Perceived Symptom Targets of Antidepressants, Anxiolytics, and Sedatives: The Search for Modifiable Factors that Improve Adherence

Melissa M. Garrido, PhD[1,2] and **Kenneth S. Boockvar, MD, MS**[1,2,3]

[1] GRECC, James J Peters VA Medical Center, Bronx, NY

[2] Brookdale Dept of Geriatrics & Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY

[3] Jewish Home Lifecare, Bronx, NY

Abstract

Expectations about treatment and beliefs about illness influence adherence in physical disorders, but the extent to which this occurs in mood disorders is unknown. Identifying modifiable factors, such as beliefs, may improve adherence to mood disorder medications. Data from the Collaborative Psychiatric Epidemiology Surveys were used to examine relationships among perceived symptom targets of medication (mood only, non-mood only, mood and non-mood) and self-reported adherence to antidepressants, anxiolytics, and sedatives. The sample included 807 community-dwelling individuals with and without depression and anxiety who regularly took one of these medications in the year before the survey. Slightly over half (53.2%) of respondents were adherent. Perceived medication purpose was only significantly related to adherence among Latino respondents. Latino respondents who viewed their symptom target as non-mood only were the most adherent. Perceived symptom targets of medications were not associated with most patients' adherence behaviors for antidepressants, anxiolytics, and sedatives.

Keywords

Adherence; perceptions; beliefs; mood

Introduction

Of individuals prescribed medications for affective disorders, up to 60% are nonadherent to these medications.[1] Nonadherence to medication refers to a spectrum of behaviors in which a patient is not taking medication as instructed. One may take a greater or lesser quantity of a medication than intended, not take a medication at all, or take it fewer days or less often than instructed.[2] Nonadherence is of special concern for patients prescribed medication for

Corresponding Author: Melissa Garrido, PhD James J Peters VA Medical Center; GRECC, 4A-17; 130 W Kingsbridge Road Bronx, NY 10468 Phone: 718-584-9000, ext. 3804; Fax: 718-741-4211 melissa.garrido@mssm.edu.

depression and anxiety, as depression and anxiety are associated with lower quality of life, poorer management of comorbid physical illnesses, and higher healthcare costs.[3-7] It is important to identify modifiable factors that may improve adherence for individuals with mood disorders.[8]

Beliefs about illness and treatment are one set of factors that may be changed[9] and that may influence adherence to antidepressants and anxiolytics/sedatives. According to the Common Sense Model of Illness Representations (CSM), individuals form representations of illness that consist of five dimensions: identity of symptoms, causes, consequences, timeline (e.g. chronic or acute), and controllability.[10] In both physical and mental illnesses, differences in illness representations explain a large proportion of variance in adherence rates.[11-12]

There have been calls to understand how differences in illness representations in depression are associated with adherence and treatment outcomes.[13] When individuals describe depression, their descriptions most often fall into the identity (listing symptoms) and consequence (describe impact on social functioning and self-image) dimensions.[14] Adherence to medications for physical illnesses is less likely when beliefs about symptom identity do not match beliefs about targets of treatment. Individuals taking maintenance medications for chronic illnesses such as hypertension and diabetes will be less adherent if they expect an immediate change in acute subjective symptoms.[15] For example, individuals who mistakenly believe they can rely solely on subjective symptoms to monitor blood pressure are less likely to adhere to antihypertensive medication.[16]

The same relationship may occur in patients with depression and/or anxiety. Beliefs about whether symptoms should be attributed to depression or to some other condition may influence adherence to medications for mood disorders.[8] For example, a person might not associate fatigue with depression, so if they feel they are taking an antidepressant to mitigate fatigue, they may be less adherent than if they feel they are taking an antidepressant to mitigate depressed mood or anhedonia. A similar relationship between symptom identity and medication adherence might occur in anxiety, as it also encompasses mood and physical symptoms that could be attributed to a variety of causes. In addition, anxiety and depression often co-occur, and a mix of antidepressants and anxiolytics/sedatives are prescribed to people with anxiety and depression.[4, 17]

The purpose of this study is to explore whether perceived symptom targets of medication are related to adherence in a group of individuals taking antidepressants, sedatives, and anxiolytics. Because depression and anxiety are characterized as mood disorders, the hypothesis is that individuals who report taking these medications for mood reasons will be more likely to be adherent than those who report taking the medications for non-mood reasons, including physical and social functioning. Symptom identity is thus split into three groups: mood only, non-mood only (physical, role functioning, cognitive, or other), or both mood and non-mood.

