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Understanding and Addressing Medication Adherence in Psychiatry

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Objectives

- Discuss definitions of medication adherence in psychiatry and review current adherence statistics
- Review factors that may influence adherence
- Understand the importance of adherence
- Explore barriers to adherence and tools for addressing medication adherence

Differentiating Adherence, Compliance, Persistence, and Concordance

Compliance

- The extent to which a patient conforms to healthcare provider recommendations regarding timing, dosage and frequency of taking medication.[1] Patient agreement with the recommendations is not required.[2]

Adherence

- The extent to which a patient's behavior—taking medications, and/or executing lifestyle changes—corresponds with healthcare provider recommendations agreed upon by the patient. Patient agreement with the recommendations is required.[2]

Persistence

- The act of continuing to take medication for the prescribed duration of time from initiation to discontinuation of therapy. The patient may continue to take any amount of medication and be considered persistent.[1]

Concordance

- The process of reaching a consensus about medication taking which focuses on adequate communication and the clinician-patient relationship as the cornerstones of the medication-taking process and addresses whether recommendations are "right or wrong".[3]

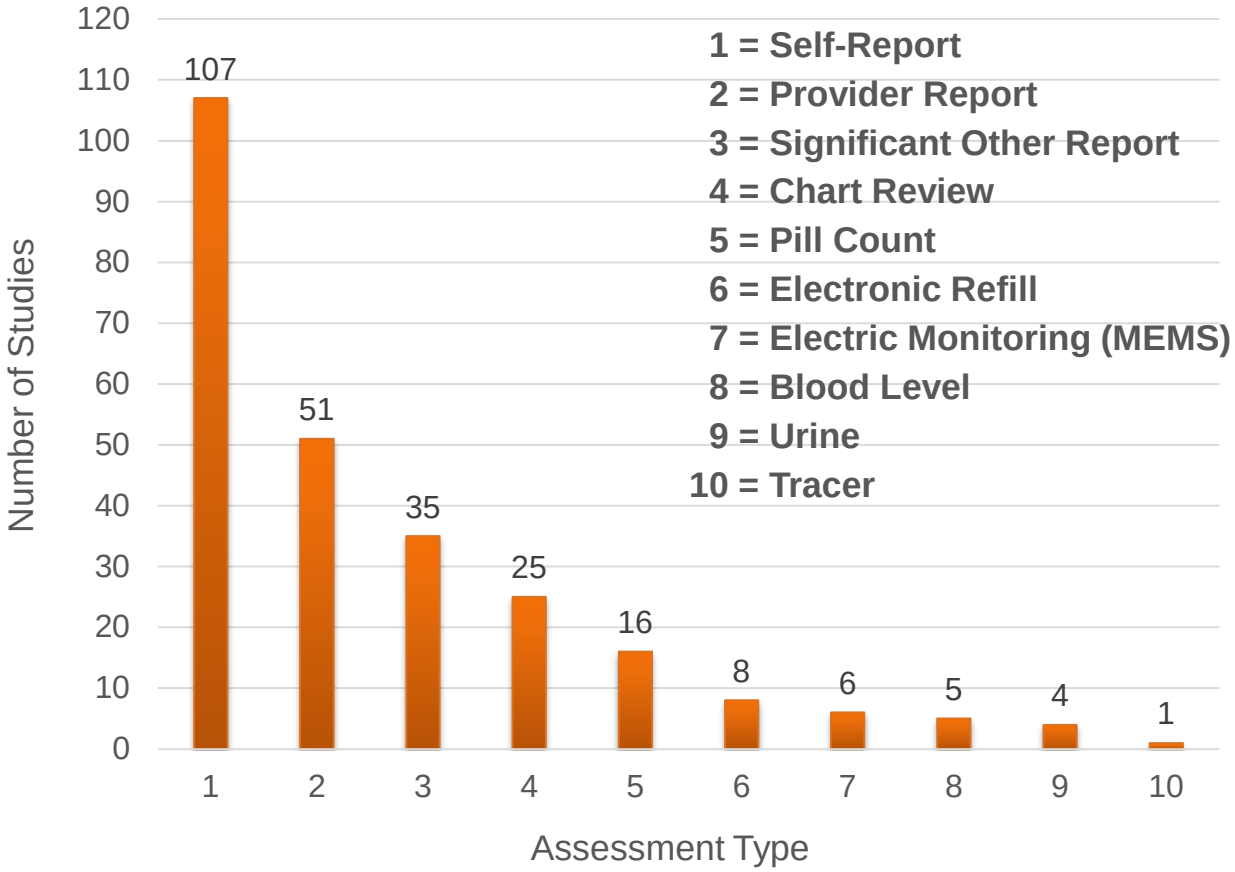
1. Cramer JA, et al. *Value Health*. 2008;11:44–47.
2. World Health Organization. Adherence to long-term therapies: evidence for action. http://www.who.int/chp/knowledge/publications/adherence_full_report.pdf. 2003. Accessed August 29, 2013.
3. Chakrabarti S. *World J Psychiatr*. 2014; 4(2): 30–36.

