

Antipsychotic Medication Adherence and Satisfaction Among Palestinian People with Schizophrenia

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Abstract: Background: In Arab and Muslim-dominated countries, spirituality and religiosity shape the belief and practices toward chronic illnesses. No previous studies were published to assess adherence to and satisfaction with antipsychotic medications in persons with schizophrenia in the Arab world.

Objective: To assess medication adherence and treatment satisfaction with antipsychotics in a sample of Palestinian people with schizophrenia.

Methodology: Medication adherence was assessed using the 8-item Morisky Medication Adherence Scale (MMAS-8). Treatment satisfaction was assessed using the Treatment Satisfaction Questionnaire for Medication (TSQM 1.4). Psychiatric symptoms were assessed using the expanded Brief Psychiatric Rating Scale (BPRS-E). Data were entered and statistically analyzed using SPSS 16 for windows.

Results: A convenience sample of 131 persons with schizophrenia was studied. Based on MMAS-8, 44 persons (33.6%) had a low rate, 58 (44.3%) had a medium rate and 29 (22.1%) had a high rate of adherence. Age was significantly correlated ($P=0.028$) with adherence score. However, variables like use of monotherapy or atypical or depot antipsychotics were not significantly associated with higher adherence. The means of satisfaction with regard to effectiveness, side effects, convenience and global satisfaction were 72.6 ± 20.5 , 67.9 ± 31.47 , 63.2 ± 14.3 and 63.1 ± 18.8 respectively. There was a significant difference in the means of effectiveness ($P<0.01$), convenience ($P<0.01$), global satisfaction ($P<0.01$), but not side effects domains ($P=0.1$) among persons with different levels of adherence. Furthermore, there was a significant difference in the means of positive symptom score ($P<0.01$), manic ($P<0.01$) and depression ($P<0.01$) but not negative symptom score ($P=0.4$) among persons with different levels of adherence.

Conclusions: Medication nonadherence was common and was associated with low treatment satisfaction scores and poor psychiatric scores. Medication related factors had insignificant effects on adherence scores.

Keywords: Medication adherence, palestine, schizophrenia, treatment satisfaction,.

INTRODUCTION

Schizophrenia is a chronic psychiatric disorder that impairs the quality of patients' lives [1-3]. Antipsychotic drug therapy has been reported to successfully minimize the frequency of acute schizophrenic episodes and hospitalization [4]. Adherence is a necessary element to achieve such success [4, 5]. Furthermore, adherence has been reported to lead to

considerable cost savings for the health system [6]. However, nonadherence to antipsychotic medications is common and is considered as an integral barrier to the successful treatment of schizophrenia [7-9]. Several factors can contribute to medication non adherence in patients with schizophrenia [10-13]. Such factors include race, culture and religion. For example, a review article about psychotropic medications found that rates of nonadherence were higher among Latinos than Euro-Americans and clinical and research interventions to improve adherence should be culturally appropriate and incorporate identified factors [14]. Another study examined how religious beliefs and practices can affect medication and illness representations in chronic

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schizophrenia. The authors concluded that religion and spirituality contribute to shaping representations of disease and attitudes toward medical treatment in patients with schizophrenia and that this dimension should be on the agenda of psychiatrists working with patients with schizophrenia [15]. In a study carried out to examine the association between adherence and ethnicity, the authors concluded that when other factors were controlled for, ethnicity was a significant predictor of medication adherence, and patients of all ethnicities were most adherent when taking olanzapine, less adherent when taking risperidone, and least adherent when taking haloperidol [16]. In a study carried out among Muslims in Germany, the authors concluded that for Muslims, the spiritual causes of disease are regarded much more as given by Allah [17]. Another study carried out in India found that a sound spiritual, religious, or personal belief system is associated with active and adaptive coping skills in subjects with residual schizophrenia and that understanding and assessing the spirituality and religiousness of subjects with schizophrenia can help in better management of the disorder [18].