To understand the relationship between perceived symptom targets and adherence, it is important to also consider clinical and sociodemographic factors that may be associated with adherence and/or perceptions. Nonadherence is higher for those who are unable to purchase

medications.[18] Depression and anxiety are associated with reduced adherence to medications in general, possibly due to the negative thoughts and fatigue that are part of these disorders.[4] Care from mental health specialists may be associated with improved adherence to antidepressants.[19] Perceived symptom targets also may differ by whether mental health care and/or prescriptions were from primary care providers, whose focus is physical health, or from mental health specialists. Adults over the age of 65 are more likely to report physical than mood symptoms of mood disorders;[20] this might be associated with perceived symptom targets. While the degree to which members of racial/ethnic minority groups differentially report mood or non-mood symptoms of mood disorders is unclear, treatment recommendations for mood disorders in minority groups advise clinicians to be especially cognizant of physical symptoms.[21-22]

In addition, because older adults and members of racial/ethnic minority groups are less likely to access mental health care in general,[23] understanding how treatment beliefs are associated with adherence in these subgroups is especially important. Understanding how patients view their prescribed treatments may help clinicians identify modifiable beliefs that influence adherence and improve care.

Methods

The CPES is a nationally representative survey of 20,013 community-dwelling adults collected between 2001-2003 that focuses on mental illness symptoms and treatment. Further details about the CPES are available elsewhere.[24] Survey coordinators presented respondents with a list of medication names, and respondents were asked: "Which of the medicines on this list did you take in the past 12 months for any of the following problems: problems with your emotions, nerves, mental health, substance use, energy, concentration, sleep, or ability to cope with stress?" Respondents were prompted to consult their medication bottles to obtain medication names. Detailed information about the medication can be linked to medication name only for those reporting a single medication. For that reason, the sample was restricted to 807 individuals who reported regularly taking one antidepressant, anxiolytic, or sedative under the supervision of a healthcare provider in the year prior to the survey.

Outcome Variable

Respondents were included if they were taking the medication at the time of the survey or had stopped the medication with a healthcare provider's agreement within the last year. A respondent was defined as adherent if, while taking the medication, he/she remembered to take the medication and took the amount instructed every day in a typical month. The exact question asked of respondents was: "People do not always take their medicine as they are supposed to. Think of a typical month when you took [name of medication] in the past 12 months. How many days out of 30 did you typically either forget to take it or take less of it than you were supposed to take?" (Codebook available at http://www.icpsr.umich.edu/icpsrweb/CPES/files/cpes).

Main Explanatory Variable

Respondents were asked the medication's purpose: "mood (sadness/depression/crying, manic mood, anger/irritability, nerves/anxiety, panic, suicidal thoughts); physical symptoms (low energy, poor appetite, poor sleep, physical pain); cognitive symptoms (poor concentration, poor memory); role functioning (little or no sexual functioning, marital problems, not getting along with others, poor work performance); or other (alcohol/drug problems; other volunteered response)". It was subsequently categorized as mood only, non-mood only (physical/cognitive/role functioning/other) or mood and non-mood.

Other Control Variables

Respondent sociodemographics and physical health—Respondent sociodemographics were recorded, including age, race/ethnicity (Non-Latino White, African American / Afro-Caribbean, Asian, Latino, or other), education (high school education or higher versus less than a high school education), sex, poverty level (above 200% of the poverty threshold versus at or below 200% of the poverty threshold), and possession of private insurance. The number of chronic physical conditions ever experienced by respondents was also recorded.