Medication Interest and Follow-through

- In contrast to authoritative models, shared decision making (SDM) is a collaborative, dynamic, interactive process whereby consumers and providers are equal partners, working together to exchange information to reach consensus on health-care decisions[1,2]
  - Provider role: to educate patients concerning available, evidence-based treatments; assess and acknowledge their preferences/values; and empower them to take an active role in the decision-making process
  - Patient role: to provide input via their experience with the illness and share their needs, values, life desires, and goals
  - The most important outcome of SDM may not be the decision, but rather the process
- Evidence suggests that use of SDM may lead to greater adherence to treatment regimens, better disease control, and greater patient satisfaction[1]
- The concept of medication interest and follow through is more aligned with a shared decision-making approach to treatment

1. Kreyenbuhl J et al. *Schizophr Bull*. 2009;35:696-703.
2. Dixon LB, et al. *World Psychiatry*. 2016;15(1):13-20.

Variations in Defining and Assessing Adherence



Definitions:

- Stopping for a specified period
- Percentage
- Active refusal
- Passive acceptance
- Active participation

MEMS, Microelectromechanical systems

Published literature between 1970 and February 2006 searched in MEDLINE and PsycINFO. Reproduced with permission from Velligan DI, et al. *Schizophr Bull*. 2006;32:724–742.

Study population: patients with schizophrenia.

Limitations of Current Adherence Measurement Methods May Be Factors in the Underestimation of Nonadherence

Adherence Measurement Methods	Limitations
Physician ratings and patient self-report	• Overestimation of adherence[1] • Unreliable[1]
Adherence assessment scales/interviews	• Questionable correlation with compliance[1,2]
Medication measurement (eg, pill count, weighting)	• Counting inaccuracies may lead to overestimation of adherence[3] • Pills can be stockpiled or discarded[3,4] • Timing of dosage and patterns of missed dosage cannot be captured[5]
Pharmacy records/databases (MPR)	• Filling prescription does not indicate ingestion[3,6] • May have obtained the drug elsewhere[6] • Global estimate—no patterns of behavior captured[3]
Electronic monitoring (eg, MEMS)	• Missing data if cap is left off[7] • May take more than one pill out of the bottle[7]
Directly observed ingestion	• Labor-intensive[3] • May be intrusive[3]
Hair analysis	• Specialized lab; some require 3 months' growth[8] • Does not indicate timing of dosage[8]
Therapeutic drug monitoring	• Not available for all drugs[9] • Data only indicates short-term patient behavior[3] • Plasma levels of drug or metabolite can be affected by comedications,[9] intra-individual variability,[3] timing of sample[9]

MEMS, Microelectromechanical systems; MPR, medication possession ratio.

1. Byerly MJ, et al. *Psychiatr Serv*. 2007;58:844–847.
2. Fialko L, et al. *Schizophr Res*. 2008;100:53–59.
3. Riekert KA. In: O'Donohue WT, Levensky ER, eds. *Promoting Treatment Adherence: a Practical Handbook for Health Care Providers*. Sage Publications; 2006:17–34.
4. Velligan DI, et al. *Schizophr Bull*. 2006;32:724-742.
5. Sabaté E. *Adherence to Long-term Therapies: Evidence for Action.* Geneva, Switzerland; World Health Organization; 2003:3–5.
6. Valenstein M, et al. *Schizophr Bull.* 2004;30:255–264.
7. Velligan DI, et al. *Psychiatr Serv*. 2007;58:1187–1192.
8. SAMHSA. Clinical drug testing in primary care. HHS:2012;1–96.
9. Baumann P, et al. *Ther Drug Monit.* 2004;26:167–170.

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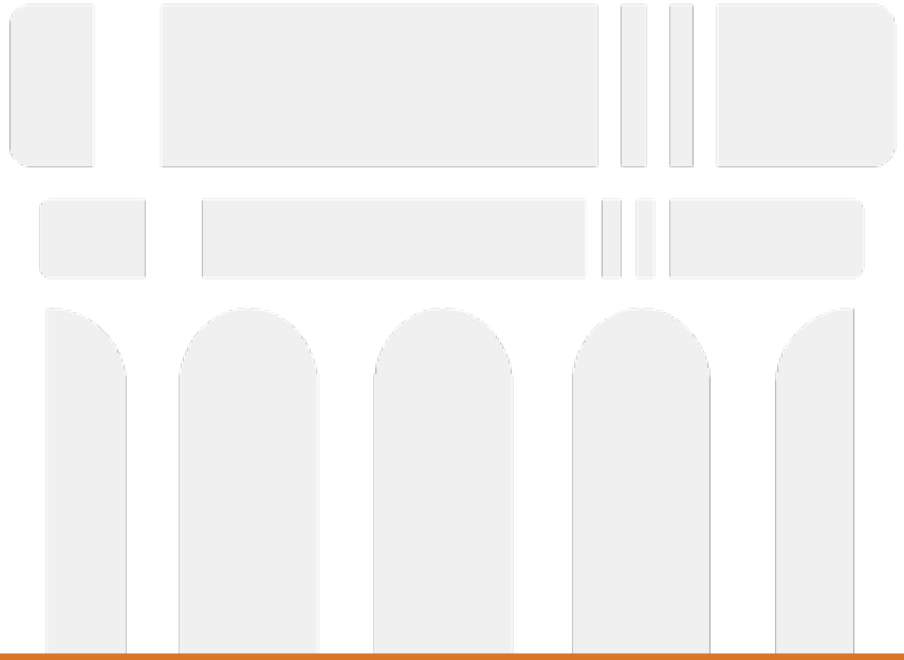
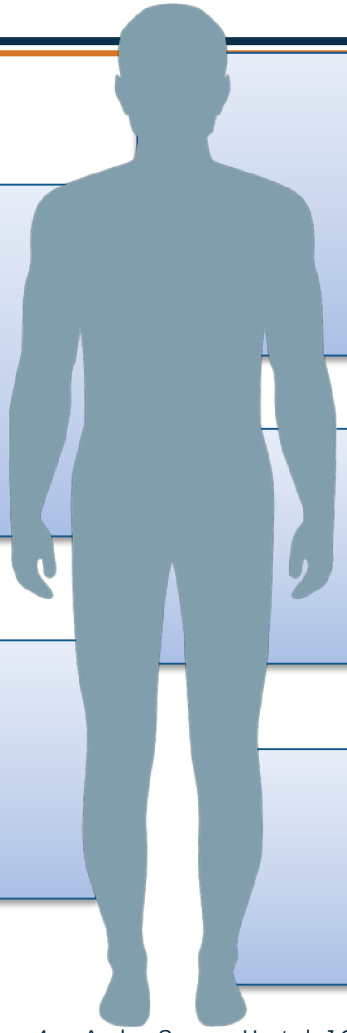
DISCUSSION



