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Improving Medication Adherence in Convalscent Psychiatric Out-Patients Exposed to Psychotomimetic Medications in South-West, Nigeria: The Role of Medication Literacy and `Therapeutic Relationships.

Dennis Uba Donald*

Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

***Corresponding author:** Dennis Uba Donald, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

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Abstract

Medication adherence is a growing concern to clinicians and healthcare providers in psychiatric communities, mounting evidence of the prevalence of non-adherence have been significantly associated with undesirable health outcomes and burdensome healthcare expenditure. This study examined medication adherence in psychiatric patients exposed to psychotomimetic medications and how therapeutic relationship predicts the level of medication adherence. This study was a cross-sectional survey design. Snowballing sampling technique was used to select psychiatric out-patients. The total number of participants for this study was thirty-six (36), males (65%) and females (35%). Majority of participants were between the ages of 31-50 years. Participants responded to Morinsky Medication Adherence Scale (α=0.91), Liverpool University Neuroleptic Side-Effect Scale (α= 0.89), and Therapeutic Relationship Scale (patient version) (α=0.71). Three hypotheses were formulated and tested using multiple regression analysis. Results of the multiple regression indicate that psychotomimetic side-effects inversely predicted medication adherence among psychiatric patients exposed to psychotomimetic drugs [β = .35, p <0.01]. Also, the outcome of the results indicated that therapeutic relationship was a significant predictor of medication adherence among psychiatric patients exposed to psychotomimetic drugs [β = .40, p <0.01]. Therefore, it was recommended that therapeutic relationship should be an integral part of the modalities in psychiatric treatment and to adopt best practices by effectively communicating with patients about the importance of adhering to treatment plans; and provide medication support services to patients and family caregivers. This helps to improve, build a sustainable therapeutic relationship (nurse-patient) through empathy and professional intimacy that facilitates diagnosis accuracy, and desired health outcome.

Keywords: Medication adherence; psychotomimetic side-effect; therapeutic relationship; psychiatric out-patients; DAT

Introduction

In psychiatric communities, the use of medication to treat the effects of mental health disorders has been the predominant practice in professional healthcare practice for an extended period of time. Since 1808, when Dalton postulated the atomic theory, the synthesizing of drugs to obtain different

psycho-physiological and neurological effects have profoundly change the landscape of scientific development **[1]**. The public health problems and social challenges of psychiatric disorders such as, depression and schizophrenia portend public health significance, partly because of its disabling outcome and its widespread prevalence. In addition, this situation makes it a difficult subject-matter to neglect, owing to the fact that the adverse effect of psychiatric illness, takes an enormous toll on the society and the national economy thereby, increasing the already stretched healthcare expenditure.

Psychotomimetic medications have been used in hospitals to treat various types of mental illness, and quite a number of psychotomimetic medications are available with demonstrated efficacy in reducing the acute symptoms of schizophrenia, improving the wellbeing of patients and enabling some to live more productive lives, nonetheless, adherence and persistence to these medications are important aspects in monitoring and evaluation for optimal treatment benefits **[2]**. Clinical trials that are conducted in psychiatric populations have often reported that before treatment is concluded, the number of medication non-adherence cases tend to be higher among patient who take classic (hadol and prolixin) and second-generation antipsychotic medications (clozapine and olanzapine) and this have been attributed to the adverse reaction or extrapyramidal side-effects often reported by patients who have used these category of drugs for an extended period of time **[3]**.

Psychotomimetic drugs can be described as drugs containing chemical agents which are capable of producing an altering effect or induces the mind to mimic natural psychotic conditions similar to psychotic states **[4]**. This conditions often lead to disorganized speech and inappropriate conduct or demeanor, incoherent and/or confused speech, dementia, hallucinations, and delusions in normal individual's prior to been exposed to the drug. Psychotomimetic medications like amphetamine, amantadine and atropine tend to block muscarinic cholinergic receptors which create conditions similar to Alzheimer's disease and severe brain disorders without any known physical prognosis **[4]**.

Research studies have shown that medication adherence has a direct link to improved health outcome and the success of any treatment **[5,6]**. This means that, for any treatment plan to be successful, patients must take their medication. Studies have suggested a plethora of reasons why patients in undergoing psychiatric treatment (even in normal populations) do not complete their dosage or treatment regimen as prescribed or planned for them by a healthcare professional. Factors often linked to poor adherence include but not limited to, inadequate health literacy, drug side-effects, socio-economic status of the patient and caregivers, lack of family support, and complex medication regimen **[5]**. Medication adherence has been defined in several scientific literature and there seems to be no gold standard for its definition. However, most scholars and researchers agree that medication adherence entails taking drugs at the right time and the right doses, completing medications and follow-up treatment as well as, re-filling prescribed medication upon usage when there is need for continual treatment. The World Health Organization defines medication adherence as the degree to which the person's behaviour corresponds with the agreed recommendations from a healthcare provider or professional **[7]**. Also, Morinsky, Green and Levine (1986) defined adherence as the extent to which patients follow the instructions they are given for prescribed treatments.

