

Full Length Research Paper

Medication adherence of psychiatric patients in an outpatient setting

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The success of medication treatment is dependent on a patient's adherence to the medication regimen and non-adherence amongst psychiatric patients is associated with poor clinical outcomes and high resource utilization. The aim of this study was to assess the levels of medication adherence in psychiatric outpatients and explore factors that influence adherence. Adult, psychiatric outpatients were assessed to (1) determine medication adherence and (2) identify factors that might impact on adherence, using the Morisky Medication Adherence Questionnaire. The impact of socio-demographic factors as well as treatment related factors were considered. 95 outpatients participated in the study. The eight item Morisky medication adherence scale indicated high adherence levels amongst 12.6%, moderate adherence levels amongst 50.8%, and low adherence levels amongst 37% of participants. Significant predictors of adherence to psychiatric treatment were age ($p=0.045$) and race ($p=0.055$). The impact of socio-demographic variables on adherence, such as the type of condition, employment status and educational level, were insignificant. Adherence levels amongst psychiatric outpatients were found to be acceptable, with race and age predictors of adherence levels in this study population.

Key words: Adherence, psychiatry, morisky scale, outpatients, race, age.

INTRODUCTION

Schizophrenia affects about 1% of population (Nicolino et al., 2011). As a chronic condition, prolonged medication treatment is needed, mainly with antipsychotic drugs. The success of medication treatment is dependent on a patient's adherence to the medication regimen. Medication adherence is the degree to which patients follow health professionals' recommendations regarding prescribed medication and maintain the indicated treatment regimen (Miasso et al., 2009). Non-adherence to this medication regimen is associated with a worse prognosis, greater probability of relapse, rehospitalization and increased resource consumption (Kane, 2011; Nicolino et al., 2011). The relapse rate after discontinuation of anti-psychotic medication is believed to be more than 50% (Robinson et al., 1999).

Non-adherence may be influenced by several factors, including forgetfulness (Morisky et al., 1986), complexity

of medication regimen (Ishedjan, 2004) and poor quality of life. Non-adherence to specifically antipsychotic medication is an enormous challenge for clinicians and patients in the treatment of schizophrenia. Patients with schizophrenia, non-adherence rates range from 20 to 89% with an average rate of 50% (Lacro et al., 2002). Existing literature suggests that lack of insight into illness and poor understanding of the chronic nature of schizophrenia contribute greatly to the treatment non-adherence (Sharif et al., 2003). Although non-compliance to psychotropic medication have long been identified as problematic in South Africa, (Gillis et al., 1987; Gillis et al., 1989) there is lack of current information on adherence. The aim of this paper is therefore to determine levels of adherence amongst outpatients diagnosed with schizophrenia at a tertiary institution in South Africa, and further explore factors that might impact on medication adherence.

MATERIALS AND METHODS

Ethical approval was obtained from relevant regulatory bodies

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including the University of KwaZulu-Natal, the KwaZulu-Natal Department of Health, and the hospital where the study was conducted; written informed consent was obtained from all the participants subsequent to the aims and objectives of the study being described to them.

Study population

The participants in the study consisted of adult (>18 years old) outpatients at a tertiary psychiatric unit, with a diagnosis of schizophrenia. A total of 95 patients participated in the study; these patients were selected based on convenience sampling.

Assessment

For data collection a structured interview, as well as a chart review was used. Assessment of medication adherence was done by completing an assessment form consisting of three sections. Researchers conducted the interviews by posing questions to patients in English or isiZulu, depending on the mother tongue of the patient. The assessment form consisted of the following:

Socio-demographic data

This included the following details: type of psychiatric condition, gender, age, race, marital status, residential status, employment status, highest educational level obtained and family history of the psychiatric condition. For each of the above items, participants were provided with a series of possible options and they were prompted to select the option that applies to them.

