. Some researchers noted that the stigma attached to mental illness is reflected on the family members and affects their reactions toward their patients' illness and treatment<sup>(24,43,44)</sup>. For these family caregivers, taking psychotropic medications means that they

agree with the label of "crazy" or "psychotic", regardless of patient's symptoms relief and improved functioning as a result of taking medications regularly<sup>(34)</sup>.

Notably, the present findings indicated that more than one half of the studied caregivers reported that they had positive family history of mental illness. May be due to having past personal contact/experiences with mental illness, family caregivers are expected to be more willing to adopt non-stigmatizing and non-rejecting attitudes toward mental illness. Thus, caregivers accept the patient and his/her mental illness and believe that mental illness is treatable like any other illness. Previous exposure to serious and long-standing consequences of mental illness also empowered caregiver to face the illness and its stigma in their patients by seeking psychiatric treatment.

On the other hand, it seems that prior personal experience with mental illness, especially those with positive family history of mental illness, forced them to expect the negative consequences of untreated mental illness in the form of exacerbated psychotic symptoms. Therefore, these caregivers want to avoid psychotic relapse through controlling their relatives' florid symptoms by medications. Accordingly, these studied caregivers avoided religious and traditional healers and sought relief from the problems tied to mental illness by asking a professional help. This interpretation can be supported by the results of the present study where the greatest percentage of the studied caregivers accompanied their patients to the outpatient clinic for routine follow up and dispensing medications to prevent psychotic relapse. In this respect, Marquez and Ramírez García (2011) found caregivers' folk or indigenous beliefs about mental illness and treatment did not overrule their support of relatives' medication usage because they gave symptom stabilization a higher premium than their attitudes against medication<sup>(19)</sup>.

Another possible explanation of the studied caregivers' positive attitude toward

psychotropics and consequently patient's adherence might be the caregivers' own suffering from psychological problems and receiving psychotropic medication to manage these problems. Although the findings of the current study pointed out that the studied caregivers' caregivers who were suffering from psychological problems constituted a small percentage, out of this percentage, about three fifths sought professional psychiatric help either from a psychiatrist and/or a psychiatric nurse, and most of these caregivers received psychotropic medications to manage their own problems. Perhaps the caregivers' suffering from psychological problems makes them become more aware about the distressing symptoms of illness, understand how the patient feels and recognize the benefits of medication regarding symptom control and prevention of relapse. Thereby, it could be said that family caregivers' attitudes are influenced by their own experiences with mental illness and treating medications. In the same direction, it was pointed out that caregivers who had positive personal experiences about the fruitful effects of the medication can acknowledge that their relatives' behaviors or symptoms can improve in one way or another when they take medication<sup>(19)</sup>. When the caregiver views the patient's mental illness and psychotropic agents positively, has a positive personal experience with taking medications and shares these experiences with the patient, the patient's negative reactions can be reduced and adherence is probable being also treated with psychopharmacological agents<sup>(36,45)</sup>.

In contrast with prior studies<sup>(18,31)</sup>, the current study did not aim to investigate relationship between patients' and family caregivers' socio-demographic characteristics and caregivers' attitudes toward both mental illness and psychotropic medications. However, one can not deny that some clinical characteristics might indirectly contribute to such attitudes. For instance, the present results indicated that the duration of illness for more than two

fifths of the studied patients was less than or equal to 5 years and near to one third of caregivers provided care for their patients for a year or less. In some ways, these relatively short durations might prevent caregivers from feeling bored with the chronicity of mental illness, long-term medication regimens and long duration of caregiving process, so caregivers' positive attitudes to the mental illness and psychotropic medications could be developed and consequently patient's adherence could be reinforced.

### **Conclusion**

It can be concluded that patient's adherence is significantly related to family caregivers' attitudes toward mental illness and its medications. Hence, caregivers with positive attitudes toward mental illness and psychotropics tend to influence their patient's adherence and regular use of medication regimens.

### **Recommendations**

*In the light of the present findings, the following recommendations are suggested:*

- Considering the relationship between family caregivers' attitudes and patients' adherence, assessment of their attitudes should be integrated and incorporated into the routine psychiatric nursing practice while developing the patient's plan of psychiatric treatment, so that prescribed regimens can be most effective.
- Family caregivers need to be involved while developing and implementing patient's adherence-enhancing nursing interventions.
- Further studies are required to study what factors can affect the family caregivers' attitudes toward mental illness and psychotropic medications, and consequently patient's adherence.