Multiple Factors Influence Nonadherence



Social/economic factors

- Lack of social/family support[1,2]
- Caregiver attitudes to medication and illness[1,3]
- Caregiver ability to supervise/remind patient[3]
- Transportation issues[1]
- Unemployment/Financial constraints[1,2]
- Homelessness[1,2]
- Lack of daily routines[2]
- Illiteracy/low level of education[1]

Treatment-related factors

- Effectiveness[1-3]
- Side effects[1-3]
- Dose frequency, formulation and treatment duration[1,3]
- Financial cost to patient[2,3]
- Co-prescribed drugs and complexity of regimen[1,3]
- Past medication experience[1,3]

Patient-related factors

- Past history of adherence[3,4]
- Stigma about mental illness[1,3]
- Fear of potential side effects[1,2]
- Belief that medications are not needed[1,2]
- Attitudes to medication and illness[2,3]

Health care systems/HCT factors

- Therapeutic alliance[2,3]
- Ease of access/inadequate reimbursement[1,3]
- Availability of resources[5]
- Discharge planning[3,6]
- Poor medication distribution systems[1]

Disease-related factors

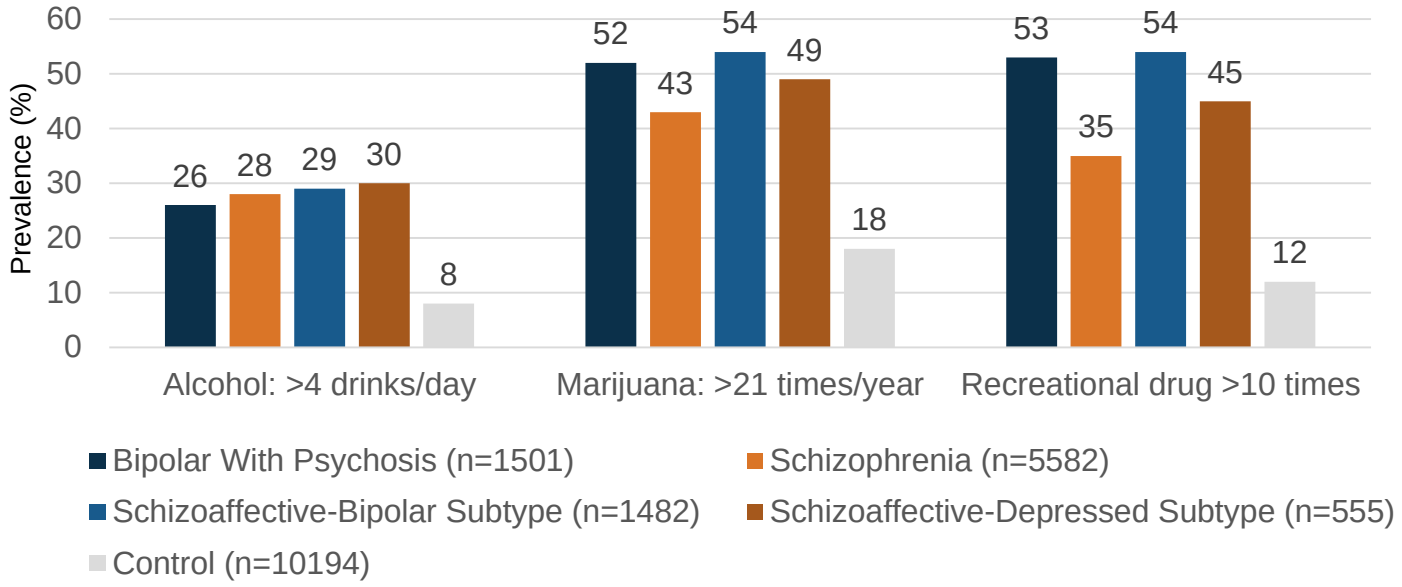
- Poor insight[2,3]
- Cognitive impairment[2,3]
- Severity of symptoms[1-3]
- Substance abuse[1-3]
- Comorbid medical or psychiatric conditions[1-3]

HCT, health care team.

1. Sabaté E. WHO. 2003.
2. Velligan DI, et al. *J Clin Psychiatry.* 2009;70:1–46.
3. Haddad PM, et al. *Patient Relat Outcome Meas.* 2014;5:43–62.
4. Ascher-Svanum H, et al. *J Clin Psychiatry.* 2006;67:1114–1123.
5. Busby KK, Sajatovic M. *CNS Neurosci Ther.* 2010;16:308–315.
6. Steffen S, et al. *Acta Psychiatr Scand.* 2009;120:1–9.