Medication adherence is one of the most significant factors in the management and treatment of mental health problems **[2]**. Scholars have reported that the overall compliance rate for patients with chronic mental disorder was lower when compared with individuals with physical disorders **[8]**. Evidently, quite a large body of scientific literature have reported that significant association between poor medication adherence and increase in relapse rate and length of hospitalization, as well as increased risk for hospitalization and poor health outcomes for disorders that require extensive use of medication such as psychotic disorders, anxiety disorders and schizophrenia **[9]**. In some quarters, medication non-adherence in chronic disorders has been described as taking less than eighty percent of prescribed treatment **[10]**.

Given that psychotomimetic medications often lead to experiences that cause considerable subjective distress and cognitive disorientation by mimicking symptoms of psychosis, psychiatric patients exposed to these categories of drugs and the extent to which they adhere to medication

should remain at the forefront of compliance monitoring, and by so doing, this would form the basis of therapeutic relationship among patients and healthcare professionals **[11]**. Therapeutic alliance in healthcare professional practice have considered as a panacea to situations where drug administration alone does not produce the expected health outcome. Therapeutic relationship as defined by Austin, Bergum, Nuttgens and Peternejl-Taylor, (2006) refers to a purposeful, goal-directed relationship between a clinician (doctor/nurse or psychologist), and a patient that is directed at advancing the best interests of the patient and his or her health outcome. Therapeutic relationships preserve the dignity, autonomy and privacy of patients receiving treatment **[12]**. Therapeutic relationship have been inconsistently associated with medication adherence, however, the process of influence have not been adequately explained in literature and thus, research studies in this direction are required, if the relationship between therapeutic relationship and medication adherence is to be fully understood.

Statement of Problem

The fundamental reason of adhering to medication is to obtain optimal health outcome **[13]**. Medication adherence is a growing concern to clinicians and care providers in psychiatric communities because of mounting evidence that non-adherence to medication regimen is prevalent and association with adverse health outcomes and higher cost in healthcare expenditure **[14]**. Non-adherence to medication has been and continues to be a major problem the world over, regardless of age, creed or ethnic affinity.

Studies in Nigeria have adopted diverse methodologies to estimate medication adherence among mentally impaired populations have shown conflicting results. This discrepancy in research evidence needs further exploration because poor adherence has not only been related with poor patient outcomes, illness complications and higher morbidity but also, adherence can cause direct and indirect increases in cost to the healthcare system. The investigation into the predictors of medication adherence in Nigeria would be a timely approach that promises cost effective incentives to both government at the primary healthcare level and the entire public. This is imperative because the full benefits of effective medication can only be achieved when patients adhere to prescribed treatment regimen. Therefore, this study has attempted to fill this chasm and resolve this issue with empirical and clinical emphasis.

Objectives of the Study

This study seeks to improve medication adherence in psychiatric patients exposed to psychotomimetic medications and how therapeutic relationship predict the level of medication adherence. The specific objectives are:

1. Test the extent to which side-effects of psychotomimetic medications predict medication non-adherence among psychiatric patients.
2. Determine the degree to which therapeutic relationship predict medication adherence among psychiatric out-patients.

Research Hypotheses

The following hypotheses were formulated with regard to the study objectives:

1. Side-effects of drugs will significantly predict medication non-adherence among psychiatric patients exposed to psychotomimetic medications.
2. Therapeutic relationship will significantly predict medication adherence among psychiatric patients exposed to psychotomimetic medications.

Method

Research Design

A cross-sectional survey design was adopted for this study. The dependent variable would be patient's level of medication adherence. The predictor would be psychotomimetic medication side-effect and therapeutic relationship.

Research Setting

Psychiatric out-patients receiving treatment and consultation at the Federal Neuro-Psychiatric Hospital Harvey Road, Yaba Lagos State, Nigeria constitute the population of this study. Federal Neuro-Psychiatric Hospital Harvey Road, Yaba Lagos State is selected because of the integrated health programme, which has increased public health sector access to patients from all parts of the country. Also, the influx of patients to the health facility is one of the major reasons why this locale is been considered.

Participants

A total of 36 out-patients were selected for this study. These

out-patients were receiving treatment or consultation at the Federal Neuro-Psychiatric Hospital. The participants' age, gender and marital status were also obtained. The total numbers of participants for this study were thirty-six (36). There were more males (65%) than females (35%). Majority of participants were between the ages of 31-50 years. Data on religious affiliation showed that Christians made up 56% (20) of the total number of samples and participants who reported to be of Islamic orientation made up 37% (13) and those who reported traditional belief were 7% (3).