In the Arab world, families of patients with schizophrenia suffer from stigmatization [19]. Actually, the common belief in the Arab society is that mental illnesses have a devilish and sinful component. Such stigmatization seems to be a common problem and barrier for treatment of schizophrenia in other countries. A study carried out in China showed that Clinicians should assess the effect of stigma as part of the standard work-up for patients with mental illness and help patients and family members reduce the effect of stigma on their lives [20]. Another study carried out in Hong Kong found that Self-stigmatization is associated with the level of treatment adherence among people with schizophrenia, and its negative effect was found to intensify along the self-stigmatization process [21-23].

Unfortunately, *Pubmed* search showed no studies about medication adherence and treatment satisfaction among persons with schizophrenia in the Arab and Muslim countries. Therefore, the objectives of this study were to assess medication adherence and to investigate relationships of medication adherence with treatment satisfaction and clinical symptoms in a sample of Palestinians with schizophrenia.

METHODOLOGY

Study Design and Patient Selection

This cross sectional study was conducted between July 2010 and September 2010 at Al-Makhfya psychiatric Health Center in Nablus, Palestine. Approval to perform the study was obtained from the Palestinian ministry of health and Institutional Review Board at An-Najah National University. Patients who met the following criteria were invited to participate in this study: 1) their age was between 20 and 65 years, 2) they were diagnosed with schizophrenia as defined by DSM-IV and confirmed in their medical files and 3) they had not been suffering from an acute relapse during the past year. A convenience sample of 150 patients met the inclusion criteria during the study period.

Assessment and Measures

The instrument used in this study consisted of four parts. In part number one, socio-demographic and medication data were obtained directly from the patient and his medical files. Part number two consisted of questions pertaining to medication adherence test. Part number three consisted of questions pertaining to treatment satisfaction test. Finally, part number five consisted of questions pertaining to psychiatric assessment.

Medication adherence was assessed using Arabic version of the validated eight-item Morisky Medication Adherence Scale (MMAS) [24, 25]. English version of the MMAS was translated into Arabic and was approved by professor Morisky through e-mail communication. The translation process was carried out according to the following procedure: 1) A forward translation of the original questionnaire was carried out from English to Arabic language by two qualified independent, native linguistic expert translators [2] A back translation from Arabic language to English was carried out by two different translators [3]. The back translated questionnaire was assessed and approved by the developer through e-mail. The Arabic version of MMAS is an 8-item questionnaire with 7 yes/no questions while the last question was a 5-point Likert scale. Based on the scoring system of MMAS, adherence was rated as follows: high adherence (= 8), medium adherence (6 - <8) and low adherence (< 6).

Treatment satisfaction was assessed using the Arabic version of Treatment Satisfaction Questionnaire for Medication (TSQM 1.4) which the researchers obtained from Quintiles Strategic Research Services. The TSQM 1.4 is a 14-item psychometrically robust and validated instrument consisting of four scales [26]. The four scales of the TSQM 1.4 include the effectiveness scale (questions 1 to 3), the side effects scale (questions 4 to 8), the convenience scale (questions 9 to 11) and the global satisfaction scale (questions 12 to 14). The TSQM 1.4 domain scores were calculated as recommended by the instrument's authors, which is described in detail elsewhere [27, 28]. The TSQM 1.4 domain scores range from 0 to 100 with higher scores representing higher satisfaction on that domain.

Psychiatric symptoms were evaluated by a psychiatrist and well trained psychologists using the expanded Brief Psychiatric Rating Scale (BPRS-E) [29-32] at the same visit. The BPRS-E consists of 24 items measuring psychiatric symptoms. Each item in BPRS-E is rated from 0 – 7 based on the severity of the symptom where the highest score indicate the highest severity. BPRS-E measures four different dimensions: manic excitement/ disorganization, positive symptoms, negative symptoms, and depression/ anxiety [33]. The first component, manic excitement/ disorganization included the following items: elevated mood, bizarre behavior, self neglect, excitement, distractibility, motor hyperactivity, and mannerism. The second component included grandiosity, suspiciousness, hallucinations, unusual thought content, conceptual disorganization, and is labeled positive symptoms. The third component is negative symptom component which included disorientation, blunted affect, emotional withdrawal, motor retardation, mannerism,

and posturing. The fourth component is a depression/anxiety component which included anxiety, depression, suicidality, and tension. The score of each component was based on the sum of scores of the items grouped into that component.