Morisky medication adherence scale (MMAS)

The compliance level of patients was defined by the application of the MMAS. The MMAS is a reliable (Morisky et al., 1986, 2008) and validated 8 items; self reported measure of medication use patterns (Morisky et al., 1986). Each item on the MMAS measures a specific medication-taking behaviour (Morisky et al., 2008). Each of the items is presented in a "yes or no" format. These involve asking the patient about their extent and tendency to forget to take their medication and their discontinuance of medication treatment upon feeling that their condition has improved or alternatively worsened. Furthermore, it includes the patients' beliefs on whether they view their treatment plans as an inconvenience. Since there is a tendency for patients to give their health care providers false positive answers, the questions on the MMAS are appropriately phrased in a particular manner to prevent this from occurring. Answers were scored as 0 or 1, with score 1 corresponding to positive answers. The item scores obtained from the MMAS are summed to indicate an overall level of medication adherence. The MMAS scores range from zero to eight and have been trichotomised into three levels to classify adherence levels: high adherence-MMAS score of 8, moderate adherence-MMAS scores of 5>7 and low adherence-MMAS score of less than or equal to 4.

Medication profile

The medication profile of each individual patient was obtained through chart review of the medication record files which is located at the psychiatric institution. Data recorded include:

1. The number of antipsychotic medicines on the patients' current treatment regimen.

2. The type of formulation of the medicines taken (oral/depot).
3. The frequency of intake of the above medication.
4. The number of changes in the medication regimen over the past 6 months.
5. The number of missed appointments with the clinician and
6. The frequency of patient visits to the clinician.

Statistical analysis

The collected data were stored in an Excel/2010 database and later imported into Statistical package for Social Sciences (SPSS) V15.0 software, for analysis. Results were calculated as frequency (%) and median (p). Descriptive statistics were used to analyse medication compliance data. Significance was calculated at $p < 0.05$.

RESULTS

Characterization of study subjects

Out of the total of 95 patients participating in this study, the majority (25.3%) was between the ages of 18 to 29 and 60% were female. 67.4% were Asian, 60% single, a high percentage was unemployed (80%) and 86.3% resided with family members. A total of 74.7% of the participants were receiving oral drug therapy for the management of schizophrenia. 71.6% of participants have been stabilized on their current treatment regimen, having had no changes made to their medicine regimen over the past 6 months. A large number of patients (88.4%) reportedly visit the clinician on a monthly basis and 70.5% had zero missed scheduled appointments with their clinician.

Medication treatment compliance behavior

According to the responses from the participants with regards to the MMAS, 90.5% of participants indicated that they took their medication the day previous to the interview, whereas only 9.5% of the participants had not. Moreover 71.6% stated that they have never cut back nor stopped taking their medication upon feeling that their condition has worsened or improved. 70.5% stated that they never forget to take along their medication, when they leave home or travel. 36.8% of patients were classified as having low adherence, 50.6% with moderate adherence and 12.6% having high medication adherence levels. Table 1 outlines the scores attained by the patients and the respective percentage of adherence.

Variables influencing adherence

Table 2 indicates the variables assessed for their possible impact on adherence. Age and race were the most significant predictors of patient adherence, with probability values of 0.045 and 0.55, respectively. All other factors were statistically insignificant with regards to

Table 1. Scores, their respective frequencies and the corresponding patient adherence.

Score	Frequency	Percentage of patient's adherence (%)
0.00	1	1.1
1.00	1	1.1
2.00	5	5.3
3.00	19	20.0
4.00	9	9.5
5.00	15	15.8
6.00	20	21.1
7.00	13	13.7
8.00	12	12.6

Table 2. Evaluation of the patient adherence and the respective variables.

Variable	P value (probability)
Type of illness	0.815
Gender	0.464
Age	0.045 (*) p< 0.05
Race	0.055 (*) p< 0.05
Marital status	0.082
History	0.500
Residence	0.453
Education	0.852
Employment	0.287
Number of medicines taken	0.580
Formulation of medication	0.186
Frequency of medicine intake	0.623
Changes in medicine in past 6months	0.842
Number of Missed appointments by patient	0.918
Frequency of patient visits to the hospital	0.664

patient medication adherence. The age group older than 60 years, were found to be the most adherent to their treatment regimen, as they scored 28% in the high MMAS category. In contrast, the 30 to 39 age group was the least adherent to their medication since a high percentage of these participants scored in the low adherence category according to MMAS. The Asian population were the most adherent, since 17.2% of these participants scored in the highest score category. The white race group is represented by a relatively flat graph since a constant level of adherence was noted across the scores. The black race was found to be least adherent to their medication treatment since 69.3% of them scored in the low adherence category.

