

Practical Approach to Measuring and Predicting Medication Adherence by Outpatient's Self-Report After More than 10 Years of Research in Psychopharmacology

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Schizophrenia, bipolar disorder and major depression are associated with nonadherence registered mean figures of around 50%, highlighting the relevance of having simple adherence tools to incorporate into daily clinical practice. For 10 years we have focused on self-report as an assessment method and have studied thousands of outpatients taking thousands of psychiatric medications in three countries. Measurement of treatment adherence during use of polypharmacy is a really complex task as patients could adhere differently to the various medications prescribed, making it essential to assess adherence to each individual medication. This was not possible until the introduction of the Sidorkiewicz Adherence Tool that allows one to separate adherence to each medication, whether poor or not. Health psychologists have developed the Health Belief Model which has not received enough attention by psychiatrists. Based on this model, we have focused on personality styles and specific beliefs concerning specific medications as possible predictors of poor adherence. We developed the Patient Health Beliefs Questionnaire on Psychiatric Treatment which provides 5 self-reported personality dimensions: negative aspects of medication (pharmacophobia), positive aspects of medication (pharmacophilia), high/low psychological reactance, high/low doctor health locus of control (HLOC) and high/low internal HLOC. Based on the Beliefs about Medicines Questionnaire we have developed a measure of skepticism, defined as a patient's high concern about adverse reaction to an individual medication and a low belief in its necessity. Our research experience based on the tools for assessing and predicting adherence is presented in a practical manner by using seven boxes and examples.

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INTRODUCTION

Schizophrenia, bipolar disorder and major depression are severe mental disorders that require patients to take the prescribed dosages of their medications, at the correct times, and for the duration indicated by their psychiatrists in order to obtain the full potential benefits of these medications and to reduce the risks of relapse, recurrence and hospitalization (Leucht et al., 2012; Ho et al., 2016; Ceraso et al., 2020; Johansen et al., 2021; Prieto-Vila et al., 2021). However, rates of nonadherence registered mean figures of around 50% in the three disorders (Lacro et al., 2002; Sajatovic et al., 2006; Semahegn et al., 2020), highlighting the relevance of having simple adherence tools to incorporate into daily clinical practice.

MEDICATION ADHERENCE: PSYCHOLOGICAL ASPECTS

The literature agrees that medication adherence is a complex phenomenon conditioned by multiple factors of diverse nature (World Health Organization, 2003). Both objective and subjective methods of adherence assessment can be used (De las Cuevas & de Leon, 2020). Nevertheless, it is a human behavior modulated by subjective components and should primarily be understood, addressed and investigated based on this dimension. The Health Belief Model (HBM) is very popular in health psychology journals. This model emphasizes the central role of the patient's subjective beliefs, understanding of illness, and treatment options in determining adherence to prescribed medications (Rosenstock, 1974; Sulat et al., 2018). Not unexpectedly, a patient's beliefs and attitudes toward treatment also influence medication adherence in psychiatric patients (De las Cuevas and de Leon, 2017; de Leon and De las Cuevas, 2017).

ACCUMULATED EXPERIENCE WITH SELF-REPORT TOOLS

There is no doubt that self-report as an assessment method can have the disadvantage of possible response biases (social desirability, acquiescence, set response, etc.); however, self-report has good validity and reliability, since it asks patients directly, inquires about their symptoms and what they feel or think, and allows the collection of a large amount

of data, both qualitative and quantitative, that can be gathered quickly and cheaply from large samples, and can be easily replicated (De las Cuevas & de Leon, 2020). For these reasons, self-reports have played an important role in our research, particularly when assessing large samples of thousands of outpatients taking thousands of psychiatric medications in three countries, including up to 80 different pharmacological compounds (De las Cuevas et al., 2021a; 2021b; 2021c; Lazary et al., 2021).

Adherence is more than a characteristic of each patient, influenced by the complexity of medication treatment and clinical conditions. It is also a property of medication classes and, therefore, it is necessary to use adherence tools that assess for each individual medication used by each individual patient. For these reasons, we validated the Sidorkiewicz Adherence Tool in Spanish; it proved to be a useful and valid instrument for assessing adherence to each individual medication taken by psychiatric outpatients undergoing polytherapy.

