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ORIGINAL RESEARCH

Antidepressant Adherence Among Hispanics: Patients in an Integrated Health Care Model

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Purpose: We report on antidepressant (AD) adherence among Hispanics seeking mental health services in a community primary care clinic in Texas as an ancillary outcome from a National Institutes of Health-funded study that collected data on Hispanic AD adherence over a period of two years (February 2016–February 2018). Adherence to AD medications was measured throughout the year-long trial and compared across various demographic characteristics. Since Hispanic individuals often experience stigma and cultural barriers related to AD treatment, we sought to understand what factors may increase the likelihood of non-adherence in this population.

Patients and Methods: This study focused on 69 patients who were prescribed AD medications while receiving treatment through an integrated health care model. Adherence was measured with the Patient Adherence Questionnaire, a validated 2-item questionnaire that asks patients about their medication use (missed medications or dosage changes) over the past week. We looked at patient adherence at two key time points (4-weeks and 13-weeks) and utilized logistic regression to identify factors that may increase or decrease the likelihood of adherence in Hispanic patients at a community primary care clinic.

Results: Non-adherence to AD medication was 49.3% at 4-weeks and 57% at 13-weeks post-treatment initiation. Logistic regression analyses revealed that age was the only significant predictor of AD non-adherence. As age increased, the likelihood of adherence increased by 12.2% at 13-weeks post-treatment initiation and by 11.1% at 4-weeks post-treatment initiation.

Conclusion: The likelihood of Hispanic patients to adhere to AD therapy increased with the age of the patient. Since primary care is the most likely place to be prescribed an AD for Hispanic patients, further research to better understand adherence is essential. Integrated health care interventions designed to help identify, reduce, or eliminate barriers to adherence and improve cultural understanding may help address issues of non-adherence in primary care settings.

Keywords: medication, primary care, mental health, antidepressant adherence, social work

Introduction

The prevalence of non-adherence to antidepressant (AD) medications is a persistent problem in primary care that impacts the health of patients and prevents their success in depression treatment and recovery. One analysis of a health system database revealed that 28% of patients discontinued AD use after their first prescription,[1] while another study revealed that over an 18-month period 82% of patients were offered ADs, but only 50% started and adhered to them.[2] A third study found that within a 12-week period, 43.2% of patients reported stopping or skipping AD doses and 12.9% reported reducing their dose without a clinician consultation.[3] Non-adherence to antidepressants decreases the likelihood of depression remission.[4] Understanding non-adherence, its risk factors, and consequences can assist clinicians in taking necessary steps to prevent and decrease non-adherence to AD. Hispanics may be at particular risk for non-adherence, due to their unique cultural beliefs and mental health stigma that often guide their decisions related to taking AD medication.[5–7] This study will examine adherence within this understudied population and explore risk factors for non-adherence within a Hispanic primary care sample receiving services delivered in an integrated health care model.

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Non-Adherence Risk Factors

Health beliefs and previous experiences with AD medication may increase the likelihood of patients skipping doses of medication, altering their medication taking behavior, or discontinuing their medications altogether. Patients have reported negative attitudes towards anti-depressants, lack of motivation, feelings of recovery, side-effects, lack of response from medication, forgetfulness, and concern over the high price of medications as reasons for non-adherence.[2,3] Furthermore, side-effects are often reported as the main reason for non-adherence. In one study of primary care patients, between 28.4% and 37.7% of patients reported side-effects as the main reason for stopping or skipping medication, and between 41.8% and 48.6% reported it as the reason for reducing their dose without consulting with their prescriber.[3] Patients also reported avoidance of side-effects that were often equally or more important to them than relapse prevention and symptom relief.[3] In other words, the discomfort caused by side-effects outweighed the depressive symptoms themselves. Additionally, the number of anti-depressants prescribed may coincide with increased risk for non-adherence and side-effects.[3,8]

A patient's race and cultural background may affect their likelihood of non-adherence. Studies have found that racial minorities are often less adherent to AD medication when compared to non-Hispanic whites.[10–12] African Americans (AA) show greater concerns of AD use, less understanding of treatment, and less adherence when compared to non-Hispanic whites.[13–15] Hispanic culture's unique barriers, stigma, and beliefs may lead to greater non-adherence to anti-depressants.[16,17] For instance, one study found that Hispanic's belief of familismo may be leading to non-adherence.[18] Familismo is considered the value and importance that Hispanics place on the family unit, which will often lead them to prioritize the needs of the family over their own.[18] In other words, patients may not be willing to admit depression symptoms or participate in treatment for fear of damaging the family unit and becoming a burden to them.

