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Access to medications for medicare enrollees related to race/ethnicity: Results from the 2013 Medicare Current Beneficiary Survey

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Abstract

Background—Prescription medications are taken by millions of Americans to manage chronic conditions and treat acute conditions. These medications, however, are not equally accessible to all.

Objective—To examine medication access by race/ethnicity among Medicare beneficiaries.

Methods—Using the 2013 Medicare Current Beneficiary Survey (n = 10.515), this study examined access to medications related to race/ethnicity, comparing non-Hispanic blacks and Hispanics to whites. Multivariable logistic regression models were estimated, controlling for age, gender, income, education, chronic conditions, and type of drug coverage.

Results—Non-Hispanic blacks were less satisfied than whites with amount paid for prescriptions [OR = 0.69,95%CI(0.55,0.86)], the list of drugs covered by their plan [OR = 0.69,95%CI(0.56,0.85)], and finding a pharmacy that accepts their drug coverage [OR = 0.59,95%CI(0.48,0.72)], after adjustment. Low-income individuals were more likely to report not filling a prescription and taking less medication than prescribed. Compared to beneficiaries with excellent health, those with poor, fair, or good health were less satisfied with access. Access was also diminished for patients with depression, diabetes, and chronic obstructive pulmonary disease, emphysema or asthma.

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Conflicts of interest

None for all authors.

Conclusion—Possible interventions for non-Hispanic blacks might include assisting them in finding the best drug plan to meeting their needs, connecting them to medication assistance programs, and discussing convenience of pharmacy with patients.

Keywords

Medicare; Race/ethnicity; Access to care; Medication adherence

1. Introduction

In 2015, the US spent $457 billion on prescription medications.[1] Patients with chronic conditions have benefitted from these medications through reduced morbidity and mortality, and increased health-related quality of life.[2–5] Health improvements related to prescription medications are documented for a number of diseases, including cardiovascular disease and its risk factors,[6,7] diabetes,[8] HIV/AIDS,[9,10] and mental health conditions.[11,12] One study estimated that, without antihypertensive medication, average blood pressures would have been 10–13% higher, and 86,000 excess premature deaths from cardiovascular disease would have occurred in 2001.[13]

Unfortunately, many Americans do not benefit from these potentially life-saving treatments due to issues with access. The Commonwealth Fund 2007 International Health Policy Survey found that 23.1% of Americans reported not filling a prescription or skipping a dose due to cost compared to 13.4% of Australians, 11.5% of Germans, 10.0% of New Zealanders, 8.0% of Canadians, and 5.4% of people from the United Kingdom.[14]

Prior research suggests that limited access to care is particularly pronounced among non-Hispanic Blacks and Hispanics compared to non-Hispanic whites.[15] Analysis of the survey responses from the 2015 Health Interview Survey found that compared with non-Hispanic whites, Hispanics had worse access to care on 14 of the 20 access measures, similar access on 3 measures, and better access on 3 measures, while non-Hispanic blacks had worse access on 12 measures and similar access on 10 measures.[16]

Addressing lack of access to prescription medications requires a better understanding of problematic areas. The goal of this study was to examine differences in medication access related to race and ethnicity in five specific areas: 1) amount paid for prescriptions; 2) drug plan list of covered medications; 3) finding a pharmacy that accepts your prescription drug plan; 4) not filling prescriptions due to cost; 5) taking smaller dose or skipping doses.

2. Methods

2.1. Medicare Current Beneficiary Survey

This study used the 2013 Medicare Current Beneficiary Survey (MCBS) Access to Care File, which includes survey responses from a random sample of current beneficiaries.[17] This public use file contains interviews from individuals living in the community and excludes all beneficiaries who were in a health care facility (n = 950). The sample includes a random cross-section of all beneficiaries who were continuously enrolled in one or both parts of the Medicare program in 2013. MCBS sampling weights account for stratification, clustering,

multiple stages of selection, and disproportionate sampling and adjust for survey nonresponse.