Concerning the assessment of patient beliefs and attitudes toward their prescribed medications, we have taken advantage of our previous experience in the validation of Spanish versions and use of questionnaires including the Drug Attitude Inventory (DAI) (Hogan et al., 1983), Hong Psychological Reactance Scale (Hong and Faedda, 1996), and Form C of the Multidimensional Health Locus of Control (HLOC) (Wallston et al., 1994) to develop the Patient Health Beliefs Questionnaire on Psychiatric Treatment (De las Cuevas & de Leon, 2019a). Recognizing the unquestionable value of the precursor instruments, psychiatric clinical practice requires instruments that consume the least time possible in their completion without losing validity or reliability.

Finally, since patients' medication-related concerns and their beliefs about necessity predict adherence, we have evaluated the interplay of these two dimensions by dichotomizing the attitudinal group characterized by skepticism, as generated by the Beliefs about Medications Questionnaire (BMQ) (low necessity, high concern) (Horne et al., 1999).

The next three sections review the self-report tools for measuring adherence and predicting adherence in individual patients based on their personality styles and their opinions about individual medications.

SIDORKIEWICZ ADHERENCE TOOL

Prior Instruments

Regarding the assessment of adherence to prescribed treatments, our research group stopped using our Spanish validated version of the Morisky Medication Adherence Scale (MMAS-8) (De las Cuevas & Peñate, 2015) which required fees and provided a unique measure of adherence that was not useful to us in a clinical setting characterized by polytherapy, in which patients may adhere to some but not to other medications.

Measurement of treatment adherence during polypharmacy is a really complex task as patients could adhere differently to the various medications prescribed, making it essential to assess adherence to each individual medication, which was not possible until the introduction of the Sidorkiewicz Adherence Tool (Sidorkiewicz et al., 2016). Box 1 describes in detail this valid, reliable instrument which classifies adherence to each medication in a dichotomous way (poor or not) and our PubMed search (including 9 articles, 5 of which are in psychiatry).

MEASURES OF PERSONALITY STYLE THAT MAY PREDICT ADHERENCE

Prior Instruments

In some studies, clinical characteristics of psychiatric patients can be statistically associated with adherence to prescribed medications, but no combination of these variables is accurate enough to allow psychiatrists to predict adherence. The idea that sociodemographic or clinical variables are the sole determinants of adherence is discredited by evidence that most of these variables are stable or change little over time while adherence in the same patient may vary widely over time (Horne, 1997; Levanthal et al., 2003; De las Cuevas & de Leon, 2020).

The HBM literature has not received enough attention in psychiatric journals and in our experience practicing psychiatrists are not familiar with these psychological dimensions and the scales used to measure them. To simplify, we call these dimensions self-reported dimensions and categorize them based on whether they focus on personality style or individual medications.

The DAI with 10 items (DAI-10) is a questionnaire that reports one's attitude toward medications in general (Hogan et al., 1983). Box 2 explains the complex process of going from the DAI-10 to the concepts of pharmacophobia, defined as fear of the use of pharmacological treatments, and pharmacophilia, defined as a positive attitude toward using or trying medications.

Dimensions of personality style obtained by self-report include psychological reactance and those included under HLOC, which refers to who is responsible for the management of a health disorder. Box 3 defines psychological reactance more precisely, but in simplified terms it is an emotional reaction toward rules perceived as a threat and is measured with the Hong Psychological Reactance Scale (Hong and Faedda, 1996). Box 4 summarizes the HLOC's two dimensions, the patient (internal) dimension and the doctor dimension, which are important in psychiatric patients.

The Patient Health Beliefs Questionnaire on Psychiatric Treatment

The Patient Health Beliefs Questionnaire on Psychiatric Treatment takes 15-20 minutes to complete and includes 5 self-reported personality dimensions: negative aspects of medication (pharmacophobia), positive aspects of medication (pharmacophilia), high/low psychological reactance, high/low doctor HLOC and high/low internal HLOC (Box 5). To complete the four original scales that refer to the patient (the DAI-10, Hong Psychological Reactance Scale and Multidimensional HLOC), requires 1-1.5 hours (De las Cuevas and de Leon, 2019a). This questionnaire is beginning to be translated into other languages (Pogany et al., 2021; Pogany & Lazary, 2021). Box 6 describes its scoring system (De las Cuevas and de Leon, 2019a).