Sampling Techniques

Snowballing sampling technique was used to select study participants at the Federal Neuro-Psychiatric Hospital. Snowballing was done in such a way that existing patients were told to recruit or encourage other participants and acquaintances willing to participate in the study This non-probability sampling technique was used due to the Covid-19 restrictions in place at the time of conducting this study.

Instruments

Relevant data will be gathered through of validated questionnaire which would comprise of 4 sections (Section A-D). Section A: Socio-Demographic Data**.** This section comprises information about socio-demographic information. These include age, gender, marital status and religious affinity. Section B: Morinsky Medication Adherence Scale (MMAS), contain items measuring coping with medication adherence as designed by Morinsky *et al.* (1986). This is a 4-item scale that measures the risk of medication non-adherence. All items are predicted on a 2-point Likert scale (Yes = 0; No =1). Sample a items include; 'do you ever forget to take your medicine', 'when you feel better do you sometimes forget to take your medicine'. Morinsky reported a Cronbach's alpha of .92. Section C: Liverpool University Neuroleptic Side-Effect Rating Scale (LUNSERS), contain items measuring the extrapyramidal side-effects developed at the Liverpool University in 2011. It is a 51-item scale designed to measure extrapyramidal side-effects. LUNSERS is rated on a 4-point scale (0= Not at all, Very Little =1, A little = 2 Quite A lot = 3 and Very Much = 4). Sample items are: "parts of my body are moving on their own" (physiological), "difficulty in remembering things" (psychological), and "lack of emotions" (psychological). High scores on the LUNSERS would indicate that the patient is experiencing high adverse extrapyramidal side-effects. The possible range of total for men is 0-164 while for women 0-156. Section D: Therapeutic Relationship Scale (STAR-P) patient's version was developed by McGuire, *et al.* (2007). The total STAR-P scores are obtained by adding the scores of each of three subscales which are the 12 items. This scale was developed specifically to assess the clinician-patient therapeutic relationship in community psychiatry. The STAR- P comprises of three sub-scales: positive collaboration, positive clinical output, non-supportive clinician input and emotional difficulties. The test-retest reliability was .76. The STAR-P is rated on a 4-point Likert type scale ranging from 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Always =4. A total STAR-P score and three subscale scores can be obtained. Before scoring, the scores for the non-supportive clinician input subscale are reversed. Subtract each of the items ratings n this subscale from 4; therefore, a rating of 0 becomes 4, a rating of 1 becomes 3, the subscales are obtained by summing the relevant subscales items. Samples of item include 'My clinician and I are open to one another', 'I believe my clinicians withholds the truth from me'. A Cronbach alpha of .91 was reported.

Data Analysis

The Pearson Product Moment Correlation analysis will be used to evaluate the interrelatedness of demographic variables used in the study. However, hypothesis 1 and 2, was measured using Multiple regression analysis.

Results

In **Table 1**, it was observed that age of participants was significantly and positively related to medication adherence [r (36) = .26**, p < .01] and participants gender [r (36) = .01, p < .01], indicated that there was no significant relationship with medication adherence. Similarly, religious affiliation did not show significant relationship with medication adherence [r (36) = .07, p > .05]. The result also showed that there was a significant inverse relationship between psychotomimetic side-effect and perceptions of medication adherence [r (36) = -.33**, p < .01]. This implies that as psychotomimetic side-effects increase, medication adherence decreases. The relationship between therapeutic relationship and medication

adherence was positive [r (36) = .39***, p < .001], such that, as participants indicate a higher level of therapeutic relationship so also does the level of degree of medication adherence increases in the psychiatric patients.

Table 1: PPMC Correlation Matrix Showing the Relationships among Study Variables

Variables	1	2	3	4	5	6
1. Age	**1**	**10**	**13****	**15**	**18****	**26****
2. Gender		**1**	**03**	**02**	**04**	**02**
3. Religious Affiliation			**1**	**08**	**05**	**07**
4. Psychotomimetic Side-Effects				**1**	**-22****	**-33***
5. Therapeutic Relationship					**1**	**39*****
6. Medication Adherence						**1**
Mean	35.66	12.33	7.17	56.18	32.63	26.34
SD	6.33	3.53	1.44	3.34	6.65	4.22

Note: ***/+++ p < .001, ******/++ p < .01, *****/+ p < .05, N=36, Gender: Male-1, Female-2;

Religion: Christianity-1, Islam-2; Others -3.

Results of PPMC is presented in **bold** form.