Data Analysis

Continuous variables like the Morisky score, satisfaction domain scores, BPRS, PSS and NSS were expressed as mean \pm SD. Correlation between continuous variables was carried out using Pearson correlation test. Difference in means among groups was carried out using one-way ANOVA test with the Tukey *post-hoc* test. All statistical analyses were conducted using Statistical Package for Social Sciences (SPSS; version 16.0) for Windows. The conventional 5 percent significance level was used throughout the study.

RESULTS

1. Demographic and Clinical Characteristics

One hundred and fifty out of 267 registered persons with schizophrenia met the inclusion criteria. One hundred and thirty one (131) patients agreed to participate giving a response rate of 87.3%. Of the 131 persons, 40 (30.5%) were female and 91 (69.5%) were male. The mean age of the study sample was 42.9 ± 10.3 years (range = 20 – 65 years). The mean duration of illness was 16.23 ± 9.59 years. Eighteen (13.7%) had other non-psychiatric diseases mainly as diabetes mellitus. None of the persons in the study sample were reported to have any type of drug abuse. Forty two persons (32.1%) were on monotherapy. Of those on monotherapy, 18 were using atypical oral antipsychotics while 24 were on oral typical antipsychotic medications. Of those on combination therapy, 69 (52.7%) persons were on depot antipsychotics. Of the total study sample, 43 (32.8%) were using atypical antipsychotics, mainly as clozapine.

The average scores of satisfaction with regard to effectiveness, side effects, convenience and global satisfaction were 72.6 ± 20.5 ; 67.9 ± 31.5 ; 63.2 ± 14.3 ; and 63.1 ± 18.8 respectively. The mean BPRS scores for positive, negative, manic and depression scores were: 14.4 ± 6.7 , 13.7 ± 6.1 , 19.6 ± 8 and 12 ± 5 respectively. Details regarding demographic and clinical characteristics of the studied patients are shown in Table 1.

2. Assessment of Adherence

Based on MMAS-8, 44 (33.6%) of patients had a low adherence, 58 (44.3%) had a medium adherence and 29 (22.1%) had a high medication adherence. The average adherence score (6.1 ± 1.7) for the study sample generally indicates medium rate of adherence.

There was a significant positive correlation between adherence and age ($P = 0.028$; $r = 0.19$) but not with the duration of illness ($P = 0.13$). No significant difference in the means of adherence was found based on gender ($P = 0.76$), mono or combination therapy ($P = 0.82$), use of depot antipsychotics ($P = 0.86$) or use of atypical antipsychotics ($P = 0.5$). Patients having chronic diseases have significantly higher adherence score compared to those who do not, but the significance was at the borderline ($P = 0.049$). Details are shown in Table 2.

Table 1. Baseline Demographic and Clinical Data

Variable	Mean \pm SD or Frequency (%)
Age (years)	42.9 ± 10.3
Gender (male)	91 (69.5)
Presence of other chronic diseases Yes	18 (13.7)
Duration of illness (years)	16.2 ± 9.6
Smokers	72 (55)
Depot antipsychotics Yes No	69 (52.7%) 62 (47.3%)
Atypical antipsychotics Yes No	43 (32.8%) 88 (67.2%)
Combination therapy Yes No	89 (67.9%) 42 (32.1%)
Morisky score Low adherence Moderate adherence High adherence	6.1 ± 1.7 44 (33.6) 58 (44.3) 29 (22.1)
TSQM scales : - Effectiveness - Side effect - Convenience - Global satisfaction	72.6 ± 20.5 67.9 ± 31.5 63.2 ± 14.3 63.1 ± 18.8
BPRS score - Positive symptom score - Negative symptom score - Manic excitement - Depression	14.4 ± 6.7 13.7 ± 6.1 19.6 ± 8 12 ± 5

Abbreviation: SD: standard deviation; TSQM: Treatment satisfaction Questionnaire for medication; BPRS: Brief Psychiatric Rating Scale.