MEASURES THAT MAY PREDICT ADHERENCE CONCERNING SPECIFIC MEDICATIONS

Prior Questionnaire

The self-reported dimensions that focus on medications can also be used in reference to specific medications. The BMQ (Horne et al., 1999) focuses on medications considered individually and measures perception of necessity and concern that the patient has regarding each specific medication.

Skepticism

Each medication is rated by each patient using the BMQ, leading to a classification of skeptical or non-skeptical for each patient for each medication. Box 7 summarizes this topic, including how scoring was handled for the concepts comprising skepticism about a specific medication, defined as a high concern about its adverse reactions and low belief in its necessity.

CONCLUSIONS

Many authors acknowledge that adherence to psychiatric medications is in an important topic, but when we entered the field 10 years ago we found no good tool to study it. Boxes 1 through 7 present a practical summary of 10 years of research experience on this topic. Table 1 presents two cases, one exhibiting poor adherence and

one demonstrating good adherence, to help clinicians understand our assessments. The introduction of the Sidorkiewicz Adherence Tool has been a major development that allows the finding of poor adherence for each specific medication (Box 1). Based on the HBM and 4 scales (Boxes 2-4) that measure variables of personality style that are presumably associated with poor adherence, we have developed The Patient Health Beliefs Questionnaire on Psychiatric Treatment. This reduced the time to complete a comprehensive assessment from 1.5 hours to 15-20 minutes (Boxes 5 and 6). Finally, by working on the necessity-concern framework for each medication taken by each patient, we have focused on skepticism (defined as high concern and low necessity regarding the medication) as an additional variable (Box 7).

Box 1. Sidorkiewicz Adherence Tool (Sidorkiewicz et al., 2016)

Self-report questionnaire of five items
<p>The five questions are related to:</p> <ul style="list-style-type: none"> • (1) early discontinuation of the medication, • (2) systematic omission of a daily dose (e.g., at noon), • (3) medication holidays, • (4) skipping doses and • (5) schedule errors. <p>Each question has two or three possible answers, and the language uses non-threatening sentences to reduce social desirability bias, with practical examples and pictographs to help patients recognize their medicine-taking behaviors.</p>
Levels of adherence
<p>The instrument defines six medication adherence levels for a given medication:</p> <ul style="list-style-type: none"> • Level 1 corresponds to high medication adherence (no medication holidays, no missing doses and no schedule errors). • Level 2 corresponds to good medication adherence (no medication holidays and no missing doses; schedule errors ≥ 4 hours). • Level 3 corresponds to moderate medication adherence (no medication holidays; missing doses once or twice a month and/or schedule errors ≥ 12 hours). • Level 4 corresponds to poor medication adherence (medication holidays for 2–3 days and/or missing doses ≥ 1/week). • Level 5 corresponds to very poor medication adherence (systematically skipping a daily dose and/or medication holidays ≥ 6 days). • Level 6 corresponds to medication discontinuation.
Dichotomous
<p>These levels of adherence could be dichotomized</p> <ul style="list-style-type: none"> • such that values of 1–3 on the scale correspond to adherence, and • values of 4–6 correspond to non-adherence.
PubMed search (2021/10/15)
<p>The search “Sidorkiewicz adherence” provided 9 references. The search “Sidorkiewicz adherence AND psychiatric” provided only 5 of our references (De Las Cuevas & de Leon, 2019a; De las Cuevas et al., 2018a; 2018b; 2020; 2021). In summary, no other psychiatric researcher has used this sophisticated tool.</p>

