

# Medication Adherence Assessment Scale by Mrs. Hajra Patel and Dr. Jitendra Vaghasiya

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## ABSTRACT

**Background:** During literature review a multiple factor comes to the light which are responsible for medication Non-adherence. On the bases of that factors particulars questions are framed and a scale is developed to assess medication adherence and factors leading to non-adherence. On the bases of assessment pharmacist can counsel the patient for better therapeutic outcome in chronic disorder and also particular factors can be focus for effective counselling. **Materials and Methods:** Scale is been validated and will used to assess patients in chronic disorders like rheumatoid arthritis, hypothyroidism, and chronic obstructive pulmonary disease in tertiary care hospital. After assessment pharmacist can counsel the patient to improve medication adherence. **Conclusion:** Different scales are available for adherence assessment with number of limitations and lacks. In attempt to overcome these limitations new scale has been developed considering all the affecting factors for non-adherence and possible askable question to determine factors.

**Keywords:** Medication adherence assessment, Adherence assessment scales, Medication adherence.

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## INTRODUCTION

### Drugs don't work in patients who don't take them." – C.Everett Koop, MD.<sup>1</sup>

To overcome medication non-adherence in chronic disorder, A pharmacist can play a very important role by doing patient counselling and this can be done using different scale for medication adherence assessment and focus the particular factor responsible for medication non-adherence.

Adherence has been defined as the "active, voluntary, and collaborative involvement of the patient in a mutually acceptable course of behaviour to produce a therapeutic result. Medication adherence usually refers to whether patients take their medications as prescribed, as well as whether they continue to take a prescribed medication.<sup>2</sup>

According to WHO, in chronic disorders, medication adherence can be observed up to 50% in developed countries. This is one of the crucial health issues. That is why improving medication non-adherence is very essential.<sup>3</sup>

In the case of chronic disorders like hypertension, diabetes, tuberculosis, thyroid, rheumatoid arthritis, and COPD (chronic obstructive pulmonary disease), the major concern is medication non-adherence. which compromises the treatment quality, cost effectiveness, cure rate, and patient's quality of life. To overcome this issue, healthcare professionals can be engaged and the counselling regarding proper medication adherence can be very useful.

For better counselling, first assessment of medication non-adherence and particular factors involved in an individual's medication non-adherence is required. For that purpose, different medication adherence assessment scales are available. In the adherence assessment scales, a questionnaire is given with respect to different scales. A number of questions are asked to patients, and on the basis of their answers, a score has been given. Factors can be determined based on answers in order to counsel patients. In assessment scale questions, the factor associated with adherence is evident. As a result, a councilor can relate the factors affecting the individual for his/her non-adherence based on a yes or no answer. pharmacist can counsel the patient for adherence and try to satisfy the issues related to medication non-adherence.

There are a number of different adherence evaluation scales available, but all scales have their own limitations. There is no gold standard scale available for assessment of adherence.<sup>4</sup> So



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**Table 1: Factors affecting medication non-Adherence in chronic disorders.**

Category	Factors
Patient-centered factors <sup>6-15</sup>	Demographic factors: Age, <sup>6</sup> Ethnicity, <sup>7</sup> Gender, <sup>8</sup> Education, <sup>9</sup> Marriage status, <sup>10</sup> Psychosocial factors: Beliefs, <sup>11</sup> Motivation, Attitude Patient-prescriber relationship. <sup>12</sup> Health literacy. <sup>13</sup> Patient knowledge. <sup>14</sup> Physical difficulties Tobacco smoking or alcohol intake. <sup>15</sup> Forgetfulness. <sup>14</sup> History of good compliance.
Therapy-related factors <sup>16-19</sup>	Route of administration, <sup>16</sup> Treatment complexity, <sup>17</sup> Duration of the treatment period, <sup>18</sup> Medication side effects, <sup>19</sup> Degree of behavioral change required, <sup>17</sup> Taste of medication, <sup>16</sup> Requirement for drug storage.
Healthcare system factors <sup>14,20,21</sup>	Lack of accessibility, <sup>14</sup> Long waiting time, <sup>20</sup> Difficulty in getting prescriptions filled, <sup>14</sup> Unhappy clinic visits. <sup>21</sup>
Social and economic factors <sup>14,22,23</sup>	Inability to take time off work, <sup>22</sup> Cost and income, <sup>14</sup> Social support. <sup>23</sup>
Disease factors <sup>24,25</sup>	Disease symptoms, <sup>24</sup> Severity of the disease, <sup>25</sup>

to overcome these limitations, one more assessment scale has been developed, which is named as Mrs. Hajra & Dr. Jitendra's medication adherence assessment scale.

### Factors affecting medication Non-adherence in chronic disorders<sup>5</sup>

Various factors are responsible for medication non-adherence in chronic disorders which are mentioned in Table 1. These factors are considered to design the questionnaire scale.

**Table 2: Reasons involved in medication non-adherence.**

Categories	Examples
Health system	Poor quality of provider-patient relationship, poor communication; lack of access to healthcare; lack of continuity of care.
Condition	Asymptomatic chronic disease (lack of physical cues); mental health disorders (e.g., depression).
Patient	Physical impairments (e.g., vision problems or impaired dexterity); cognitive impairment; psychological/behavioral; younger age; non-white race.
Therapy	Complexity of regimen; side effects.
Socioeconomic	Low literacy; higher medication costs; poor social support.