2.2. Study population

A total of 10,515 elderly (age 65 or older) Medicare beneficiaries responded to the survey. Individuals under age 65 (n = 2512) or of "Other" race/ethnicity (n = 812) were dropped, as were respondents who stated "refused" or "don't know" for outcome or control variables, resulting in a study population of between 9951 and 10,515 depending on the outcome. For two measures, satisfaction with drug list and finding a pharmacy, the sample was also limited to those who reported having prescription drug coverage (n = 8901 and 9,057, respectively).

2.3. Race/ethnicity

Race/ethnicity was self-reported and categorized into one of four groups: 1) Non-Hispanic blacks (n = 999, weighted percent 9.2%); 2) Non-Hispanic whites (n = 8,821, weighted percent 82.3%); 3) Hispanics (n = 976, weighted percent 8.5%).

2.4. Access

Table 1 displays question content for access measures. The first three are ratings of satisfaction, with response sets ranging from very satisfied to very dissatisfied, while (4) and (5) are reports of access, with response sets ranging from often to never.

2.5. Statistical analyses

Demographic characteristics and measures of medication access by race/ethnicity were compared using chi-squared tests. Multivariable logistic models examined association between medication access and race/ethnicity, adjusting for age, gender, education, income level, chronic conditions, health status, and drug coverage. Analyses were conducted using STATA V13 (College Station, TX) adjusting for sampling weights provided in the public use data file. Because this was de-identified public use data, it did not meet the criteria of human subjects research and was exempt from IRB approval.

3. Results

3.1. Patient characteristics

Age, income, education, prevalence of a number chronic conditions, general health status, and drug coverage differed significantly by race and ethnicity (Table 2). Compared to non-Hispanic whites, non-Hispanic blacks and Hispanics were more likely to be under age 75 [54.5%, 58.0%, and 56.9%, respectively, $P < 0.001$] and had lower income [30.8%, 59.6%, and 68.5%, respectively, $P < 0.001$]. In addition, non-Hispanic blacks and Hispanics were more likely to have less than a high school education [13.1%, 34.3%, and 50.1%, respectively, $P < 0.01$], and be in excellent health [20.9%, 12.9%, 14.5%, respectively, $P < 0.001$]. In terms of drug coverage, non-Hispanic whites are more likely than other groups to have Medicare Advantage coverage. Non-Hispanic black and Hispanics are more than three times as likely as non-Hispanic whites to have Medicaid dual coverage.

3.2. Medication access: unadjusted results

In unadjusted analyses, race/ethnic differences in medication access existed for four measures (Table 3). Non-Hispanic whites (29%) and Hispanics (28%) were more likely than non-Hispanic blacks (21%) to be very satisfied with the amount paid for prescriptions ($P < 0.001$) and the list of drugs covered by their drug plan [30%, 30%, 21%, respectively $P < 0.001$]. Compared to non-Hispanic whites, Hispanics and non-Hispanic blacks were less likely to be very satisfied with their ease of finding a pharmacy that accepts their drug plan and more likely to report that not filling prescriptions.

3.3. Medication access: results from multivariable regression models

After adjustment, non-Hispanic blacks were significantly less likely than non-Hispanic whites to be very satisfied with the amount paid for their prescription medications [OR = 0.69,95% CI(0.55,0.86)], with the list of drugs covered [OR = 0.69,95% CI(0.56,0.85)], and finding a pharmacy that accepts their drug coverage [OR = 0.59,95%CI(0.48,0.72), Table 4]. In contrast, Hispanics rated their access similar to non-Hispanic whites, except that Hispanics were significantly more likely than non-Hispanic whites to be very satisfied with the list of covered drugs.

There were significant, and somewhat contradictory, differences in medication access related to age (Table 4). Compared to younger beneficiaries, those over age 75 were less likely to be very satisfied with ability to find a pharmacy [OR = 0.91,95%CI(0.83,0.99)]. When analyzing reports of access, however, older beneficiaries were less likely to report often or sometimes not filling prescriptions due to cost or taking less medication than prescribed. While women were more likely than men to be very satisfied with finding a pharmacy, they were less satisfied with the amount paid. Women were also more likely to report not filling prescriptions.