DISCUSSION

This aim of this study was to determine the levels of adherence in outpatients diagnosed with schizophrenia,

and also identify possible risk factors that might impact on adherence. Assessing medication adherence might lead to a better understanding of reasons for non-adherence in psychiatric patients and lay the groundwork for interventions aimed at increasing adherence (Morisky et al., 2008). The results from this study found moderate (50.6% of patients) to high (12.6% of patients) levels of medication adherence amongst the study population. These results differ from several previous studies, finding high levels (between 50 to 60%) of non-adherence (Cardoso and Galera, 2009; Rosa and Elkis, 2007; Nicolino, 2011). A large number of participants (86.3%) reported that they reside with members of their family. Although residential status did not prove to be a significant predictor of adherence it is vital to acknowledge that the degree of support afforded by caregivers correlated with a perceived improvement in the prognosis of mental illnesses. Earlier studies have concluded that social support is consistently associated with outpatient adherence (Fenton et al., 1997). The

supportive behaviour provided by caregivers may reinforce medication usage, while higher medication usage may elicit supportive behaviours from caregivers and this therefore creates a therapeutic chain of events (Fenton et al., 1997).

This study further found age and race as possible predictors of adherence to medication. Variables pertaining to medication that is, the number and frequency of medication intake and formulation thereof were found not to be predictors of medication adherence. Younger patients were found to have low levels of adherence, whereas the older patients demonstrated moderate levels of adherence. This implies that younger patients may have a more negative perception of medicine, perceiving them to be more harmful and viewing themselves as possessing greater personal control on how to best manage their condition (Hou et al., 2009). Self stigma was found to be a major barrier to medication adherence for psychiatric patients in earlier studies (Angermeyer and Matschinger, 2003; Gaebel et al., 2006). This may also be true in terms of this study since stigma can be regarded as an associate factor of non-adherence in the younger population where patients may possibly discontinue taking their medication in the presence of others to counter the notion that they form part of a devalued group of mentally ill individuals. This finding is consistent with recent studies which found that older patients were more adherent to their medication (Baldessarini et al., 2008; Sajatovic et al., 2007).

Since higher levels of adherence were observed amongst the older age category (over 60 years of age), it implies that these patients are aware of the consequences of non-adherence such as relapses and hospitalizations and they fear this due to prior exposure. Furthermore, it is suggested that these patients are more knowledgeable and possess greater insight with regard to their condition since they have had a longer period of experience with it. Insight has been associated with medication adherence (Day et al., 2005). Race was another predictor of medication adherence with 69.3% of the black African participants displaying low levels of adherence. Although employment status was not a significant statistical predictor of adherence, it may be a contributor to non-adherence seen amongst the black patients since all of the black patients participating in this study were unemployed. This suggests that non-adherence could have been attributed to their possible financial constraints, as they might find it difficult to afford visiting their healthcare facility on a monthly basis and thus, might not have regular refills on their prescription. Furthermore, traditional medicines are particularly popular amongst the black population.

It has been reported that beliefs regarding the need for treatment and the benefit of treatment may affect medication adherence in a patient (Perkins et al., 2006; Phatak and Thomas, 2006). Patient belief systems and

cultural values may therefore be associated with the non-adherence revealed in this race group, since some patients may prefer traditional spiritual healing over conventional western treatment. A belief in spiritual causation may influence patients and their caregivers in believing that a spiritual solution is required to resolve their mental health problems and therefore treatment with western medicine becomes futile (Adewuya et al., 2009). A limitation of this study was that self reports were utilized in the assessment and measurement of medication adherence; this may occasionally be unreliable and biased. This is due to self reported measures being subject to recall bias, overestimation of adherence and the elicitation of socially acceptable responses, thus this may result in an unreliable ascertainment of medication adherence status.

Conclusion

This study found that moderate to high levels of adherence to medication treatment exist amongst psychiatric outpatients at a tertiary facility in South Africa, and that medication adherence is influenced by age and race. This study identified the need for further research into the cause of high non-adherence amongst the black population. Also highlighted is the importance that patient illness beliefs should be addressed since these may lead to changes in adherence behavior. Medication adherence in psychiatric outpatients in general and particularly amongst the younger age group and the black population could be enhanced and improved by adequate intervention by health care professionals via patient counseling and patient medicinal care and education.

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