Box 2. Attitudes toward medication in general: DAI

DAI Description
<ul style="list-style-type: none"> • DAI (Hogan et al., 1983) is an easy-to-use self-report questionnaire. • The original DAI-10 included 10 questions, each with true/false answers pertaining to various aspects of the patient's perceptions and experiences of psychiatric treatment. • DAI-10 scoring ranges from -10 to +10 with a total score >0 indicating a positive attitude toward psychiatric medications (pharmacophilia) and a total score <0 indicating a negative attitude toward psychiatric medications (pharmacophobia).
Problems with the DAI
<ul style="list-style-type: none"> • The unidimensional continuum of the scale score, from -10 to +10, did not allow differentiating those patients who have positive and negative attitudes towards psychiatric medications from those who are indecisive or unconcerned about it. • It could be assumed that the midpoint of this unidimensional continuum should indicate the concurrence of positive and negative attitudes, but mid-range responses may also indicate lack of opinion about or an attitude of indifference toward psychiatric medication.
Clinimetric version
<ul style="list-style-type: none"> • De las Cuevas and de Leon (2019b) improved the DAI-10 scoring system by using a clinimetric approach that included: the modification of the response format to a six-point Likert response format from 1 = strongly disagree to 6 = strongly agree; eliminating 2 confusing items; performing an exploratory factor analysis of the 8 remaining items to rate 2 factors (positive and negative aspects of medications); identifying clinimetric pharmacophobic patients (high in negative aspects of medications and low in positive aspects of medications); identifying patients with consistently poor adherence; and testing different samples for more accurate prediction of nonadherence using the new clinimetric definition of pharmacophobia versus the old one. • This clinimetric version led us to include 8 items grouped into two subscales (positive and negative aspects of medications) that constitute two of the five Patient's Health Belief Questionnaire on Psychiatric Treatment subscales (De Las Cuevas and de Leon, 2019a).
Positive and negative aspects of medications
<ul style="list-style-type: none"> • The positive and negative aspects of medication subscales could be split at the median of the studied population to generate four attitudinal groups with clinical significance: <ul style="list-style-type: none"> - Pharmacophilic (high positive, low negative), - Indecisive (high positive, high negative), - Unconcerned (low positive, low negative), and - Pharmacophobic (high negative, low positive).

DAI-10: Drug Attitude Inventory with 10 items.

Box 3. Psychological reactance

Psychological reactance
<ul style="list-style-type: none"> • Psychological reactance theory is a commonly used framework for understanding health care service users' resistance to persuasive health messages such as the need for adherence to prescribed treatment (Reynolds-Tylus, 2019). • According to this theory, freedom of behavior is an important, beneficial, and pervasive aspect of our lives; when that freedom is threatened, we become motivated to restore it (Brehm, 1966; Steindl et al. 2015). • Psychological reactance can be considered an emotional reaction in direct contradiction to rules or regulations that threaten or suppress certain freedoms in behavior (Rosenberg and Siegel, 2017). When psychiatric patients perceive mental health professionals' recommendations as threatening their freedom, they become inclined to resist the influence, thus undermining psychiatric treatment effectiveness (Moore et al. 2000).
The Hong Psychological Reactance Scale (Hong and Faedda, 1996)
<ul style="list-style-type: none"> • This subscale is a 14-item self-report questionnaire developed to assess individual differences in reactance proneness, that is, individuals' trait propensity to experience psychological reactance. • Participants indicate the extent to which they endorse each statement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).
The Patient's Health Belief Questionnaire on Psychiatric Treatment: Psychological Reactance Subscale
<ul style="list-style-type: none"> • This subscale contains the three items from the original Hong scale that have achieved the greatest significance in predicting treatment adherence in psychiatric patients (De las Cuevas and de Leon, 2019a). • According to our results in psychiatric outpatients, those higher in reactance proneness, both affective and cognitive, tend to show decreased adherence to prescribed treatment (De las Cuevas et al. 2014a; 2014b). • Psychiatric patients with high reactance proneness typically have an internal attribution of change that predisposes them to focus on their own resources, personal decisions and initiatives, while patients with low reactance proneness usually have an external attribution of change that frequently leads them to seek external help and support to achieve their goals.

Box 4. Health Locus of Control (HLOC)