### Reasons involved in medication non-adherence<sup>26</sup>

Here we can find various factors that are responsible for medication non-adherence as well as the reasons which are mentioned in Table 2, that are commonly observed for not following proper medication. It is also observed that while selecting medication for a patient, the patient's choices like taste, route of administration, income, educational status, and their medication taking attitude are not priorities. And that is why sometimes non-adherence is encountered. So, to resolve these issues, the practice of patient counselling can be very helpful because the patient's choices can be either satisfied with proper medication selection or at least the patient can be made to understand the importance of following a proper treatment plan.

These factors suggest a strong requirement for patient counselling in normal clinical practice, which is very widely not observed in normal clinical practice. Also, planning for better counselling can be done and to execute that, some good scales can be used to figure out specific factors and reasons related to a patient's medication non-adherence.

### MATERIALS AND METHODS

One scale has been developed after studying various factors and reasons for non-adherence. This scale includes 09 questions, each mentioned in Table 3 and each question determines different factors. On the basis of yes/no answers, a score will be given. Score will set different levels of adherence, for example, high adherence, medium adherence, and low adherence.

**Table 3: Developed questionnaires and scale.**

Sl. No.	Questions	Score
1	When did you last visit your doctor?	As per schedule – 01 Not as per schedule – 00
2	Since when you are consulting with same doctor?	Since last four visits – 1 Since last six visits – 2 Since last 8 visits – 3 Less than four visits – 0
3	Do you purchase all your prescribed medicines?	Yes – 1 No – 0
4	Do you know how to take your all medicines?	Yes – 1 No – 0
5	Do you skip any of your daily dose?	Yes – 0 No – 1
6	Do you feel any uneasiness after taking your medications?	Yes – 0 No – 1
7	Are you taking any other treatments for the same disease?	Yes – 0 No – 1
8	If you ever take half your medicines or discontinue when symptoms disappear?	Yes – 0 No – 1
9	Do you know the importance of each medicine?	Yes – 1 No – 0

This scale has been validated by well-reputed physicians working in different departments related to chronic disorders.

### Developed Questionnaires and Scale

#### Scoring criteria

<4 = low adherence.

4-7 = medium adherence.

8-9 = high adherence.

#### Determinations of new developed scale

This questionnaire scale is designed by keeping the factors affecting medication non-adherence in mind, mentioned in Table 1. So, by asking certain questions, the pharmacist will figure out some specific factors that are contributing to medication non-adherence mentioned in Table 4 and, hence, the pharmacist can counsel the patient to overcome such issues. This direct conversation between patient and pharmacist can aid in improving medication adherence in chronic diseases.

**Table 4: Determinations of each question.**

Sl. No.	Question	Determinations
1	When did you last visit your doctor?	Self-regulation.
2	Since when you are consulting with same doctor?	Patient–doctor compliance
3	Do you purchase all your prescribed medicines?	Cost effectiveness, medicine burden.
4	Do you know how to take your all medicines?	Medication knowledge about route of administration, inhalers, before or after food.
5	Do you skip any of your daily dose?	Self-management and self-regulations, forgetfulness.
6	Do you feel any uneasiness after taking your medications?	Adverse effects outweigh treatment benefits.
7	Are you taking any other treatments for the same disease?	Patient beliefs (unani, homeopathy, ayurvedic).
8	If you ever take half your medicines or discontinue when symptoms disappear?	Knowledge about period of treatment.
9	Do you know the importance of each medicine?	Knowledge about disease and management.

### Comparison of validated scale with morisky medication adherence scale (MMSA-8)

In MMAS8 many limitations were found, as most of questions are related to forgetfulness. Example: question 5 (if you take all your medicines yesterday?) has answer 'NO' then automatically question 1 (do you sometimes forget to take your medications?) and 8 (how often do you have difficulty remembering to take all your medicines?) will be also showed score, so total score will be 3 with only 1 answer.

Similarly, if question 4 (when you travel or leave home, do sometimes forget to bring along your medication?) will be yes automatically 1 and 8 will give score this shows same alike questions and can be taken as single question.

### RESULT

After reviewing literature on the bases of different factors which are affecting medication non-adherence the scale is been developed and each question conclude factor for medication

adherence or non-adherence. This scale is going to be used to counsel patients for medication non-adherence for the patients receiving treatment for chronic disorders.

## DISCUSSION

There are numerous self-report assessments available to gauge medication adherence. There is no ideal scale for assessing adherence due to the variety of chronic conditions. Each of the existing adherence assessment scales has advantages and disadvantages. The Medication Adherence Assessment Scale was created and confirmed by Mrs. Hajra Patel and Dr. Jitendra Vaghasiya in an effort to get over the aforementioned obstacle. This scale has been approved by a doctoral competent team of pharmacists and other expert doctors. Each question on this scale is connected to a separate set of variables. Therefore, based on patient responses, it can be deduced which specific causes are more likely to result in non-adherence in a given patient. Based on this insight, pharmacists can also engage in helpful patient counselling that addresses the concerns and problems that are keeping patients from adhering. Patients' medication adherence is assessed in the majority of studies, however there are very few studies that provide information on the impact of patient counselling. Therefore, patient counselling and factor assessment can be put into practice after employing this form of questionnaire scale.

## CONCLUSION

After comparing the developed scale with already existing scales for assessment of medication adherence / non-adherence it can be said that the newly developed scale for medication adherence assessment by Hajra Patel and Dr. Jitendra Vaghasiya is covering most of the factors responsible for the medication non-adherence. All the questions included in the scale are pointing particular factors and after assessment of those factors, a pharmacist can effectively counsel the patients for particular factors and it can contribute to overcome medication non-adherence in chronic disorders.

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## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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