Other mental health conditions and care—Variables included: type of provider that prescribed the medication, any other mental health care (MHC) use in the past year (none, from a primary care provider only, from a mental health specialist only, from both types of providers), past-year or history of probable major depressive disorder or anxiety (generalized anxiety disorder, panic disorder, social phobia, agoraphobia, posttraumatic stress disorder); and medication class (antidepressant or anxiolytic/sedative). All variables were based on respondent self-report; more detail is available elsewhere.[25-26]

Analyses

The relationship between adherence and perceived purpose was analyzed with Rao-Scott chi-square tests and multivariate logistic regression for the entire sample. Unadjusted chi-square tests were performed for subgroups of older adults and racial/ethnic minorities; small sample size in subgroups precluded adjusted analyses. Analyses were performed with SAS 9.2 and SUDAAN 10.0.1 and accounted for sampling weights. Unweighted n's and weighted frequencies are reported for all variables. This study was deemed exempt from review by the James J Peters VA Medical Center Institutional Review Board.

Results

The majority of respondents reported that their antidepressant, anxiolytic, or sedative was prescribed for mood improvement only (n= 481, 60.29%). In contrast, about one-fifth (n = 204, 22.83%) reported taking the medication for a non-mood purpose only; and one-sixth reported both mood and non-mood purposes (n=120, 16.88%) (see Table 1). Slightly over half the sample reported medication adherence (n = 416, 53.22%).

Entire Sample

Adults 65 years of age or older had higher adherence (72.93%) than those under the age of 65 (49.73%) in unadjusted bivariate tests ($\chi 2 = 12.64$, df = 1, p < .001). Perceived medication purpose was not significantly associated with medication adherence in unadjusted analyses.

In adjusted logistic regression, older age (Odds Ratio [OR] / year = 1.02, 95% Confidence Interval [CI] = 1.01-1.04; Table 2) remained significantly associated with increased adherence. History of an anxiety disorder was associated with lower odds of adherence (OR = 0.61, CI = 0.38-0.99). Individuals who possessed private insurance also had lower odds of adherence than those who did not have private insurance (OR = 0.64, CI = 0.41-0.99). Perceived medication purpose was not associated with medication adherence in adjusted analyses.

Subgroup Analyses

In unadjusted chi-square analyses, perceived purpose and adherence were significantly related for one racial/ethnic group: Latino respondents. Over half of Latino respondents (n=58, 53.87%) reported a mood reason only, 50 (38.77%) reported a non-mood reason only, and 14 (7.4%) reported both mood and non-mood reasons. Latino respondents who reported only non-mood reasons were more likely to be adherent than those who reported only mood reasons or mood and non-mood reasons (64.50%, 38.02%, 39.68% were adherent, respectively, $\chi 2 = 6.61$, df = 2, p =.04; Table 3). There was no significant relationship between perceived purpose and adherence for respondents 65 years of age or older or for African American/Afro-Caribbean respondents.

Discussion

This study aimed to understand the relationship between perceived symptom targets of antidepressants and anxiolytics/sedatives and adherence to these medications in a community sample. In physical illnesses, concordance between symptoms and perceived symptom targets of medication is associated with improved adherence.[15-16] In this sample, however, perceived symptom targets were only associated with medication adherence among Latino respondents. Contrary to the hypothesis, Latino respondents who perceived their antidepressant/sedative/anxiolytic medication to be for only non-mood reasons had higher adherence than those who perceived their medication to be for mood improvement. One possibility is that Latino respondents may be better educated on the relationship between somatic symptoms and mood disorders than other respondents, given that treatment guidelines for Latino patients stress the need for providers to recognize somatic symptoms.[22] However, Latino is a broad ethnic category, and the number of Latino respondents in this sample was fairly small (n=122); these results should be replicated in larger samples with more detailed measures of ethnicity.[27]

Adherence was related to some clinical and sociodemographic factors in the larger sample in multivariate analyses. Worse adherence was seen in respondents with a history of anxiety and those who were younger, which is consistent with other findings in the literature.[2, 4]

Worse adherence was also seen in individuals with private insurance, although this relationship was not robust to different specifications of the model (results available from authors) and may reflect a statistical artifact.