The extant literature on adherence has not shown a consistent effect of age as risk factor for non-adherence to anti-depressants. Studies have identified both older age groups[10–12,15] and younger age groups as more adherent[19,20] or no association between age and adherence.[21] Overall, findings show inconsistent support for age as a significant predictor of adherence; however, this limited area of study with cultural and context-specific differences certainly requires further investigation.

Integrated Health Care Models

Integrated health care refers to the collaboration between different health professionals during treatment. In depression treatment, integrated health care involves the collaboration of primary care providers, nurses, pharmacists, social workers, and psychiatrists to serve as depression care managers, educators, and provide support for medication monitoring.[9,21–23] Integrated health care models often utilize brief individual sessions and follow-up contact focused on identifying adherence barriers, providing psychoeducation, adherence planning, and discussion around each medication stigma, misconceptions, and fears associated with anti-depressant treatment.[24–26] The literature reveals that integrated health care models are often preferred and lead to better behavioral health treatment outcomes compared with traditional care.[27,28] Integrated health care models can lead to improved depression, decreased use of outside referrals for mental health specialty care, increased treatment response, increased tracking of behavioral health goals, use of relapse prevention plans, greater satisfaction with treatment, higher retention rates, and greater adherence to depression treatment.[23–28]

In the current study, we sought to examine medication adherence in a community-based primary care setting implementing an integrated health care model for the treatment of depression. Specifically, we sought to understand the impact of demographic and clinical characteristics on adherence in a sample of Hispanic patients.

Methods

The sample used for analysis in this project was extracted from an NIH-funded study looking at a culturally informed depression education intervention.[29] This randomized controlled trial examined the effectiveness of the education intervention in reducing stigma and increasing adherence to depression treatment. The project had an original sample of 150 Hispanic participants of whom a vast majority were female (88.7%).[30] The study collected data on symptoms of depression, anxiety, PTSD, AD stigma, and adherence to anti-depressants. Additional details on the original study

including the power analysis for the sample size are described elsewhere.[29] After providing written informed consent, patients were enrolled for a one-year intervention period where they received mental health treatment from a licensed clinician as well as a prescription for antidepressant medication from their primary care provider (if necessary). The original study was approved by the Institutional Review Board at the first author's institution.

Procedure

For the current study, we focused on a subsample of participants (n = 69) who were prescribed antidepressant medications (Table 1) and analyzed patient non-adherence at two time points (4-weeks and 13-weeks). Patients were screened by their primary care providers for depression and anxiety. Patients who identified as Hispanic, met diagnostic criteria for depression, and were not currently receiving depression treatment were recruited and consented into the study by the clinic's licensed clinical social worker. Participants completed baseline assessments as well as instruments measuring depression, anxiety, and antidepressant adherence during each visit with the social worker during their one-year intervention period. Assessments were conducted in-person and via phone by the social work or research assistants and lasted approximately 30 minutes. Instruments were provided in English or Spanish based on patient preference.

Table 1 Patient Characteristics and Study Variables (N = 69)

Variable	Mean (SD)	Frequency (%)
Female		60 (87)
Marital status		
Not married		20 (29)
Married		48 (69.6)
Education		
Less than HS		34 (49.3)
HS Diploma or GED		23 (33.3)
More than HS		11 (15.9)
Language		
Spanish		61 (88.4)
English		8 (11.6)
Diabetes and/or Hypertension		21 (30.4)
4-week adherence		35 (50.7)
13-week adherence		43 (62.3)
Age	40.20 (8.96)	
PHQ-9 (depression)	15.87 (4.42)	
Mild depression		2 (2.8)
Moderate depression		27 (39)
Moderately severe depression		23 (33.2)
Severe depression		17 (24.4)
GAD-7 (anxiety)	13.83 (4.49)	
Minimal		1 (1.4)
Mild		12 (17.3)
Moderate		18 (25.9)
Severe		38 (54.9)
PCL (PTSD)	50.47 (12.74)	
Problematic PTSD		46 (66.7)
LSAS (stigma)	6.12 (3.15)	

