Medication Adherence

CROHN'S & COLITIS FOUNDATION

What Is Medication Adherence?

Medication adherence is defined as the process by which patients take their medications as prescribed. *(Chan et al., 2017)*

What Is Medication Non-Adherence?

Medication non-adherence is defined as the process by which patients do not take their medications as prescribed.

There are two types of medication non-adherence:

Accidental or unintentional non-adherence

- Accidental or unintentional non-adherence occurs from external factors, such as knowledge deficit regarding medication or error on the part of patient or provider (including prescribing or taking a medication).

Intentional non-adherence

- Intentional non-adherence is deliberate and largely associated with patient motivation, whereas unintentional non-adherence is non-adherence that is largely driven by a lack of capacity or resources to take medications. *(Arts et al., 2016)*

Risk Factors for Non-Adherence

Teatment related:

- Treatment-related non-adherence may be due to the taste or formulation prescribed.
    - As medications come in tablets, liquids, powders, topical, and other forms, the formulation can impact the ability and/or willingness of a patient to take or use the prescribed medications (i.e., "the pills are too big" or "I can't swallow pills").
    - If adverse to smell, texture, taste, or aftertaste of a prescribed medication, the patient may be less likely to adhere to medication regimen.
    - If medication needs to be specially formulated (i.e., compounded to liquid), this can delay treatment and impact adherence. For some, the process of compounding medications is not covered by insurance and requires an out-of-pocket cost, which may deter adherence.

- Scheduling – time and duration of therapy are important with adherence.
    - Medications that need administration during the day when a child is at school may be difficult, resulting in a missed dose.
    - There is also a risk for decrease in adherence with increase in dosing frequency. *(Arts et al., 2016)*

Patient/family related:

- Age as well as both cognitive and emotional development can impact the ability to understand the importance of medication adherence.
    - Younger children are dependent on caregivers to administer medications or medical treatments. If a caregiver has certain attitudes towards medications, this may influence the child's attitude about taking medications over time.
    - Adolescents can be affected by peer pressure, adverse effects of medications, and level of maturity.
- Culture may include language barriers and how caregivers perceive their child's illness.
- Family structure and caregiver beliefs surrounding medications may also contribute.
- Family structure – family size, parental marital status, familial stress and stability can impact adherence.
    - Single-parent households, large families, and families with increased conflict or stress have been shown to have increased non-adherence in patients.
- Socioeconomic status – lack of transportation, access to pharmacies, and the ability to pay for medications can impact adherence rates. *(Arts et al., 2016)*

Poor adherence to medication management can result in persistent symptoms and disease progressing. It increases the risk for hospitalization and surgical intervention. It can impact mental health, social interactions, and adjustment.

Assessment for Adherence

Tools for Measurement of Adherence

Medication adherence can be subjective based on provider and questions asked to the patient during a clinic visit. It is important that both providers and patients have an objective tool for measurement to ensure adherence to improve patient outcomes. There are many tools available to evaluate medical adherence. We have listed a few below. There is no ideal assessment tool, and each tool has variation.

- **Morisky Medication Adherence Scale (MMAS)—**This is an eight-question self-reported survey that measures specific medication adherence behavior. Each question has a yes/no response, and the last question has a five-point Likert response ranging from "always" to "never." A score of 8 or higher is predictive of higher levels of adherence. This is a copy-

right protected scale that is available for providers upon request. License requests to use the MMAS should be made via e-mail to dmorisky@gmail.com.

- **Medication Adherence Rating Scale (MARS)—**Used as a tool to measure adherence in many chronic diseases, this questionnaire includes five questions regarding medications and the frequency and consistency of taking medication. Questions are answered on a scale of 1-5 with 1 being "Always" and 5 being "Never." Higher scores are predictive of higher levels of adherence. *(Stone et al., 2021)*

Probabilistic Medication Adherence Scale (ProMAS) questionnaire was more recently developed and is better able to discriminate between patients' adherence levels. Results are closer to those obtained via other objective assessments and are widely available. *(Aluzaite et al., 2021)*

- **Beliefs about Medication Questionnaire (BMQ)—**This is an 18-item standardized scale assessing specific concerns about medication a person is taking in addition to beliefs about the importance of medication, potential for harm, and overuse of medication. This is scored using a five-point Likert-type scale and scored via computer by adding individual item scores to provide the total score in each category. *(de Castro et al., 2017)*
- **Pill counts** have been shown to be helpful when using electronic caps. These measure the frequency of bottles being opened and can measure pills being taken out of the bottle. Patients may have difficulty opening the caps, which can be a deterrent for using. *(de Castro et al., 2017)*
- **Pharmacy records of refill history—**This can be time consuming to the provider. While patients may not use the same pharmacy, incorporating a pharmacist into practice has been shown to improve rates of adherence. Pharmacists provide individualized education and can be available to patients in between appointments for questions. This may improve adherence rates. *(Kim et al., 2022)*
- **Electronic monitoring—**There are several apps available to help patients take their medications. It is beneficial to use an app that includes behavioral change techniques to promote increased adherence. Apps should include medication reminder features, education material, and behavioral modification features. Some apps that have been used include: Medisafe, MyTherapy, Memo Health, *(Carmody et al., 2021)*
- **Therapeutic drug monitoring** has not been established as a marker for adherence.

Tips and Tools to Improve Adherence

Providing tips and tools for medications can lead to improved adherence, better health outcomes, enhanced patient and caregiver quality of life, and reduced healthcare utilization. Below are examples of strategies that may be useful for patients and families.

- **Patient support programs** through drug manufacturers have been shown to provide education and adherence support for patients. These programs include medication counseling, training, and reminders to support patients and help improve medication-taking be-

haviors. As a result, these programs have improved healthcare costs for both patients and payers. *(Brixner et al., 2019)*

- **Behavior interventions** are strategies designed to influence behaviors through shaping, reminding, or rewarding desired behaviors. This may include audio or visual reminder systems, such as pill containers and feedback to patients from adherence assessment. Text or phone call reminders can also be helpful.
- **Cognitive behavioral therapy (CBT)** works on the principle that negative thoughts can block the abilities to act and learn new behaviors. CBT vary widely in content such as problem solving and increasing motivation to adhere. It has not been assessed in adherence in adult IBD, but problem-solving skill training (PSST) has been evaluated as a standalone intervention to enhance adherence in pediatric IBD. *(Chan et al., 2017)*

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