From these results, it does not appear that the distinction between mood and non-mood targets of antidepressants and anxiolytics/sedatives are important to patients' adherence behaviors. While this study did not identify a modifiable belief associated with medication adherence, these results suggest that clinicians may mention a range of benefits of these medications without decreasing the patients' likelihood of adherence. While providers should be careful to describe the full range of benefits and risks of any medication, they do not need to be concerned about lower adherence in the general patient population if a patient is more interested in non-mood benefits of the medication. Future research should determine whether discussing these benefits (in addition to mood-related benefits) with Latino patients improves adherence, or whether this pattern reflects a subgroup of patients who have been better educated in non-mood rather than mood benefits of antidepressants, anxiolytics, and sedatives.

A strength of this study is the use of CPES data, which are unique in that they include detailed information about antidepressant, anxiolytic, and sedative use within a large, diverse community sample. However, the study has the following limitations: 1) The sample was restricted to those taking one medication in the past year, and most respondents had been taking the medication for at least 30 days; findings may not apply to individuals beginning new medications or taking multiple medications for mood disorders. 2) Adherence was by patient self-report and may have been over-reported. 3) The diagnostic indication for each prescribed medication is unknown. 4) The small sample size in subgroup analyses precluded multivariate analysis.

Implications for Behavioral Health

Perceived symptom targets of antidepressants, anxiolytics, and sedatives do not appear to be related to adherence in the general patient population. Healthcare providers can discuss the non-mood benefits of medications for mood and anxiety disorders with patients without decreasing adherence.

Acknowledgments

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Table 1

Descriptive statistics and bivariate tests[a] examining association between perceived symptom target and adherence to medication

Variable	Entire Sample (n = 807) N(%)[b] or Mean (SE)	Adherent[c] N(%)[b] or Mean (SE)	
		No (n = 391, 46.78%)	Yes (n = 416, 53.22%)
Problems for which respondent took medication			
Mood improvement only	481 (60.29)	236 (47.00)	245 (53.00)
Non-mood only	204 (22.83)	84 (43.64)	120 (56.36)
Mood and non-mood	120 (16.88)	70 (50.61)	50 (49.39)
Medication class			
Antidepressant	587 (75.98)	299 (49.31)	288 (50.69)
Sedative/Anxiolytic	220 (24.02)	92 (38.77)	128 (61.23)
From whom did respondent receive prescription?			
General or family doctor	533 (67.25)	255 (48.70)	278 (51.30)
Psychiatrist	150 (15.62)	80 (49.46)	70 (50.54)
Other health professional	124 (17.14)	56 (36.81)	68 (63.19)
MHC in past 12 months			
None	389 (45.47)	174 (42.97)	215 (57.03)
From a primary care provider only	205 (31.15)	105 (50.14)	100 (49.86)
From a mental health specialist only	108 (11.71)	53 (41.27)	55 (58.73)
From a primary care provider and a specialist	105 (11.66)	59 (58.18)	46 (41.82)
MDD (past 12 months)			
Yes	190 (20.21)	103 (54.53)	87 (45.47)
No	617 (79.79)	288 (44.82)	329 (55.18)
MDD (history)			
Yes	172 (21.57)	84 (48.71)	88 (51.29)
No	635 (78.43)	307 (46.25)	328 (53.75)
Anxiety (past 12 months)			
Yes	349 (39.70)	178 (51.31)	171 (48.69)
No	458 (60.30)	213 (43.80)	245 (56.20)
Anxiety (History)			
Yes	179 (21.00)	91 (51.38)	88 (48.62)
No	628 (79.00)	300 (45.55)	328 (54.44)
Number of comorbid physical conditions	1.03 (0.05)	0.94 (0.09)	1.10 (0.08)
Race			
Non-Latino White	462 (85.19)	214 (45.87)	248 (54.13)
African American or Afro-Caribbean	172 (5.49)	91 (49.43)	81 (50.57)
Asian	32 (1.19)	16 (55.69)	16 (44.31)
Latino	122 (5.73)	59 (51.56)	63 (48.44)
Other	19 (2.40)	11 (56.99)	8 (43.01)
Education			