Abbreviations: HS, high school; PTSD, post-traumatic stress disorder; PHQ-9, Patient Health Questionnaire; GAD-7, Generalized Anxiety Disorder-7; PCL, Post-traumatic Stress Disorder Checklist; LSAS, Latino Scale for Antidepressant Stigma.

Instrumentation

Demographics

Demographic information collected on participants at baseline included gender, marital status, education, language spoken (English or Spanish), chronic health conditions (diabetes and/or hypertension), and age.

Patient Adherence Questionnaire (PAQ)

The PAQ is a self-report questionnaire used to measure adherence to anti-depressant medications in primary care, including diverse samples.[31–33] The PAQ is a variation of the measure utilized by Warden et al.[3] It is a 2-item questionnaire that asks patients about their medication use (missed medications or dosage changes) over the past week. The first question asks patients how often they have taken their antidepressant medication in the past week. If a participant reported taking their medication as prescribed "all the time" or that they have only missed "one" dose over the past week, then they were labelled as adherent. Patients who reported missing two or more doses were labelled as non-adherent and provided the second question which asked patients why they had missed their doses. Examples of responses to the second question include "I have reduced my dose at times because I am feeling better" and "I have not taken my medication as directed because I cannot afford it." The PAQ has been used in large studies on depression in community and clinical samples and found to be a validated screening tool for assessing adherence and reasons for non-adherence to antidepressant medication.[31–33]

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a validated screening tool used in primary care to measure symptoms of depression.[34,35] It has been shown to have strong internal consistency and demonstrated support for use with both Spanish and English-speaking Hispanics.[36–39] This tool has 9 items and scores range between 0 and 27. Individuals with scores of 0–4 have minimal depression, 5–9 mild, 10–14 moderate, 15–19 moderately severe, and 20–27 severe. We obtained Cronbach alpha in this sample ($\alpha = 0.725$).

Generalized Anxiety Disorder-7 (GAD-7)

The GAD-7 is a 7-item scale used to measure symptoms of anxiety.[40] This measure has shown strong internal consistency, validity, and reliability for Hispanic samples regardless of language preference (English or Spanish).[41] Scores range between 0 and 21 with higher scores signifying higher symptoms of anxiety. Scores between 5–9 show mild anxiety, 10–14 moderate, and >15 severe. Those who score over 10 on this measure are often diagnosed with generalized anxiety disorder. We obtained Cronbach alpha in this sample ($\alpha = 0.820$).

Post-Traumatic Stress Disorder Checklist (PCL-C)

The PCL-C is a self-report measure used to identify symptoms of PTSD.[42] It has been used with Hispanic samples and found to be valid and reliable in both its English and Spanish versions.[43] It has 17 items and scores ranging between 17 and 85. Higher scores signify more severe PTSD symptoms and a cutoff point of 33 is often used to diagnose problematic PTSD. We obtained Cronbach alpha in this sample ($\alpha = 0.890$).

Latino Scale for Antidepressant Stigma (LSAS)

The LSAS is a seven-item scale used to measure stigma to AD medications in Hispanic populations.[44] Scores range from 0 to 14, with higher scores indicating greater stigma. Each question is a stigma-related statement, participants select an answer choice based on how they believe people think in connection to that statement. Answer choices include "No one thinks that way", "Some people think that way", "everyone thinks that way", and "don't know". We obtained Cronbach alpha in this sample ($\alpha = 0.734$).

Analysis

The goal of these analyses was to look at patient AD adherence at two follow-ups (4-weeks and 13-weeks). Bivariate logistic regressions tested if patient's demographic and clinical characteristics at baseline were associated with AD adherence at each follow-up. We used these analyses to identify factors that may increase or decrease the likelihood of adherence in Hispanic patients at a community primary care clinic. All analyses were conducted in SPSS version 27.