Background
<ul style="list-style-type: none"> • It has been repeatedly argued that belief in one's ability to exert control over the environment and to produce desired results (i.e., perception of control) is not only desirable, but it is likely a psychological and biological necessity (Wallstone and Wallstone, 1982). • HLOC reflects patients' beliefs about who or what is responsible for the management of their disorders, in this case, psychiatric disorders, influencing their health behaviors and consequently their mental health outcomes (Wallstone, 1989). If patients believe that their own behaviors affect whether they stay healthy, become sick, or recover from an illness, they are said to have an "internal" HLOC orientation. On the other hand, beliefs attributing causation or control of illness to agents outside of the individual – other relevant people such as doctors or family members, the environment, fate, luck, or chance – are referred to as "external". • Traditionally, an internally-oriented patient (i.e., a patient believing that control of his/her health condition and health-related outcomes is contingent on his/her own behaviors and actions) has been considered more likely to engage in healthy behavior than an externally-oriented patient (i.e., those believing that outside factors such as doctors, other people, or chance determine health outcomes) (Nazareth, et al, 2015).
Form C of the Multidimensional HLOC (Wallston et al., 1994)
<ul style="list-style-type: none"> • The MHLC-C is an 18-item general purpose, condition-specific locus of control self-report scale that can easily be adapted for use with any medical or health-related condition to assess individuals' beliefs on what influences their health. It is composed of four sub-scales: <ul style="list-style-type: none"> - an internal locus of control subscale (internality) - and three external locus of control scales (chance, doctors, and other powerful people) • Each item includes a belief statement about the patient's medical condition with which she/he may agree or disagree through a six-point Likert scale ranging from strongly disagree (1) to strongly agree (6).
HLOC Scales in psychiatric patients (De las Cuevas et al., 2016)
<ul style="list-style-type: none"> • Our research on this topic has shown that psychiatric outpatients have the conviction that their psychiatrists have greater influence on their mental health status even though they were, at the same time, aware of the efficacy of their own activities in coping with their mental disorder. • These results support the dual health control hypothesis that specifies that the equilibrium between external and internal health control beliefs is related to treatment adherence. • Those psychiatric patients with low internal and external health control beliefs (no-control believers) described greater adherence to treatment, while patients with high internal and external health control beliefs (dual-control believers) described lower adherence.
The Patient's Health Belief Questionnaire on Psychiatric Treatment HLOC Subscales²⁵
<ul style="list-style-type: none"> • The Patient's Health Belief Questionnaire on Psychiatric Treatment includes two subscales of three items each concerning HLOC (De las Cuevas and de Leon, 2019a): <ul style="list-style-type: none"> - the internal items assess the belief that a patient's own behaviors affect his/her health status, and - the doctor items assess the belief that doctors are the ones who determine a patient's health outcomes.

HLOC: Health Locus of Control.

Box 5. Patient Health Beliefs Questionnaire on Psychiatric Treatment items

A 17-item self-reported health beliefs scale that includes five subscales (De las Cuevas and de Leon, 2019a):
Positive Aspects of Medications Subscale
<ul style="list-style-type: none"> • Describes positive attitudes toward psychiatric medications. It has 5 items: <ul style="list-style-type: none"> - For me, the good things about medication outweigh the bad - Medications make me feel more relaxed - I feel more normal on medication - My thoughts are clearer on medication - Taking medication will prevent me from having a breakdown
Negative Aspects of Medications Subscale
<ul style="list-style-type: none"> • Describes negative attitudes toward prescribed psychotropics. It has 3 items: <ul style="list-style-type: none"> - I feel strange, "doped up", on medication - Medication makes me feel tired and sluggish - It is unnatural for my mind and body to be controlled by medications
Psychological Reactance Subscale
<ul style="list-style-type: none"> • What is the patient's level of motivation for regaining a freedom after it has been lost or threatened – leading patients to resist the influence of mental health professionals. It has 3 items: <ul style="list-style-type: none"> - When someone forces me to do something, I feel like doing the opposite - I resist the attempts of others to influence me - I become angry when my freedom of choice is restricted
Internal HLOC Subscale
<ul style="list-style-type: none"> • What is the belief that one's own behaviors affect one's mental health status? It has 3 items: <ul style="list-style-type: none"> - I am directly responsible for my condition getting better or worse - The main thing which affects my condition is what I myself do - If my condition takes a turn for the worse, it is because I have not been taking proper care of myself
Doctor's HLOC Subscale
<ul style="list-style-type: none"> • What is the belief about doctors determining the outcomes of patient mental health? It has 3 items: <ul style="list-style-type: none"> - If I see my doctor regularly, I am less likely to have problems with my condition - Following doctor's orders to the letter is the best way to keep my condition from getting any worse - Whenever my condition worsens, I should consult a medically-trained professional