Table 2. Demographic and Medication Related Factors Associated with Adherence

Variable	P
Age*	0.028
Gender	0.76
Duration of illness*	0.13
Chronic diseases	0.05
Use of depot antipsychotics	0.86
Use of atypical antipsychotics	0.5
Use of combination therapy	0.82

*Continuous variables were tested using Pearson correlation while other categorical variables were tested using independent sample t test.

Significant difference was found in the means of the following BPRS components among persons with different levels of adherence: PSS ($P < 0.01$, $F = 5.7$), manic excitement ($P < 0.01$, $F = 5.2$), depression ($P < 0.01$, $F = 5.2$). However no such difference was found with regard to NSS ($P = 0.3$; $F = 1$). Post hoc analysis of BPRS scores versus adherence levels is shown in Table 3.

There was a significant difference in means of effectiveness ($P < 0.01$, $F = 8$), convenience ($P < 0.01$; $F = 12.5$) and global satisfaction domain ($P < 0.01$, $F = 9$) but not in side effects domain ($P = 0.1$; $F = 2$) among the three levels of adherence. In general, persons in the high adherence category had the highest satisfaction score compared to those in low and medium adherence categories. Results of post hoc analysis are also shown in Table 3.

DISCUSSION

This study is the first of its type in Palestine and Arab world to assess medication adherence and treatment satisfaction among persons with schizophrenia. Results of our study showed that the majority of persons with schizophrenia were nonadherent and that younger people had significantly lower adherence scores than elderly. Our findings regarding impact of age on medication adherence is in agreement with finding reported by other researchers. However, other researchers reported equal nonadherence among middle aged and elderly patients [34]. Several studies have shown that up to 80% of all schizophrenic people discontinue antipsychotic medications and that nonadherence rates ranging from 20% to 89%, with an average rate of approximately 50%, have been reported [7, 35, 36]. In a study of schizophrenia psychopathology carried out in Kuwait, the authors concluded that the persistence of psychotic symptoms despite freely available antipsychotic treatment call for attention to the need for continued interaction with family members in order to address the impact of symptoms [37]. Differences in methodology

used to assess adherence as well as social and cultural differences among different countries might be responsible for different results obtained regarding rate of adherence [38]. A study carried out in Malaysia among people with different religious background has concluded that lay beliefs about schizophrenia may serve different functions for different ethno-cultural groups, which have an influence on help-seeking behaviour [39]. Similar results were obtained by Sheikh and Furnham [40]. Psychiatrists and health professionals tend to underestimate the importance of this issue possibly due to the low rates of religious affiliation of psychiatrists, or a lack of knowledge of religions [41, 42].

Although patient's satisfaction with treatment regimen is crucial for medication adherence, few studies had examined the relationship between adherence, treatment satisfaction, and therapeutic outcome in patients with schizophrenia [43-45]. Our findings endorse previous reports that treatment satisfaction is positively associated with antipsychotic medication adherence and improved clinical outcomes [12, 46, 47]. Other researchers also had similar conclusions. A study by Maneesakorn and colleagues indicated that adherence to antipsychotic medication has positive impact on psychiatric symptoms and satisfaction with medication [48, 49]. On the other hand, medication nonadherence had negative impact on treatment response, highlighting the importance of adherence to achieve satisfactory treatment outcome [50]. A study by Liu-Seifert *et al.*, 2005 has found that discontinuation of treatment may lead to exacerbation of psychiatric symptoms and undermining therapeutic progress [50]. In these studies, poor response to treatment and worsening of underlying psychiatric symptoms, and to a lesser extent, intolerability to medication were the primary contributors to treatment being discontinued.