**Table (1): Distribution of the studied family caregivers according to their socio-demographic characteristics**

Family caregivers' socio-demographic characteristics	(n=150)	
	No.	%
<b>Caregivers' kinship to the studied patients</b>		
Parent	51	34.0
Sibling	48	32.0
Spouse	40	26.7
Son/daughter	11	7.3
<b>Sex</b>		
Female	107	71.3
Male	43	28.7
<b>Age (in years)</b>		
18 –	42	28.0
30 –	34	22.7
40 –	26	17.3
50 –	35	23.3
60 +	13	8.7
<i>Min. – Max.</i>	<i>18 – 66 years</i>	
<i>Mean ± SD</i>	<i>42.13 ± 13.35 years</i>	
<b>Marital Status</b>		
Single	26	17.3
Married	105	70.0
Divorced or widower	19	12.7
<b>Educational level</b>		
Illiterate	36	24.0
Read and write & Primary education	19	12.7
Preparatory education	68	45.3
Secondary or intermediate education	18	12.0
University education	9	6.0
<b>Occupation</b>		
Housewife	91	60.7
Manual worker	16	10.7
Employee / professional	15	10.0
Trader / Free business	10	6.6
Student	6	4.0
Unemployed	12	8.0
<b>Income</b>		
Insufficient	84	56.0
Sufficient	66	44.0

**Table (2): Distribution of the studied family caregivers according to their clinical and caregiving characteristics**

Family caregivers' clinical and caregiving characteristics	(n=150)	
	No.	%
<b>Family history of mental illness</b>		
Positive	77	51.3
Negative	73	48.7
<b>Action taken by caregivers on the onset of patient's symptoms</b>		
Seeking professional psychiatric help	105	70.0
Seeking help from religious and traditional healers	45	30.0
<b>Duration of caregiving (in years)</b>		
≤1	49	32.7
5 –	40	26.7
10 –	38	25.3
15 –	12	8.0
20 +	11	7.3
<i>Min. – Max.</i>	8 months – 30 years	
<i>Mean ± SD</i>	8.42 ± 6.19 years	
<b>Reasons and circumstances of becoming a caregiver</b>		
Helping and supporting a loved one	84	56.0
Sense of responsibility and obligation to my relative	34	22.7
The patient lives with me in the same house	32	21.3
<b>Presence of caregivers' psychological problems as reported by them</b>		
Yes	26	17.3
No	124	82.7
<b>Obtaining psychiatric help for their own problems</b>	(n = 26)	
Yes	16	61.5
No	10	38.5
<b>Personnel who provided the psychiatric help<sup>#</sup></b>	(n = 16)	
Psychiatrist	14	87.5
Psychiatric nurse	4	25.0
<b>Receiving psychotropic medication to manage psychological problems</b>	(n = 26)	
Yes	23	88.5
No	3	11.5

<sup>#</sup> : Frequencies are not mutually exclusive.

**Table (3): Distribution of the studied patients according to their socio-demographic characteristics**

Patients' socio-demographic characteristics	(n=150)	
	No.	%
<b>Sex</b>		
Male	103	68.7
Female	47	31.3
<b>Age (in years)</b>		
20 –	43	28.7
30 –	59	39.3
40 –	28	18.7
50 +	20	13.3
<i>Min. – Max.</i>	<i>20 – 72 years</i>	
<i>Mean ± SD</i>	<i>37.75 ± 12.09</i>	
<b>Marital Status</b>		
Single	71	47.3
Married	62	41.3
Divorced or widowers	17	11.4
<b>Educational level</b>		
Illiterate	37	24.7
Read and write & primary education	27	18.0
Preparatory education	32	21.3
Secondary or intermediate education	44	29.3
University education	10	6.7
<b>Occupation</b>		
Manual worker	51	34.0
Housewife	42	28.0
Trader/Free business	20	13.3
Student	7	4.7
Unemployed	30	20.0
<b>Place of residence</b>		
Urban	147	98.0
Rural	3	2.0

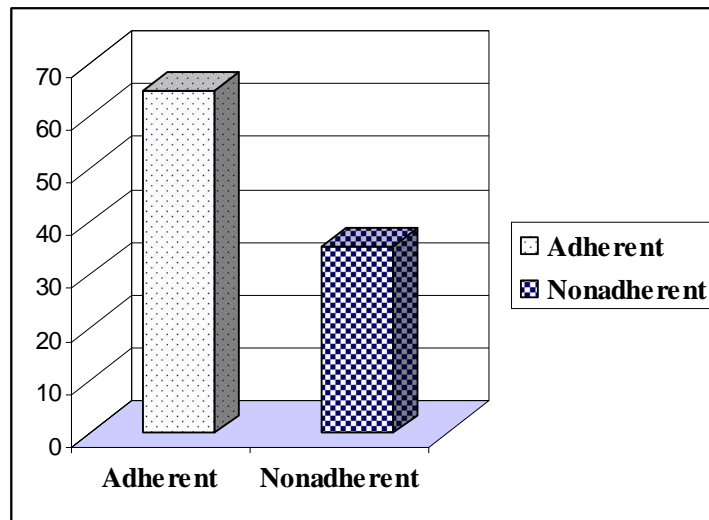
**Table (4): Distribution of the studied patients according to their clinical characteristics**