Substance Abuse Is an Important Factor Contributing to Medication Nonadherence

High Prevalence of Substance Use Among Patients With Serious Mental Illness (SMI)[1]



- Substance use and abuse are common among patients with SMI.[1-4] Co-occurring substance abuse is associated with medication nonadherence,[3,5] poor prognosis,[2-4] increased risk of suicide,[3,4] and violent aggressive behavior[2]
- It is critical to treat both mental illness and substance abuse simultaneously, if possible, through a comprehensive integrated approach[2-4]

1. Hartz SM, et al. *JAMA Psychiatry*. 2014;71:248–254.
2. Lehman AF, et al. *Am J Psychiatry*. 2004;161:1–184.
3. Gelenberg AJ, et al. *Am J Psychiatry*. 2010;167:1–118.
4. Hirschfeld RMA, et al. *Am J Psychiatry*. 2002;159:1–50.
5. Velligan DI, et al. *J Clin Psychiatry*. 2009;70:1–46.

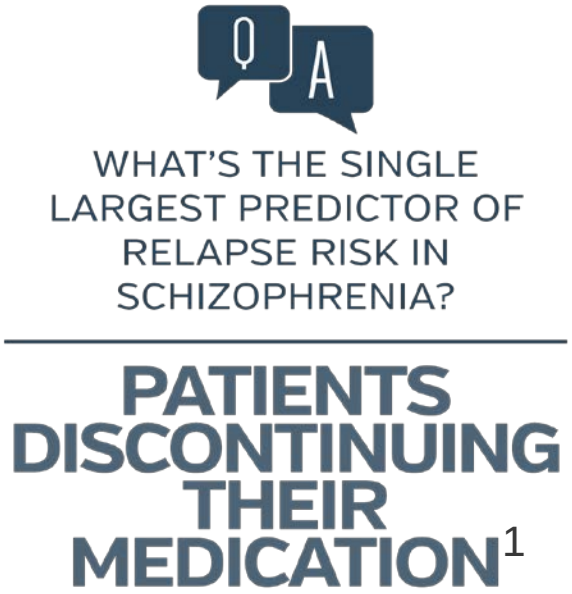
Poor Adherence Associated With Outcomes

- Hospitalizations[1–4]
- Length of Stay[1,3]
- Number of Suicide Attempts[2]
- Number of Episodes[2]
- Recovery[5]
- Relapse Rate[3,4]

Study population: patients with schizophrenia.

1. Ascher-Svanum H, et al. *BMC Research Notes*. 2009;2:6.
2. Ahn J, et al. *Value in Health*. 2008;11(1):48–56.
3. Sun SX, et al. *CMRO*. 2007;22(10):2305–2312.
4. Morken G, et al. *BMC Psychiatry*. 2008;8:32.
5. Novick D, et al. *Schizophrenia Res*. 2009;108:223–230.

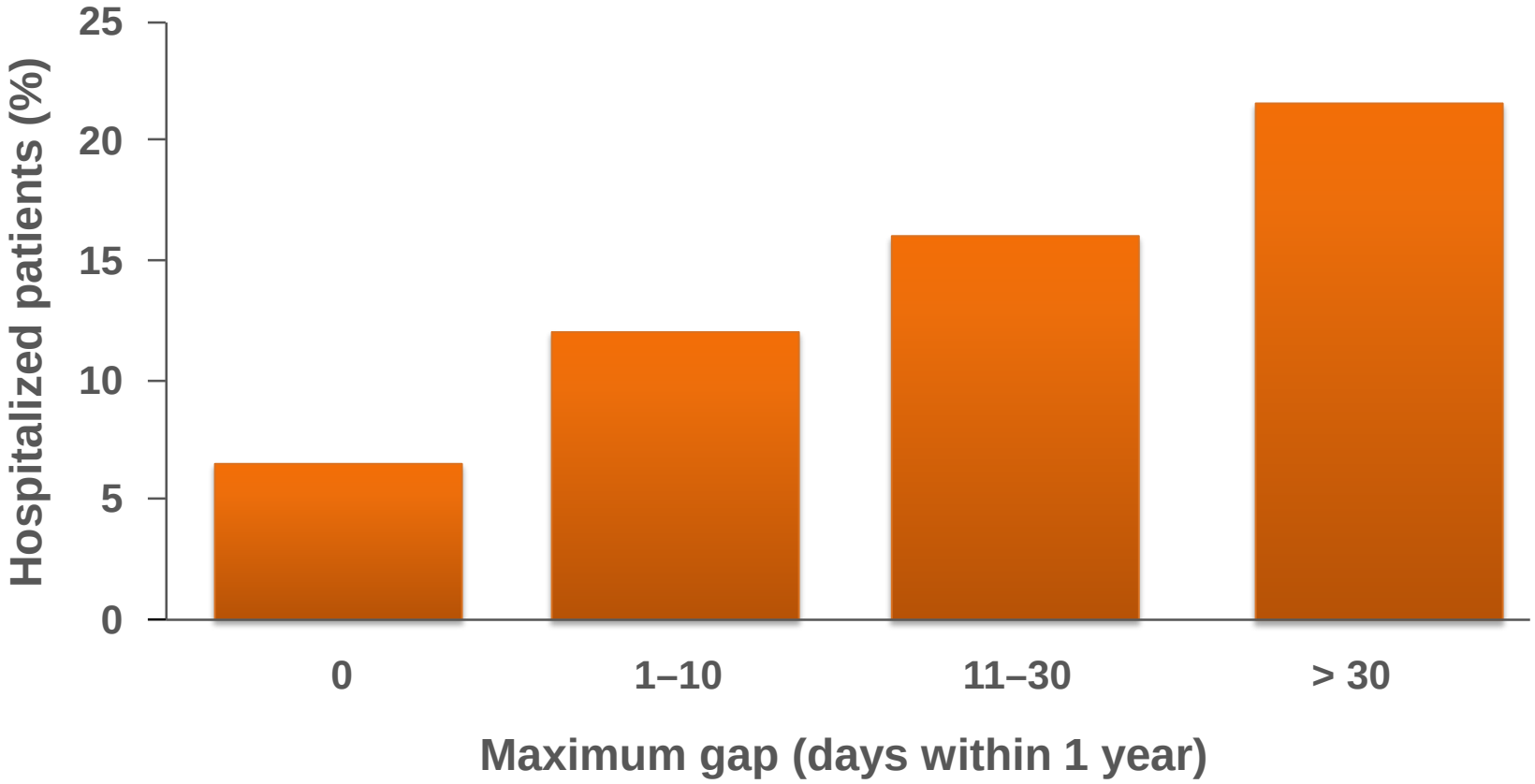
Why Discuss Adherence?



