

## ORIGINAL ARTICLE

**Medication Non-Adherence in Anxiety and Depression**

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**ABSTRACT**

**Objective:** To find out the frequency of non-adherence in patients with anxiety and depression, receiving treatment in teaching hospitals.

**Study Design:** A cross-sectional descriptive study

**Place and Duration of Study:** The study was conducted at Pakistan Railway Hospital, Rawalpindi and Riphah International Hospital, Islamabad from 1<sup>st</sup> June 2018 to 31<sup>st</sup> December 2018.

**Materials and Methods:** After approval from Ethics review committee (ERC) and informed consent of the participants, those meeting inclusion criteria; 310 patients (n=310) were included in this study. Out of these 151(n=151) patients were suffering from depression, while 159(n=159) were having anxiety. Patients with mixed anxiety and depression were excluded. Demographic details (age, gender, education, marital status) were recorded. International classifications of diseases (ICD-10) diagnostic guidelines and clinical assessment was used to confirm diagnosis of anxiety and depression. The Morisky Medication Adherence Scale (MMAS-8) was used to measure levels of non-adherence. Data was analyzed using SPSS-20 and results compiled accordingly.

**Results:** Out of 151(n=151) depressed patients 81.4% have low to medium adherence to pharmacological treatment, while out of 159(n=159), patients with anxiety 78% have medium to low adherence to prescribed treatment. Medication non-adherence was statistically significant in both anxious and depressed patients.

**Conclusion:** Patients suffering from anxiety and depression show significant non-adherence to pharmacological treatment.

**Key Words:** *Anxiety, Depression, Medication Adherence, Medication Non-Adherence.*

**Introduction**

The WHO (World Health Organization) defines adherence as “the extent to which a person's behavior (including medication-taking) corresponds with agreed recommendations from a healthcare provider”.<sup>1</sup> It includes the initiation of the treatment, implementation of the prescribed regime, and continuation of the pharmacotherapy.<sup>1</sup> Non-adherence to prescribed medicines is common in patients with chronic diseases, which leads to adverse consequences.<sup>2</sup> The WHO, in its 2003 report stated that non-adherence may have a far more profound effect on the recovery of the patients.<sup>2</sup> As

per WHO, the different components contributing to poor adherence can be classified into five categories: financial issues, treatment related elements, patients-related variables, condition-related elements, and services related elements.<sup>2</sup>

Non-adherence may be intentional or unintentional behavior.<sup>3</sup> If a patient does not take the medicine because of forgetfulness or lack of access, it is called unintentional. In contrast, if the patient does not follow the prescription because of his or her personal beliefs or perception of medicine, then it is known as intentional non-adherence.<sup>3</sup> With respect to depression, studies have clearly shown that patients who are non-adherent are more likely to have increased severity of the illness, experience more relapses, have greater number of hospital emergency visits/hospitalizations and decreased remission rates.<sup>4</sup> Those factors which have consistently been demonstrated to have a negative impact on medication adherence rates in patients suffering from psychiatric disorders include patient related factors (young, unmarried, male), psychological factors (i.e. poor insight, denial of illness), medication-related factors (i.e. side effects),

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and social/environmental factors (i.e. quality of therapeutic alliance, family support).<sup>5,6</sup> Non-adherence leads to poor clinical outcome, increased morbidity, mortality and wasteful increase in health care expenditure.

Mental health issues are common around the world. In this respect anxiety disorders account for 16% of the worldwide prevalence of mental disorders, whereas, the prevalence of mood disorders is around 12%. Another dimension of this issue is the fact that more severe psychiatric disorders have higher association with non-adherence.<sup>8</sup> A Systematic literature review revealed that adherence depended on the type and severity of psychiatric disorders (Major depressive disorder: 28– 52%, bipolar disorder 20–50 %, schizophrenia: 20– 72% and anxiety disorder 57%).<sup>8</sup> The importance of adherence was emphasized in another paper which had been widely cited in the literature.<sup>9</sup> Thus measuring and monitoring adherence is important for both researchers and clinicians.<sup>10</sup> Also, exact assessments of adherence will help to enhance proper medicine use in patients with mental disorders.

Despite the fact that non-adherence to prescribed treatment leads to excessive morbidity and mortality, this issue has not been given due attention by researcher in Pakistan; therefore there is a need to study this domain of clinical services in patients with common mental disorders. The objective of this study was to find the frequency of non-adherence in patients with anxiety and depression receiving psychiatric treatment in hospital setting.