Moreover, beneficiaries earning less than $25,000 were less satisfied with the list of drugs and finding a pharmacy. Low-income individuals were also more likely to report not filling a prescription and taking less medication than prescribed. Education level was also significantly associated with ratings of medication access in a step-wise manner, with beneficiaries with less than a high school education being the least satisfied.

The relationship between presence of chronic conditions and medication access was mixed. People with diabetes were significantly less satisfied with the list of medications covered than those without diabetes. Patients with depression were less satisfied with their list of covered drugs and more likely to report often or sometimes not filling a prescription and taking less medication than recommended. Patients with emphysema, asthma or COPD were also more likely to report not filling medication and taking less than recommended. In contrast, some conditions, including heart disease and cancer, were significantly associated with at least one measure of improved access.

Of all the patient characteristics, the one most strongly associated with access was health status (Table 4). For all measures, beneficiaries in better health had greater access. For example, compared to beneficiaries with excellent health, those with poor health [OR = 0.42,95%CI(0.32,0.55)], fair health [OR = 0.36,95% CI(0.30,0.43)], good health [OR =

0.44,95%CI(0.38,0.52)], and very good health [OR = 0.63,95%CI(0.53,0.74)] are less likely to be very satisfied with amount paid for medication. Reports of not filling medication due to cost and taking less medication than recommended were more than threes times as likely for beneficiaries in poor compared to excellent health.

In addition, compared to beneficiaries with no drug coverage, those with Medicaid were more likely to be very satisfied with the amount paid, the list of medications, and finding a pharmacy, and less likely to report not filling medications or taking less than prescribed. Beneficiaries with private insurance were significantly more likely to be satisfied with the drug list and less likely to report not filling a medication.

4. Discussion

In this study of a random national sample of over 10,000 Medicare beneficiaries, gaps in access to prescription medications differed by race and ethnicity in several areas. Compared to non-Hispanic whites, non-Hispanic blacks were significantly less likely to be very satisfied with the amount paid for medications, the list of drugs covered, and the ease of finding a pharmacy that accepts their drug coverage. Differences persisted after controlling for socioeconomic factors. This suggests that the drug coverage that non-Hispanic blacks are obtaining may not be sufficient to meet their needs. Prior research has shown that many Medicare beneficiaries do not choose the plan that would be best suited to them.[18,19] Tools to improve the choice of Part D plan, however, are available, including the Center for Medicaid and Medicare's Plan Finder tool.[20] Providers may need to increase awareness of these tools, particularly among non-Hispanic blacks. In contrast, medication access was similar for Hispanics compared to non-Hispanic whites in all areas, except for satisfaction with the list of covered medications; for this measure, Hispanics were more satisfied than non-Hispanic whites. While the MCBS is a very comprehensive survey that has been used extensively in health services research,[21–23] this is the first study to examine specific aspects of access to medication related to race/ethnicity and other demographic factors.

The patient characteristic most strongly associated with medication access was self-reported health status, with better health related to improved access. It may be that people in poor health have difficulty accessing pharmacies or that limited access to medications leads to poor health. Further studies are needed to sort out the direction of the observed relationship.

Higher socioeconomic status was associated with better access to medications. Those with incomes less than $25,000 were less likely to be satisfied with the list of medication and ability to find a pharmacy that accepts their drug coverage, and were more likely to not fill their medication or to take less medication than prescribed. Age and gender associations with access were more complex. Older beneficiaries were less likely to be very satisfied with finding a pharmacy, but also much less likely to report not filling medication or taking less medication than recommended. Similarly, women were more likely than men to be very satisfied with finding a pharmacy but also more likely to report not filling medication due to cost.