Table 2: Summary of Multiple Regression Analysis Showing the Extent of Prediction of Psychotomimetic Side-Effects and Therapeutic Relationship on Medication Adherence among Psychiatric Patients Exposed to Psychotomimetic Drugs.

Dependent	Independent	β	t	p	R	R^2	df	F
Medication Adherence	Psychotomimetic Side-effects	-.35	-.43	<0.05	.29	.52	36(3)	8.62**
	Therapeutic Relationship	.40	.54	<0.01				

**<0.01* p<0.05, N=36

The results of the **Table 2** above, indicate that psychotomimetic side-effects indirectly (inversely) predicted medication adherence among psychiatric patients exposed to psychotomimetic drugs [β = .35, p <0.01]. The outcome of this result indicates that psychotomimetic side-effects had an inverse prediction on medication adherence among psychiatric patients exposed to psychotomimetic drugs. Therefore, hypothesis 1 was supported. The outcome of the results indicated that therapeutic relationship was a significant predictor of medication adherence among psychiatric patients exposed to psychotomimetic drugs [β = .40, p <0.01]. This result suggests that there is positive significant relationship between participant's perception of strong professional relationship between the patients and the primary healthcare providers.

Discussion

The outcome of the study suggests that psychotomimetic side-effect indirectly or inversely predicted medication adherence. This position is in consonance with previous studies **[10,15]**, and it is believed that the effects of psychotomimetic medication provide quite of number of side-effects in patients and for some it varies in that. in some patients it could be severe cases of psychosis related symptoms and for others it could a mixed feeling of incoherent thought patterns and speech disorganization and to a large extent it can induce hallucinations and delusions, when all this symptoms are put together, the resultant effect can reduce medication adherence in psychiatric population, owing to the unpleasant feeling that result from the extensive use of the psychotomimetic medication. Most side-effects of psychotomimetic medication have been significantly associated with reduced likelihood of medication adherence **[16]**.

In addition, the results from **Table 2** indicated that therapeutic

relations signifcantly predicted medication adherence. Several studies **[17]** have coroborated this result. For example, found that therapeutic relationship is linked with improved adherence to medication among patients with mental health problems, such as patients diagnosed with schizophrenia. As such, patients and clinicians' perspectives of the therapeutic relationship are important. Thomas and McCabe (2012) revealed that clinician-patient alliance and communication are associated with better patient medication adherence. This is because when an alliance is formed the patient develops interest and trust for the clinician this can lead to better health outcomes for the patient.

Recommendation

Based on the findings of this study, several recommendations has been made to help address and proffer sustainable scientific, cultural-sensitive solutions to problems that hamper medication adherence among psychiatric patients. The following recommendations were suggested:

1. Increase one-on-one communication between patients and health care professionals about knowledge of medications and the consequences of not taking them as prescribed and give clear information about the individuals' medications. Studies have revealed that most patients' living with mental health disorders often report that they would be more likely to take their medication as prescribed if they were more informed about the potential negative health consequences of non-adherence. Therefore, it is clear there is an opportunity to drive meaningful change and if this step is adequately implemented it is projected that they could be a 70 percent effectiveness rate in medication adherence.
2. National quality improvement strategies should be formulated and implemented to explicitly recognize that medication adherence and effective use of medicines are critical to improving health care quality and clinical outcomes. By so doing, health information technology and related standards must improve the flow of timely and complete information among providers and between patients and providers, facilitate patient engagement in their care, and enable clinicians and healthcare stakeholders (hospital management boards) to identify and address gaps in patients' medication use.
3. Critical to the success of medication adherence strategies is encouraging clinicians to implement best practices and effectively communicate to their patients the importance of following treatment plans; and provide medication support services to patients and family caregivers. This helps to improve therapeutic relationship (nurse-patient) through empathy and professional intimacy that facilitates diagnosis accuracy.

Conclusion

Medication adherence to psychiatric treatment is often a challenge for practicing clinicians. As a result, research focusing on this area, is of paramount importance. From a global view point, the World Health Organization (WHO) projects that only about 50 percent of patients typically take their medicines as prescribed. Non-adherence affects people of all ages and genders and is just as likely to involve higher-income, well-educated people as those at lower socioeconomic levels. Although the challenge of poor medication adherence has been discussed and debated for some time, these problems have generally been overlooked as a serious public health issue and, as a result, have received little direct, systematic, or sustained intervention. Further, adherence rates suffer from the fragmented approach by which hospitals, health care providers, and other parts of the health delivery system intervene with patients and caregivers. Consequently, many leading healthcare organizations advocate for a comprehensive multidisciplinary approach through coordinated action by health professionals, researchers, health planners and policymakers. The study has revealed important predictors of medication adherence; factors such as, therapeutic relationship between patient and the clinician that often lead to increased levels of medication adherence.

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