Our results are in agreement with Meire *et al.*, findings who reported that type of antipsychotic and other medication-related factors may not be as closely related to

Table 3. Treatment Satisfaction and Psychiatric Symptoms Stratified by Level of Adherence

Variable	Adherence Level			P value	Post Hoc Analysis; Significant Pairs
	Low Adherence (a)	Medium Adherence (b)	High Adherence (c)		
Effectiveness	65.9±20	71.5±20	84.7±15.7	< 0.01	a - c; b - c
Side Effects	61.2 ±27.4	67.8±33.7	76.1±31.3	0.1	none
Convenience	55.7±12.2	64.8±13.4	70.2±13.5	<0.01	a - b; a - c
Global Satisfaction	56.5±18.9	61.9±18.6	75.5±13.8	<0.01	a - c; b - c
PSS	16.9±7.1	14.1±6	11.6±6	<0.01	a - c
NSS	14.4±4.9	13.9±6.5	12.3± 6.8	0.4	none
Manic excitement	22.4 ± 7.3	18.8 ± 7.8	16.7 ± 8.2	< 0.01	a - c
Depression	13.9 ± 5.2	12.7 ± 4.6	10.3 ± 5	< 0.01	a - c

Abbreviations: PSS: Positive Symptom Score; NSS: Negative Symptom Score.

adherence as it has often been suggested [51]. Rosenheck and colleagues evaluated medication continuation and regimen adherence in 423 patients taking haloperidol or clozapine as part of a double-blind, randomized trial. Although the patients who received clozapine continued their medication significantly longer, the treatment groups did not differ in the proportion of pills returned each week [52]. Gianfrancesco and colleagues indicated that none of the atypical antipsychotic medications showed treatment durations significantly different from typical antipsychotics [53]. Olfson and colleagues examined the effect of antipsychotic type on adherence 3 months after 213 in patients with schizophrenia or schizoaffective disorder were discharged while receiving typical (84.5% of patients) or atypical (14.5% of patients) antipsychotics. A non-significant trend toward increased adherence was reported among patients with prescriptions for atypical antipsychotics [54]. Cabeza and colleagues retrospectively studied the relationship of adherence to antipsychotic type in 60 in-patients with schizophrenia. No significant association was found between adherence and type of antipsychotic [55]. Dolder reported that patients on either typical or atypical antipsychotic medications had similar low rates of adherence [7]. However, Al-Zakwani reported that atypical antipsychotic users were significantly more adherent to therapy, and had lower rates of office, hospital and emergency room utilization [56]. A study by Jones *et al.*, 2006 has found that in people with schizophrenia whose medication is changed for clinical reasons, there is no disadvantage across 1 year in terms of quality of life, symptoms, or associated costs of care in using typical antipsychotics rather than non-clozapine atypical antipsychotics [57]. Regarding results of depot IM antipsychotic injections, we found no difference between oral and long acting antipsychotics with regard to adherence, satisfaction, or psychiatric symptoms. Some researchers reported equal or better adherence, satisfaction, and outcome with long acting injection than oral antipsychotics [58-60]. In contrast, Vehof reported that patients on depot antipsychotics showed lower adherence and have more side effects than oral antipsychotics [61].

The conclusions of our study can be summarized as follows: First, medication nonadherence was common and was associated with low treatment satisfaction scores and poor psychiatric scores. Second, medication related factors had insignificant effects on adherence scores. Finally, it is noteworthy that studies of adherence published from Palestine in different groups of patients yielded rates of high adherence compared to patients with schizophrenia [4].

Our study has few limitations. First, the sample size used in the study might be relatively small to draw conclusions for assessing adherence, satisfaction, and psychiatric symptoms. Furthermore, the convenience sampling might create a bias problem. Second, nonadherence among schizophrenic people might be inherent in the context of the disease itself. Finally, the uneven male: female distribution might have affected our results regarding gender differences in adherence scores [62, 63].

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CONFLICT OF INTEREST

Declared none.

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