- Higher antipsychotic adherence has been associated with lower annual schizophrenia-related hospitalizations and shorter hospital stays[2]
  - The mean cost for a hospital stay for schizophrenia/other psychotic disorders is reported to be $7,500 (2008 USD)[3]

1. Kane JM. *J Clin Psychiatry*. 2006;67(suppl 5):9–14.
2. Baker RA, et al. Poster presented at: 165th Annual Meeting of the American Psychiatric Association; May 5-8, 2012. Supported by funding from Otsuka America Pharmaceutical, Inc.
3. Wier LM, et al. HCUP Facts And Figures: Statistics On Hospital-based Care in the United States. http://www.hcup-us.ahrq.gov/reports.jsp. 2008. Accessed September 9. 2013.

Medication Gaps Associated With Hospitalization Rates



Study population: patients with schizophrenia.

Weiden PJ, et al. *Psychiatr Serv*. 2004;55(8):886–891.

Nonadherence Starts Early After Discharge From Hospital and Can Increase Over Time In Schizophrenia

- Despite close monitoring, up to 25% of patients diagnosed with schizophrenia were reported as being nonadherent within 7 to 10 days post discharge[1]
- At least 50% of patients diagnosed with schizophrenia became partially adherent or nonadherent within 1 year and 75% within 2 years of discharge[1]

Time course of antipsychotic medication adherence[1]

Time from Discharge	Partially Adherent Patients (%)
7-10 days	15-25
1 year	50
2 years	75

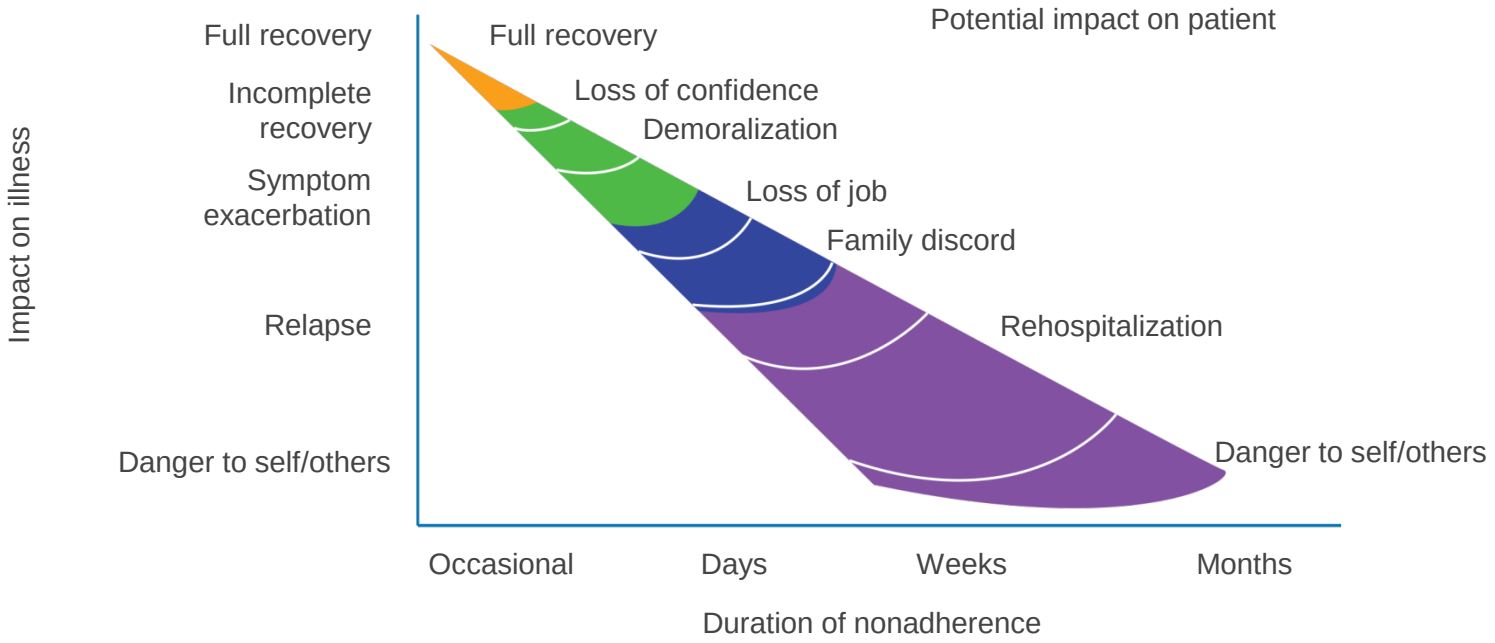
Antipsychotic adherence is not a stable trait; most patients have difficulties with adherence over time[2,3]