Results

Participants

The analytic sample consisted of 69 participants of whom 60 (87%) were female. Most participants were married (69.6%), had completed less than High School for education (49.3%), and were Spanish speaking (88.4%). The average age of participants was 40.20 (SD = 8.96) and ranged from 18 to 63 years. The median age of participants was 40 years. In terms of clinical characteristics, participants had average scores of 15.87 (moderately severe depression) on the PHQ-9, 13.83 (moderate anxiety) on the GAD-7, 50.47 (clinically significant PTSD) on the PCL-C, and 6.12 on the LSAS (moderate stigma) (see Table 1). About 30% of them had at least one chronic health condition (diabetes or hypertension), 50.7% were adherent to anti-depressants at a 4-week follow-up and 62.3% at a 13-week follow-up.

AD Medication

Analyses did not reveal significant differences between the original sample (N = 150) and those who were prescribed AD treatment (n = 69). Information about specific antidepressant medicines prescribed was not available. Non-adherence to antidepressant medication was 49.3% at 4-weeks and 57% at 13-weeks post-treatment initiation.

Predictors of Adherence

Bivariate logistic regressions revealed that age was a significant predictor of antidepressant non-adherence at 4-weeks (OR = 0.872, 95% CI [0.775, 0.980], p = 0.022, NagelKerke r^2 = 0.250) and 13-weeks (OR = 0.899, 95% CI [0.837, 0.966], p = 0.003, NagelKerke r^2 = 0.202) post-treatment initiation. For each year of age, the predicted likelihood of non-adherence decreased by 12.2% at 13-weeks post-treatment initiation and by 11.1% at 4-weeks post-treatment initiation. Age of the patient explained 25.0% and 20.2% of the likelihood of adherence in the 4-week and 13-week models, respectively. None of the other demographic characteristics, levels of stigma (LSAS) nor scores on all clinical assessments (PHQ-9, GAD-7, and PCL) were significant predictors of antidepressant non-adherence at 4-weeks or 13-weeks. See Tables 2 and 3 for the results of the bivariate analyses.

Discussion

In this study, we found age to be a significant predictor of non-adherence in the sample, confirming earlier findings that show a connection between age and adherence.[10–12,15] As such, younger Hispanic adults could be at greater risk of non-adherence in the clinical setting. Clinicians should be particularly attentive to the needs of younger patients with depression and develop patient-centered interventions which focus on improving adherence including mental health literacy interventions focused on ensuring that young Hispanic adults have a proper understanding of medication types, dosages, and side effects.[49] However, the findings of non-adherence among young Hispanic adults' may not be due to

Table 2 Bivariate Logistic Regressions: 4-Week Non-Adherence Follow-Up

Variable, Reference Group	Model χ^2	Nagelkerke r^2	β	Waldt t	OR	95% CI Lower	95% CI Upper
Age	6.764**	0.250	−0.137	5.271*	0.872	0.775	0.980
Gender, male	0.035	0.001	0.216	0.034	1.241	0.125	12.286
Marital Status, Not married	3.552	0.139	−1.638	3.514	0.194	0.035	1.078
Education, less than HS	0.024	0.001	−0.082	0.024	0.922	0.325	2.611
Language, Spanish	0.044	0.002	0.256	0.045	1.292	0.122	13.670
Depression	1.044	0.041	−0.107	0.949	0.898	0.724	1.115
LSAS	1.908	0.167	0.191	1.626	1.210	0.903	1.622
Anxiety	0.112	0.004	0.038	0.110	1.038	0.831	1.298
PTSD	0.782	0.046	0.042	0.732	1.043	0.947	1.1149

Notes: *p < 0.05. **p < 0.01.
Abbreviations: PTSD, post-traumatic stress disorder; LSAS, Latino Scale for Antidepressant Stigma; HS, high school.