Box 6. Patient Health Beliefs Questionnaire on Psychiatric Treatment Scoring

Scoring of each of the 17 items (De las Cuevas and de Leon, 2019a)
<ul style="list-style-type: none"> • Patients are asked to rate, on a 6-point Likert scale (from 1, totally disagree, to 6, totally agree), the degree to which they agree or disagree with each statement. • Higher scores on each subscale indicate a stronger belief.
Scoring of each of the 5 subscales (De las Cuevas and de Leon, 2019a)
<ul style="list-style-type: none"> • Each subscale is scored by adding corresponding items (Box 5).
Dichotomous rating of 5 subscales in 3 countries (Argentina, Spain and Venezuela)
<ul style="list-style-type: none"> • Subscales were split according to the median of each country to generate high and low score groups. Subscales' medians in 3 countries: <ul style="list-style-type: none"> - Positive Aspects of medications (range 5-30): Spain: 23; Argentina: 22; Venezuela: 26 - Negative Aspects of medications (range 3-18): Spain: 10; Argentina: 9; Venezuela: 9 - Psychological Reactance (range 3-18): Spain: 9; Argentina: 16; Venezuela: 12 - Internal HLOC (range 3-18): Spain: 14; Argentina: 14; Venezuela: 14 - Doctor's HLOC (range 3-18): Spain: 17; Argentina: 16; Venezuela: 17
Combinations of Pharmacophobia and Pharmacophilia
<ul style="list-style-type: none"> • The combination of high and low scores of positive and negative aspects of medications generated the categories of <ul style="list-style-type: none"> - pharmacophobia (high negative and low positive) - pharmacophilia (high positive and low negative)
Dichotomization in Low and High Psychological Reactance
<ul style="list-style-type: none"> • Psychological reactance subscales were split at the median of the studied population, generating <ul style="list-style-type: none"> - high score groups - low score groups
Dichotomization in Low and High of Both HLOC subscales
<ul style="list-style-type: none"> • Both HLOC subscales were split according to the median of the studied population generating <ul style="list-style-type: none"> - high score groups - low score groups

HLOC: Health Locus of Control.

Box 7. Attitude towards specific medication in particular

Necessity and Concerns Framework
<ul style="list-style-type: none"> The Necessity-Concerns Framework is a useful conceptual model for understanding patients' perspectives on prescribed medicines, which predict adherence to medication under multiple illness conditions (Foot et al., 2016), postulating that treatment adherence is influenced by implicit judgments of personal need for the treatment (necessity beliefs) and concerns about the potential adverse consequences of taking it (Horne et al., 2013).
The BMQ (Horne et al., 1999)
<ul style="list-style-type: none"> The BMQ was specifically designed to assess the Necessity-Concerns Framework. It includes 10 items on two subscales, each with five items assessing patients' beliefs about the medication they were prescribed for a specific illness in terms of necessity for and concern about taking it. The degree of agreement with each statement is indicated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).
Four Attitudinal groups based on the BMQ
<ul style="list-style-type: none"> The Necessity and Concerns subscales could be split at the median of the studied population to generate four attitudinal groups with clinical significance: <ul style="list-style-type: none"> - Accepting (high necessity, low concern), - Ambivalent (high necessity, high concern), - Indifferent (low necessity, low concern), and - Skeptical (low necessity, high concern).
Dichotomization of four groups into two
<ul style="list-style-type: none"> The four groups were summarized in a dichotomous way: <ul style="list-style-type: none"> - Skeptical vs. - Not skeptical (the other 3: accepting, ambivalent and indifferent)
Medians of necessity and concern in 3 countries (Argentina, Spain and Venezuela)
<ul style="list-style-type: none"> In these 3 countries the medians (De Las Cuevas et al., 2019): <ul style="list-style-type: none"> - Necessity: Spain = 3.8; Argentina = 3.8; and Venezuela = 3.6 - Concern: Spain = 2.6; Argentina = 3.6; and Venezuela = 2.6

BMQ: Beliefs about Medicines Questionnaire.