Variable	Entire Sample (n = 807) N(%)[b] or Mean (SE)	Adherent[c] N(%)[b] or Mean (SE)	
		No (n = 391, 46.78%)	Yes (n = 416, 53.22%)
High school education or higher	645 (84.29)	317 (48.54)	328 (51.46)
Less than high school	162 (15.71)	74 (37.33)	88 (62.67)
Sex			
Male	199 (30.86)	100 (48.97)	99 (51.03)
Female	608 (69.14)	291 (45.80)	317 (54.20)
Poverty threshold			
Less than or equal to 200%	351 (39.11)	169 (46.22)	182 (53.78)
Over 200%	456 (60.89)	222 (47.14)	234 (52.86)
Private insurance			
Yes	546 (74.71)	262 (48.07)	284 (51.93)
No	260 (25.29)	128 (42.92)	132 (57.08)
Age			
Under 65	690 (84.94)	354 (50.27)	336 (49.73)[*]
65 and older	117 (15.06)	37 (27.07)	80 (72.93)

MHC = mental health care; MDD = major depressive disorder; SE = standard error

[a] Rao-Scott chi-square or t-test

[b] Unweighted n's and weighted percentages are presented; Numbers may not sum to total sample size in the case of missing values on some variables

[c] Weighted percentages reflect occurrence of adherence within each level of each variable.

[*] Unadjusted Rao-Scott chi-square test significant at $p < .001$

Table 2

Adjusted logistic regression examining association between perceived symptom target and adherence to medication in entire sample

Variable	Odds Ratio (95% Confidence Interval)
Problems for which respondent took medication	
Mood improvement only	1.00
Non-mood only	0.77 (0.44, 1.32)
Mood and non-mood	0.91 (0.55, 1.51)
Medication class	
Sedative/Anxiolytic	1.00
Antidepressant	0.71 (0.41, 1.23)
From whom did respondent receive prescription?	
General or family doctor	1.00
Psychiatrist	0.85 (0.41, 1.76)
Other health professional	1.59 (0.99, 2.56)
MHC in past 12 months	
None	1.00
From a primary care provider only	0.79 (0.48, 1.30)
From a mental health specialist only	1.53 (0.71, 3.28)
From a primary care provider and a specialist	0.79 (0.43, 1.45)
MDD (past 12 months)	0.82 (0.49, 1.35)
MDD (history)	0.90 (0.63, 1.28)
Anxiety (past 12 months)	0.79 (0.49, 1.29)
Anxiety (History)	**0.61 (0.38, 0.99)**
Number of comorbid physical conditions	1.00 (0.79, 1.26)
Race	
Non-Latino White	1.00
African American or Afro-Caribbean	0.79 (0.49, 1.27)
Asian	0.56 (0.20, 1.61)
Latino	0.73 (0.42, 1.25)
Other	0.80 (0.29, 2.24)
High school education or higher	0.77 (0.34, 1.71)
Male	0.85 (0.59, 1.24)
Poverty threshold less than or equal to 200%	0.79 (0.44, 1.41)
Possessed private insurance	**0.64 (0.41, 0.99)**
Age	**1.02 (1.01, 1.04)**

MHC = mental health care; MDD = major depressive disorder; SE = standard error

Table 3

Subgroup analyses (Rao-Scott chi-square[a]) of perceived symptom targets and adherence in older adults and in racial/ethnic minorities

	Older Adults (n = 117)			African-American / Afro-Caribbean (n = 172)			Latino (n = 122)		
	Not adherent N(%)[b]	Adherent N(%)[b]	χ^2, p-value	Not adherent N(%)[b]	Adherent N(%)[b]	χ^2, p-value	Not adherent N(%)[b]	Adherent N(%)[b]	χ^2, p-value
Mood only	17 (31.27)	37 (68.73)	1.28, p = .53	59 (50.87)	49 (49.13)	0.34, p = .84	33 (61.98)	25 (38.02)	6.61, p = .04
Non-mood only	16 (25.42)	34 (74.58)		22 (45.87)	26 (54.13)		20 (35.41)	30 (64.59)	
Mood and non-mood	4 (13.25)	8 (86.75)		10 (53.00)	6 (47.00)		6 (60.32)	8 (39.68)	

[a]Rao-Scott chi-square, 2 degrees of freedom for each test

[b]Unweighted n's and weighted percentages are presented