Effective pharmaceutical use could not only improve life expectancy and quality of life, it could also lower spending on more invasive treatments[24] and reduce potentially preventable hospitalizations and emergency department visits.[25] Improving access to medications could also help reduce heath disparities related to race and ethnicity as well as socioeconomic status.[26,27]

There are several limitations to this study. First, due to the cross-sectional design, the focus was on associations rather than causation. Another limitation is that as the data are self-reported, there may be a reporting bias related to race/ethnicity. Moreover, beneficiaries who do not visit their physician regularly may not know they have certain conditions. Prior studies have shown that conditions including diabetes and hypertension are under-diagnosed in non-Hispanic blacks and Hispanics.[28]

Possible interventions might include connecting beneficiaries to drug plan finder tools and medication assistance programs. Moreover, discussing convenience of pharmacy and lists of covered drugs with patients may be appropriate. As access issues were also seen for patients with depression, diabetes mellitus, emphysema, asthma, and COPD, members of the care team may need to discuss these issues with patients with these conditions. These findings can help inform focused interventions among these groups. Increasing access to affordable essential medications on a sustainable basis is key to improving health outcomes.

5. Conclusion

This study of a stratified national random sample of over 10,000 Medicare beneficiaries found differences in specific areas of access to prescription medications related to patient characteristics, including race/ethnicity, socioeconomic status, self-reported health status, and chronic conditions. Although these findings may aid in designing targeted interventions to improve access, further research is needed, including geographical studies to identify regional differences and qualitative analysis to gain an understanding of barriers from the patient's perspective.

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Table 1

Medicare Current Beneficiary Survey (MCBS) questions related to medication access.

Topic	Question content
Amount paid for prescription	Please tell me how satisfied you have been with … The amount you have to pay for your prescribed medicine. [Very satisfied; Satisfied; Dissatisfied; Very dissatisfied]
List of drugs covered by drug plan	Please tell me how satisfied you have been with …Your prescription drug plan's formulary or the list of drugs covered by the plan. [Very satisfied; Satisfied; Dissatisfied; Very dissatisfied]
Finding a pharmacy that accepts drug plan	Please tell me how satisfied you have been with … The ease of finding a pharmacy which accepts your drug plan. [Very satisfied; Satisfied; Dissatisfied; Very dissatisfied]
Not fill due to cost	Please tell me how often during (current year) have you done any of the following things. Have you often, sometimes, or never … Decided not to fill a prescription because it cost too much. (Often, Sometimes, Never)
Took smaller dose	Please tell me how often during (current year) have you done any of the following things. Have you often, sometimes, or never …taken smaller doses than prescribed to make the medicine last longer. (Often, Sometimes, Never)
Skipped dose	Please tell me how often during (current year) have you done any of the following things. Have you often, sometimes, or never … Skipped doses to make the medicine last longer. (Often, Sometimes, Never)

Table 2

Patient characteristics related to race and ethnicity. All percentages are weighted.

	Non-Hispanic whites (82.3%)	Non-Hispanic blacks (9.2%)	Hispanics (8.5%)	p-value
Age (%)				<0.001
65–74	54.5%	58.0%	56.9%	
75+	45.5%	42.0%	43.1%	
Female (%)	44.7%	40.8%	43.7%	0.07
Income < $25,000	30.8%	59.6%	68.5%	<0.001
Education				<0.001
<high school graduate	13.1%	34.3%	50.1%	
High school graduate	36.4%	32.8%	23.8%	
Some college or more	50.4%	32.9%	26.1%	
Chronic conditions				
High blood pressure	66.1%	83.3%	70.3%	<0.001
High cholesterol	58.7%	58.7%	58.7%	0.40
Diabetes	25.6%	39.4%	35.6%	0.0.001
Heart Disease	11.2%	9.6%	8.5%	0.10
Emphysema/Asthma/COPD	18.3%	15.8%	16.5%	0.73
Heart failure	6.9%	8.1%	6.2%	0.01
Depression	21.8%	15.8%	26.1%	<0.001
Cancer	20.1%	15.4%	14.6%	<0.001
General health				<0.001
Excellent	20.9%	12.9%	14.5%	
Very good	35.1%	24.5%	20.3%	
Good	27.9%	34.7%	33.4%	
Fair	11.8%	22.9%	24.6%	
Poor	4.2%	5.0%	7.2%	
Drug coverage[a]				
Medicare Part D (%)	8.0%	17.8%	16.5%	<0.001
Private (%)	25.7%	22.4%	12.4%	<0.001
Medicare Advantage (%)	29.2%	33.2%	48.5%	<0.001
Medicaid coverage (%)	6.9%	27.7%	35.9%	<0.001
No drug coverage (%)	37.0%	23.0%	17.9%	<0.001