Table 1. Examples of patients on polypharmacotherapy: one with poor adherence and one with good adherence

Aspects of medication		Psychological reactance	HLOC		Medications	Adherence ^a	Skeptical ^b
Positive	Negative		Internal	Doctor			
Spanish 32-yo ♀ with bipolar disorder and poor adherence							
22	15	12	6	12			
Low ($\leq 23^c$)	High ($> 10^c$)	High ($> 9^c$)	Low ($\leq 14^c$)	Low ($\leq 17^c$)			
Pharmacophobia ^d					Lithium	Very poor (skipping meds)	No, ambivalent
					Valproate	Very poor (skipping meds)	No, ambivalent
					Topiramate	Very poor (skipping meds)	No, ambivalent
					Paroxetine	Very poor (skipping meds)	No, ambivalent
					Ketazolam	Very poor (skipping meds)	No, ambivalent
Argentinian 44-yo ♀ with bipolar disorder and good adherence							
27	6	13	13	18			
High ($> 22^c$)	Low ($< 9^c$)	Low ($\leq 16^c$)	Low ($\leq 14^c$)	High ($> 16^c$)			
Pharmacophilia ^e					Lithium	High (no missing doses)	No, accepting
					Lamotrigine	High (no missing doses)	No, accepting
					Quetiapine	High (no missing doses)	No, accepting
					Desvenlafaxine	High (no missing doses)	No, accepting
					Clonazepam	High (no missing doses)	Yes

HLOC: Health Locus of Control.

^a Box 1 provides a detailed description of the levels of adherence according to the Sidorkiewicz Adherence Tool.

^b Box 7 provides a detailed description of use of necessity and concerns about each drug in skeptical (low necessity and high concern) vs 3 other attitudinal groups. Accepting indicates high necessity and low concern. Ambivalent indicates high necessity and high concern.

^c The median of the corresponding country (Box 6) is used to divide between high and low.

^d Pharmacophobia: low positive aspects of medication and high negative scores.

^e Pharmacophilia: high positive aspects of medication and low negative scores.

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A gyógyszer-adherencia mérésének és előrejelzésének gyakorlati megközelítése járóbetegek önbevallása alapján több mint 10 év pszichofarmakológiai kutatást követően

A szkizofrénia, bipoláris affektív zavar és major depresszió esetében az adherencia mértéke egyaránt csupán 50% körüli, ami indokoltá teszi az adherencia javítását célzó egyszerű módszerek beépítését a napi klinikai gyakorlatba. Az elmúlt 10 év folyamán a betegek beszámolójára alapoztuk adherenciájuk mértékének megítélését. Több ezer, ambuláns kezelés alatt álló beteget vizsgáltunk, akik számára sok száz pszichiátriai gyógyszert írtak fel, három különböző országban. Több gyógyszer egyidejű alkalmazása esetében az adherencia mértékének megítélése komplex feladat. Az adherenciát minden hatóanyag vonatkozásában külön-külön kell meghatározni, mert betegenként és gyógyszerenként eltérő lehet. Ezt nem lehetett kivitelezni a Sidorkiewicz Adherence Tool bevezetése előtt. Ez az eszköz lehetővé teszi valamennyi egyidejűleg szedett gyógyszer esetében az adherencia mértékének külön megítélését, függetlenül annak fokától. Az egészséggel foglalkozó pszichológusok megalkották az Egészség-hit Modellt, amely azonban nem keltette fel kellő mértékben a pszichiáterek figyelmét. A modellt véve alapul, kutatásunk során személyiségjegyeket és a betegek gyógyszerekkel kapcsolatos meggyőződéseit igyekeztünk a hiányos adherencia lehetséges prediktoraiként azonosítani. Megalkottuk a Patient's Health Beliefs Questionnaire on Psychiatric Treatment skálát, amely öt dimenzióból épül fel: a gyógyszerek negatív aspektusa (farmakofóbia), a gyógyszerek pozitív aspektusa (farmakofília), pszichológiai reaktancia (magas/alacsony), orvos egészségkontrollhely (magas/alacsony), belső egészségkontrollhely (magas/alacsony). A Beliefs About Medicines Questionnaire alapján kidolgoztuk a szkepticizmus mértékének megítélését lehetővé tevő eszközt. A szkepticizmus ebben az esetben a páciens mellékhatások miatti fokozott aggodalmából és a gyógyszer-szedés szükségességével kapcsolatos kétségeiből tevődik össze. Az adherencia mértékének megítélésére és hiányos előrejelzésére alkalmazható eszközökkel folytatott kutatásaink eredményeit táblázatos formában foglaltuk össze, ezeket példákkal is kiegészítettük.

Kulcsszavak: egészséghez való viszonyulás, bipoláris affektív zavar, depresszió, adherencia, egészségmagatartás, pszichofarmakológia, szkizofrénia