## Materials and Methods

This cross sectional descriptive study was conducted in Pakistan Railways Hospital, Rawalpindi and Riphah International Hospital, Islamabad which are teaching hospitals of Islamic International Medical College, Rawalpindi. The duration of study was from 1<sup>st</sup> June 2018 to 31<sup>st</sup> December 2018. Approval was obtained from the Ethics review committee (ERC) of Islamic international medical college; Riphah International University and informed consent was obtained from the participants. Data collection was done by the teaching faculty with help of final year medical students and students of psychology, who were undergoing internship training and were working under direct supervision of the teaching faculty. By

using convenient sampling technique, three hundred and ten (n=310) patients from both genders between ages 18-60 years, meeting the inclusion criteria were invited to participate in the study. Out of these 151(n=151) patients were suffering from depression, while 159(n=159) were having anxiety. Patients with mixed anxiety and depressive disorders, other psychiatric disorders or having co-morbidities were excluded. Demographic details (age, gender, education, marital status) were recorded and International classifications of diseases (ICD-10) diagnostic guidelines and clinical assessment, was used to confirm diagnosis of anxiety and depression. After 3-6 months of out-patient follow up, the Morisky Medication Adherence Scale (MMAS-8) was used to measure levels of non-adherence. Data was analyzed using SPSS-20 and results compiled accordingly.

The Morisky Medication Adherence Scale (MMAS-8) consists of eight items with two types of responses to detect barriers to adherence. Items 1-7 are dichotomous (yes/no response), and item 8 is a 4-point Likert scale (from “never” to “always”) to measure factors such as forgetfulness. MMAS-8 has been validated with good sensitivity and specificity in patients with chronic diseases.<sup>11,12</sup> Hence, it is an acceptable self-report measure for adherence to medication. Patients who required assistance were provided guidance to understand the questionnaire.

## Results

**Table: I Demographic & Clinical Variables of Depressive Patients (n=151)**

| Gender                     | Frequency/Percentage |
|----------------------------|----------------------|
| Female                     | 103(68.2%)           |
| Male                       | 48(31.8%)            |
| <b>Age group in years</b>  |                      |
| 18-25                      | 14(9.3%)             |
| 26-40                      | 67(44.4%)            |
| 41-60                      | 70(46.4%)            |
| <b>Education</b>           |                      |
| No formal school education | 30(19.9%)            |
| Under matric               | 43(28.5%)            |
| Matric/Intermediate        | 48(31.8%)            |
| Graduates                  | 18(11.9%)            |
| Post-graduates             | 12(7.9%)             |
| <b>MMAS Scores</b>         |                      |
| High                       | 28(18.5%)            |
| Medium                     | 63(41.7%)            |
| Low                        | 60(39.7%)            |
| <b>Depression scores</b>   |                      |
| Mild                       | 68(45%)              |
| Moderate                   | 33(21.9%)            |
| Severe                     | 50(33.1%)            |

As shown in table I, out of 151 (n=151) depressed patients 68.2% were females and 31.8% were males. Similarly 90.8% of the participants were between age 26-60 years and 60.3% have educational level below intermediate. 39.7% have low adherence (MMAS score<6), while 41.7% had medium adherence (MMAS score <8). As far as severity of depression is concerned 45% had mild depression while 55 % moderate to severe depression.

**Table: II Demographic & Clinical Variables of Anxiety Patients (n=159)**

| Gender                     | Frequency/Percentage |
|----------------------------|----------------------|
| Female                     | 113(71.1%)           |
| Male                       | 46(28.9%)            |
| <b>Age group in years</b>  |                      |
| 18-25                      | 28(17.6%)            |
| 26-40                      | 75(47.2%)            |
| 41-60                      | 56(35.2%)            |
| <b>Education</b>           |                      |
| No formal school education | 40(25.2%)            |
| Under matric               | 49(30.8%)            |
| Matric/Intermediate        | 55(34.6%)            |
| Graduates                  | 9(5.7%)              |
| Post-graduates             | 6(3.8%)              |
| <b>MMAS Scores</b>         |                      |
| High                       | 35(22.0%)            |
| Medium                     | 75(47.2%)            |
| Low                        | 49(30.8%)            |
| <b>Anxiety scores</b>      |                      |
| Mild                       | 117(73.8%)           |
| Moderate                   | 28(17.6%)            |
| Severe                     | 14(8.8%)             |

As shown in table II out of 159 (n=159) patients with anxiety disorder, 71.1%) were females and 28.8% were males. Similarly 82.4% were between age 26-60 years and 65.4% had education below intermediate. 30.8% of the patients had low adherence (MMAS score<6), while 47.2% had medium adherence (MMAS score <8). Out of the total sample 117(73.8%) had mild anxiety while 26.4% had moderate to severe anxiety.