1. Keith SJ, Kane JM. *J Clin Psychiatry*. 2003;64:1308–1315.
2. Valenstein M, et al. *J Clin Psychiatry.* 2006;67:1542–1550.
3. Lehman AF, et al. *Am J Psychiatry*. 2004;161:1–184

Nonadherence May Contribute to a Downward Spiral of Worsened Prognosis

- Nonadherence, even early and partial, may increase risk of hospitalization,[1–5] relapse,[6,7] attempted suicide,[8,9] and impaired social and occupational functioning[10] in SMI

Illustration of the potential impact of continued partial or nonadherence on the patient diagnosed with schizophrenia and on the prognosis over time[11]



Adapted with permission from Keith SJ, Kane JM. *J Clin Psychiatry*. 2003;64(11):1308–1315.

1. Valenstein M, et al. *Med Care*. 2002;40:630–639.
2. Svarstad BL, et al. *Psychiatr Serv.* 2001;52:805–811.
3. Weiden PJ, et al. *Psychiatr Serv.* 2004;55:886–891.
4. Scott J, Pope M. *Am J Psychiatry*. 2002;159:1927–1929
5. Gilmer TP, et al. *Am J Psychiatry.* 2004;161:692–699.
6. Subotnik KL, et al. *Am J Psychiatry.* 2011;168:286–292
7. Morken G, et al. *BMC Psychiatry.* 2008;8:32.
8. Novick D, et al. *Psychiatry Res.* 2010;176:109–113.
9. Hong J, et al. *Psychiatry Res*. 2011;176:109–113
10. Haynes VS, et al. *BMC Psychiatry*. 2012;12:222.
11. Keith SJ, Kane JM. *J Clin Psychiatry*. 2003;64:1308–1315.

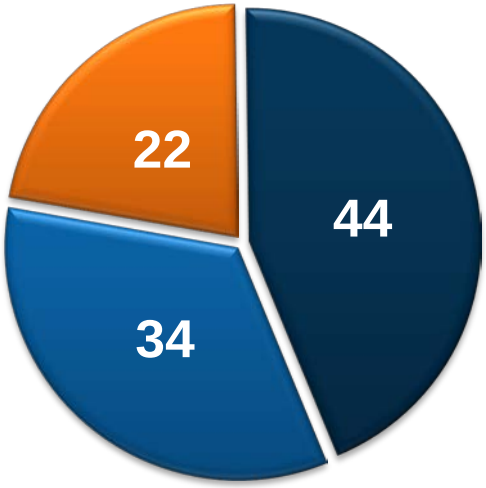
Polling Question

In your experience, what percentage of patients do you estimate to be poorly adherent to their prescribed medication(s)?

A. 0%, my patients always take their medication
B. < 10%
C. < 20%
D. < 30%
E. < 40%
F. ≥ 50%

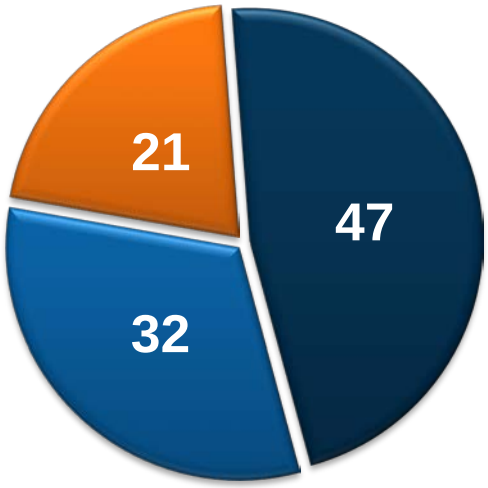
Psychiatrists Perceived High Levels of Adherence Problems in Recent Surveys Outside of the United States

Psychiatrists (N = 4661) treating patients diagnosed with schizophrenia



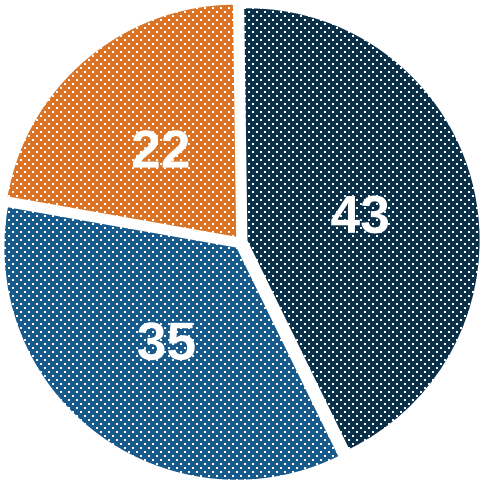
In 13 Asia-Pacific countries[1]

Psychiatrists (N = 4722) treating patients diagnosed with schizophrenia



In 36 countries in Europe, the Middle East, and Africa[2]

Psychiatrists (N = 2448) treating patients diagnosed with bipolar disorder



In 8 European countries[3]