Patients' clinical characteristics	(n=150)	
	No.	%
<b>Psychiatric diagnosis</b>		
Schizophrenia	108	72.0
Mood disorders	42	28.0
<b>Duration of mental illness (in years)</b>		
≤5	62	41.3
10 –	39	26.0
15 +	49	32.7
<i>Min. – Max.</i>	<i>8 months – 35 years</i>	
<i>Mean ± SD.</i>	<i>11.75 ± 8.61 years</i>	
<b>Previous psychiatric hospitalization</b>		
Yes	119	79.3
No	31	20.7
<b>Number of previous psychiatric hospitalization</b>	<b>(n = 119)</b>	
Once	18	15.1
Twice	39	32.8
Triple	25	21.0
Four times and more	37	31.1
<i>Min. – Max.</i>	<i>1 – 15 Times</i>	
<i>Mean ± SD.</i>	<i>3.82 ± 3.48</i>	
<b>Time lapsed since last discharge</b>	<b>(n = 119)</b>	
<6 months	37	31.1
6 months –	22	18.5
1 year –	31	26.1
3 year +	29	24.3
<i>Min. – Max.</i>	<i>2 months – 8 years</i>	
<i>Mean ± SD.</i>	<i>2.10 ± 2.19 years</i>	
<b>Reason for visiting the outpatient clinic</b>		
Routine follow up and dispensing medication	93	62.0
Psychiatric management of relapse	57	38.0
<b>Currently prescribed groups of psychotropic medications<sup>#</sup></b>		
Typical antipsychotics:	<b>111</b>	<b>74.0</b>
• Oral	99	89.2
• Intramuscular	47	42.3
Mood stabilizers	56	37.3
Atypical antipsychotics	42	28.0
Novel antidepressants	14	9.3
Cyclic antidepressants	12	8.0

<sup>#</sup>: More than one group of psychotropic medications can be prescribed for the same patient.

**Table (5): Distribution of family caregivers according to their attitudes towards mental illness (FAMI) and psychotropic medications (FAPM) (n=150)**

Family caregivers' attitudes	Positive attitude (Score: 21-40)		Negative attitude (Score: 0-20)		Min. – Max.	Mean ± SD
	No.	%	No.	%		
<b>FAMI</b>	140	93.3	10	6.7	16.0 – 38.0	27.15 ± 3.91
<b>FAPM</b>	128	85.3	22	14.7	12.0 – 39.0	25.30 ± 3.21



**Figure (1): Distribution of the studied patients according to their adherence to medication regimen**



**Table (6): Relationship between family caregivers' attitudes toward mental illness (FAMI) and psychotropic medications (FAPM), and patient's adherence (n=150)**

Medication adherence as reported by the patient	FAMI				FAPM			
	Positive attitude (n=140)		Negative attitude (n=10)		Positive attitude (n=128)		Negative attitude (n=22)	
	No.	%	No.	%	No.	%	No.	%
<b>Adherent (n=97)</b>	96	68.6	1	10.0	90	70.3	7	31.8
<b>Nonadherent (n=53)</b>	44	31.4	9	90.0	38	29.7	15	68.2
<i>FET</i>	<i>p=0.0004*</i>				<i>p=0.0012*</i>			

FET: Fisher's Exact Test

\*: Statistically significant value at  $p \leq 0.001$ .

**Table (7): Relationship between family caregivers' attitudes towards mental illness (FAMI) and their attitudes towards psychotropic medications (FAPM) ((n=150))**

FAPM	FAMI				<i>Test of significance</i>
	Positive attitude (Score:21-40) (n = 140)		Negative attitude (Score:0-20) (n = 10)		
	No.	%	No.	%	
<b>Positive attitude (Score:21-40) (n = 128)</b>	128	91.4	0	0.0	<i>FET=5.529*</i>  <i>p=0.023</i>
<b>Negative attitude (Score:0-20) (n = 22)</b>	12	8.6	10	100.0	

FET: Fisher's Exact Test

\*: Statistically significant value at  $p \leq 0.05$ .

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