**Table: III Pearson Correlation MMAS-8 & Depression (n= 151)**

| Pearson correlation | Depression |
|---------------------|------------|
| <b>MMAS-8</b>       | -.309**    |
| Level of sig.       | 0.00       |

\*\*P<0.01

As shown in tables III there is a negative relationship between medication adherence and depression. It means as the severity of depression increases the

medication adherence decreases. The relationship is highly significant.

**Table: IV Pearson Correlation MMAS-8 & Anxiety (n= 159)**

| Pearson Correlation | Anxiety |
|---------------------|---------|
| <b>MMAS-8</b>       | -.179*  |
| Level of sig.       | .02     |

\*p< 0.05

As shown in tables IV there is a statistically significant negative relationship between medication adherence and anxiety. As the anxiety increases the medication adherence decreases.

**Discussion**

The current study shows that 81.4% of depressed patients have low adherence to pharmacological treatment, while 78% of patients with anxiety also have low adherence to prescribed treatment. Moreover medication adherence has a negative correlation with anxiety and depression severity, which means when the level of anxiety and depression increases the adherence to medication decreases. The exact cause of this association cannot be pin pointed because of the cross-sectional study design; however, the lack of interest and motivation and poor concentration in depressed patients may be a contributory factor. Similarly fear of medication and possible side effects or dependence may be a reason for non-adherence in patients with anxiety. A study carried out in Pakistani population showed that out of 100 psychiatric patients receiving outdoor treatment 18(18%) were non-compliant. This study defined non-compliance as attending the OPD after a lapse of 15 days or more from the recommended date of follow up visit. The main reasons for non-compliance to follow-up treatment were denial of disease and non-affordability of treatment.<sup>13</sup> The sample size in this study was small and no particular diagnosis was mentioned, which meant that patients with all mental disorders were included in that study. In our study only patients with anxiety and depression were included and frequency of low adherence to medication was quite significant as already mentioned. Previous studies on this subject had also shown that non-adherence was common in patients with depression.<sup>14-18</sup> In a study on non-adherence in 367 males patients with major depressive disorder receiving outpatients care, 63.1% of the participants stopped taking

medications without consulting their physicians.<sup>14</sup> However, this study was based upon a retrospective chart-review, while our study involved direct interaction with patients and we measured non-adherence with a valid and reliable scale. In a systematic review of thirty-two observational studies, it is found that white ethnicity and older age is associated with better adherence to treatment, while severity of depression does not play an important role in predicting compliance.<sup>15</sup> However, this review was limited to studies in the English and Spanish populations. In another cross sectional study involving 103 psychiatric patients, 72(69.9%) patients were non-adherent.<sup>16</sup> In this study the sample size was small and different measurement tools other than MMAS-8 were used for adherence. Patients with a variety of psychiatric diagnosis were included. In yet another qualitative study, 30 patients with depression were interviewed in depth and it was found that the factors specific to patients and side effects of antidepressants were the main contributory factors towards non-adherence.<sup>17</sup> In contrast, our study has a descriptive design and depression severity is inversely related to non-adherence. In a recent study depression with recurrent episodes, decrease or loss of interest and atypical symptoms were found to be risk factors for non-adherence, whereas selective noradrenaline reuptake inhibitor (SNRI) treated first episode was a protective factor against non-adherence.<sup>18</sup> The authors in this study did not mention any association with severity of depression. Our study is focused on anxiety and depression severity and their relationship with non-adherence, as there was no local evidence available on this subject. However, both studies indicate that clinical characteristics of the patient may play an important role in medication non-adherence. In another recent study stressed that the management of major psychiatric disorders is highly affected by medication non-adherence.<sup>19</sup> The authors recommended an integrated approach to reduce the burden of medication non-adherence and stressed that doctors should pay much more attention on educating patients with risk of non-adherence.

The above mentioned discussion clearly shows that non-adherence is a major issue in psychiatric patients, particularly those suffering from

depression. In Pakistan, there is a knowledge gap regarding various demographic and clinical variables involved in treatment non-adherence in psychiatric patients. Studies in Pakistan have found that the prevalence of anxiety and depression ranges from 22 -60%.<sup>20</sup> In order to deliver effective treatment, we need to fully understand the issue of non-adherence by generating local evidence on this subject. In clinical practice it is a common observation that an empathetic relationship and medication related education of patients can improve adherence to treatment. However, we need to carry out more studies in order to understand and manage non-adherence related factors in patients with anxiety and depression.

### Conclusion

Patients with anxiety and depression show significant non-adherence to treatment. This non-adherence is highly significant in patients with depression, and its severity shows an inverse relationship with adherence. Further studies are needed to clarify the role of psycho-education, therapeutic alliance and the role of socio-cultural factors in non-adherence to treatment in patients with anxiety and depression. By generating local evidence and better understanding on medication non-adherence, the clinician will be better able to identify this issue and prevent its adverse consequences on patients and health care delivery.

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