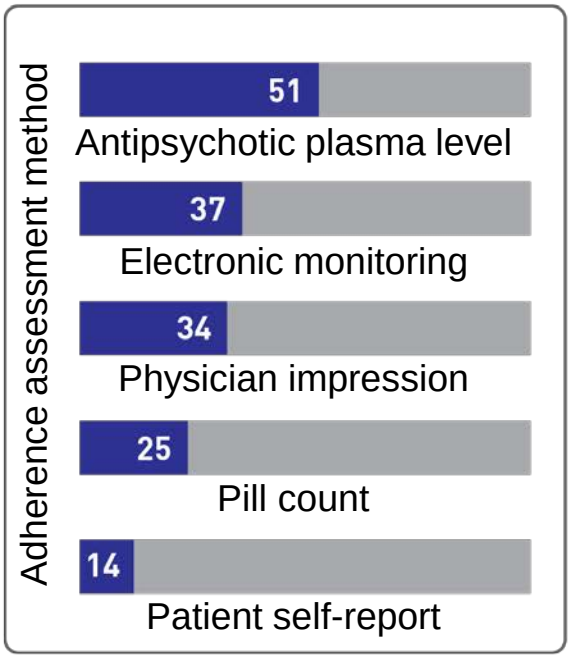
Adherent (≥ 90%*)
Partially adherent (≥ 30% to < 90%*)
Nonadherent (< 30%*)
Adherent (≥ 90%*)
Partially adherent (≥ 30% to < 90%*)
Nonadherent (< 30%*)

* of prescribed doses

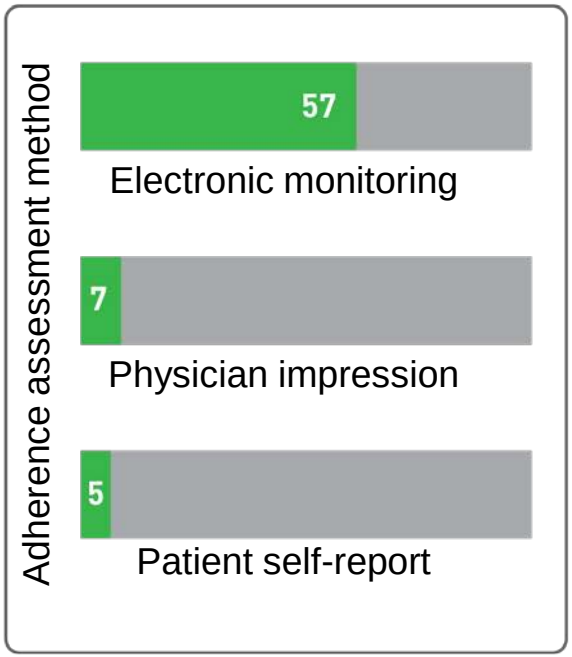
1. Olivares JM, et al. Neuropsychiatr Dis Treat. 2013;9:1163-1170.
2. Olivares JM, et al. Patient Prefer Adherence. 2013;7:121-132.
3. Vieta E, et al. J Affect Disord. 2012;143:125-130.

Physicians May Tend to Underestimate Adherence Problems in Their Own Clinical Practice

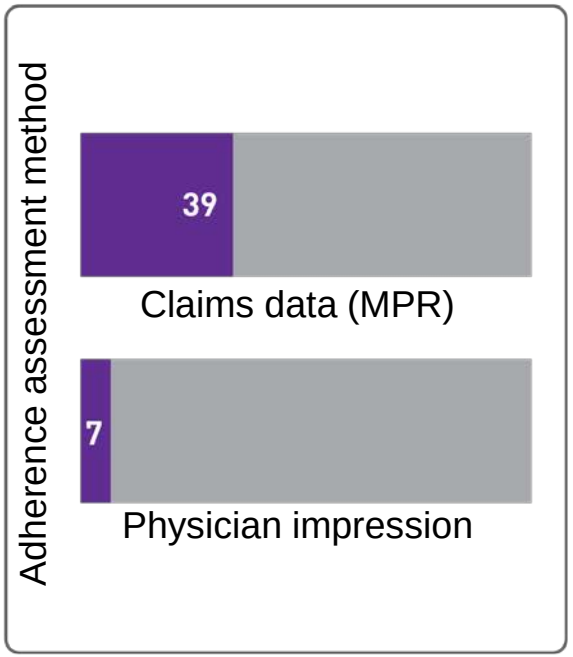
Rates of Nonadherence Assessed in Patients Diagnosed With Schizophrenia by Various Assessment Methods



Nonadherence (%) in a 12-week study (N = 52)[1]



Nonadherence (%) in a 6-month study (N = 61)[2]



Nonadherence (%) in a 12-month study (N = 44)[3]

1. Velligan DI, et al. *Psychiatr Serv*. 2007;58:1187–1192.
2. Byerly MJ, et al. *Psychiatr Serv*. 2007;58:844–847.
3. Stephenson JJ, et al. *Int J Clin Pract.* 2012:66:565–573

Even When Considering Inadequate Response, Physicians Tend to Underestimate the Risk of Nonadherence

- In a large, naturalistic, observational study in outpatients diagnosed with schizophrenia[1]

7462 SCREENED

- Adult patients diagnosed with schizophrenia, who in the previous 24 months had had ≥ 2 episodes that required hospitalization, an increase in the level of care, or a change in medication regimen. In addition, patients required a switch/change to their primary antipsychotic medication because of a physician-perceived risk of nonadherence

1187 CONSIDERED AT RISK

- Despite having an inadequate response to their antipsychotic medication, only 16% of the overall patient group was considered at risk of nonadherence based on physicians' best clinical judgment

- Physician-perceived risk of nonadherence was much lower than nonadherence rates (30.0% to 58.4%) in other naturalistic observational schizophrenia studies[2]