Table 3 Bivariate Logistic Regressions: 13-Week Non-Adherence

Variable, Reference Group	Model χ^2	Nagelkerke r^2	β	Waldt t	OR	95% CI Lower	95% CI Upper
Age	10.439***	0.202	−0.107	8.534**	0.899	0.837	0.966
Gender, male	0.411	0.009	−0.470	0.418	0.625	0.150	2.600
Marital Status, Not married	0.002	0.000	0.024	0.002	1.025	0.340	3.088
Education, less than HS	0.012	0.000	0.038	0.012	1.039	0.526	2.053
Language, Spanish	0.028	0.001	0.131	0.028	1.140	0.247	5.267
Depression	0.231	0.005	0.029	0.230	1.030	0.914	1.160
LSAS	0.022	0.000	−0.012	0.022	0.988	0.837	1.165
Anxiety	0.009	0.000	0.005	0.009	1.005	0.898	1.126
PTSD	2.185	0.063	0.038	2.051	0.062	0.986	1.095

Notes: **p < 0.01. ***p < 0.001.
Abbreviations: PTSD, post-traumatic stress disorder; LSAS, Latino Scale for Antidepressant Stigma; HS, high school.

lack of education or understanding. Therefore, further research must be conducted to better understand the reasons why young Hispanic adults may be at greater risk for non-adherence when compared to older Hispanic adults.

We also found that most clinical characteristics, such as stigma scores, and scores on other clinical assessments (anxiety, depression, and PTSD) did not significantly impact levels of adherence. Specifically, we found that patients' depression severity had no impact on their antidepressant adherence. This lack of a relationship could reflect the known cultural stigma towards antidepressants among Hispanics, which may reduce their likelihood to adhere regardless of depression scores.[45,46,50] It could also reflect health disparities associated with accessibility of medications (geographical or transportation barriers), limited health literacy, and/or lack of medical insurance.[47,48] Other explanations warrant further research to understand the relationship between severity of depression symptoms and likelihood of adherence to anti-depressants among Hispanic patients in primary care.

Limitations and Future Research

There are important limitations in this study that should be highlighted. The first limitation is the homogeneity of the sample. The sample was mainly composed of Spanish speaking Hispanic women between 20 and 64 years of age, who were receiving care at a primary care clinic. Although the findings are informative, they do not provide comparisons to other key demographic groups (eg, male, English-speaking, African Americans, Asians, etc.). In addition, the size of the sample may limit the strength and reliability of the analysis and results. These limitations impact the generalizability of these findings and highlight the need for further study. In spite of these limitations, our findings highlight the importance of studying adherence in a population at high risk of experiencing mental health disparities, Hispanics, and may inform studies with other groups who experience disparities in treatment and outcomes. Although data was collected at 4-week and 13-week time points, future research should conduct more frequent assessments of adherence to antidepressant medication allowing for a more detailed examination of patterns of medication-taking, risk factors for non-adherence, and their association with poor mental health outcomes.

Conclusion

The prevalence of non-adherence to AD medications and the findings from the current study, including the impact that age can have as a predictor of non-adherence, highlight the need for further research on risk factors that may increase and/or decrease the likelihood of patient adherence. It is imperative that future studies continue to look at adherence and the risk factors that may help predict it, utilizing larger more heterogenous samples to increase the generalizability and reliability of the findings. In addition, future studies should examine the types of medications people are taking and identify adherence patterns between demographic characteristics and medication types. This study begins to fill the gap in the current understanding of Hispanics' AD adherence and provides a foundation to continue researching AD adherence in the Hispanic community.

Abbreviations

AD, antidepressant; PTSD, post-traumatic stress disorder; PHQ-9, Patient Health Questionnaire; GAD-7, Generalized Anxiety Disorder-7; PCL-C, post-traumatic stress disorder checklist; LSAS, Latino Scale for Antidepressant Stigma; PAQ, Patient Adherence Questionnaire.

Data Sharing Statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics Approval and Informed Consent

The study protocol was reviewed and approved by the Institutional Review Board (IRB) of the University of Texas at Arlington (IRB reference number 2015-0839). All patients provided written informed consent prior to participation. Consent included the publication of their anonymized responses. This study complies with the Declaration of Helsinki.

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Disclosure

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