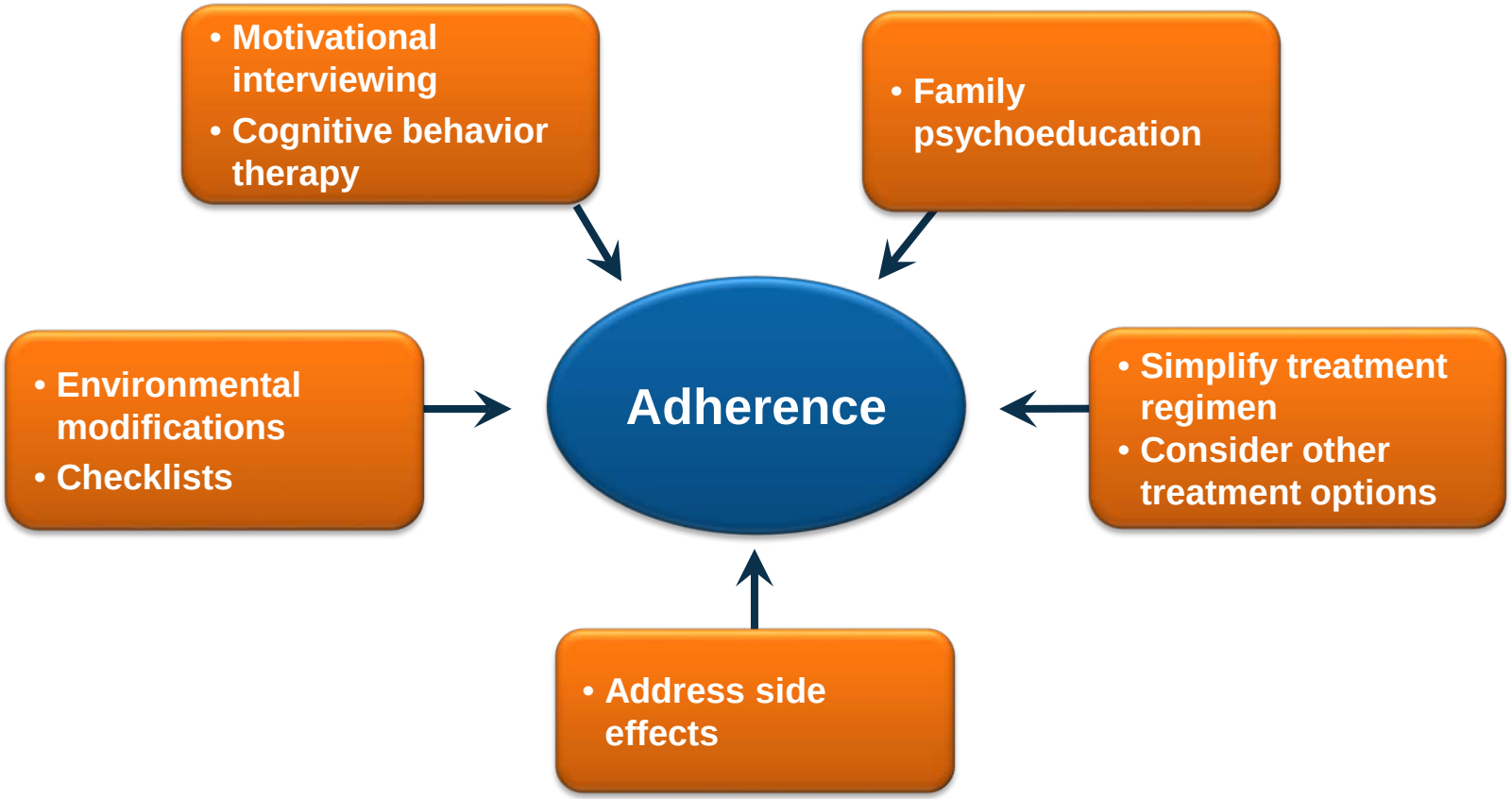
1. Kelin K, et al. *Patient Prefer Adherence.* 2010;4:301–311.
2. Kane JM, et al. *World Psychiatry.* 2013:216–226.

Polling Question

What do you do if a patient presents with increasing symptoms?

A. Increase the dose of current medication
B. Change medication
C. Augment current medication
D. Ask about side effects
E. Offer long-acting injectable medication
F. Ask about medication acceptance and follow-through

Examples of Strategies That May Help Improve Adherence



Study population: patients with serious and persistent mental illness.

Velligan D, et al. J Psychiatr Pract. 2010;16:306–324.

Adherence Technologies in Psychiatry

- A growing body of research is exploring the potential use of adherence technologies in psychiatry[1]

Tools to Assess Adherence	• Electronic monitoring (eg, smart pill dispensers)[2,3] • Telemonitoring[4]
Interventions Intended to Promote Adherence	• SMS text reminders[5–7] • Electronic monitoring and feedback[8,9] • Computer-based training and relational agents[10]

1. Naslund JA, et al. *J Ment Health*. 2015;24:320–331.
2. Stip E, et al. *Front Pharmacol*. 2013;4:100.
3. Nakonezny PA, et al. *Psychiatry Res.* 2008;157:259–263.
4. Frangou S, et al. *Telemed J E Health*. 2005;11:675–683.
5. Bogart K, et al. *BMC Psychiatry.* 2014;14:15.
6. Montes JM, et al. *Psychiatry Res*. 2012;200:89–95.
7. Granholm E, et al. *Schizophr Bull.* 2012;38:414–425.
8. Patel UB, et al. *Popul Health Manag*. 2010;13:269-274.
9. Velligan D, et al. *Schizophr Bull.* 2013;39:999–1007.
10. Bickmore TW, et al. *Interact Comput.* 2010;22:276–288.

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DISCUSSION

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QUESTIONS

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CLOSING

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