[a]Percent of coverage in drug coverage categories do not add to 100% as beneficiaries could have more than one type of coverage.

Table 3

Prescription medication Access related to race and ethnicity.

	Non-Hispanic white (82.3%)	Non-Hispanic black (9.2%)	Hispanic (8.5%)	p-value
Amount paid for prescriptions				<0.001
Very satisfied	29.1%	20.7%	27.6%	
Satisfied	55.2%	62.3%	52.5%	
Dissatisfied	12.7%	13.5%	16.1%	
Very dissatisfied	3.0%	3.6%	3.9%	
List of drugs covered				<0.001
Very satisfied	29.7%	20.9%	29.9%	
Satisfied	62.6%	73.8%	61.4%	
Dissatisfied	6.5%	4.5%	7.7%	
Very dissatisfied	1.2%	0.9%	1.0%	
Finding pharmacy				<0.001
Very satisfied	51.6%	32.7%	41.4%	
Satisfied	47.5%	66.4%	57.4%	
Dissatisfied	0.8%	0.8%	1.1%	
Very dissatisfied	0.2%	0.1%	0.1%	
Not fill prescription due to cost				<0.001
Often	0.9%	1.5%	0.5%	
Sometimes	5.8%	6.4%	7.5%	
Never	93.4%	92.1%	92.0%	
Took smaller dose of medication				0.08
Often	0.7%	1.0%	0.8%	
Sometimes	3.8%	3.2%	3.6%	
Never	95.5%	95.8%	95.6%	
Skipped dose to make medication last				<0.001
Often	0.5%	0.7%	0.5%	
Sometimes	2.8%	3.3%	2.8%	
Never	96.7%	96.0%	96.7%	

Table 4

Multivariable logistic regression results: Factors related to perceptions of medication access.

	Very satisfied with amount paid for medication (n = 9951)	Very satisfied with list of drugs covered (n = 8901)	Very satisfied with finding pharmacy that accepts drug plan (n = 9057)	Often or sometimes not fill prescription because of cost (n = 10.510)	Often or sometimes took smaller dose/skipped dose of medication (n = 10,515)
	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)
Age 65–74	1	1	1	1	1
Age 75+	1.00 [0.90,1.11]	0.94 [0.85,1.04]	0.91 [0.83,0.99]	0.44 [0.37,0.52]	0.63 [0.52,0.77]
Female	0.90 [0.81,0.99]	1.01 [0.91,1.13]	1.19 [1.09,130]	1.25 [1.00,1.54]	1.03 [0.86,1.24]
Race/ethnicity					
Non-Hispanic Black	0.69 [0.55,0.86]	0.69 [0.56,0.85]	0.59 [0.48,0.72]	1.04 [0.73,1.46]	1.04 [0.73,1.49]
Hispanic	0.99 [0.82,1.19]	1.25 [1.05,1.50]	0.94 [0.79,1.13]	0.97 [0.70,1.34]	0.83 [0.54,1.29]
Non-Hispanic White	1	1	1	1	1
Income <$25,000	1.07 [0.96,1.19]	0.81 [0.71,0.94]	0.76 [0.67,0.86]	1.71 [1.41,2.08]	1.60 [1.22,2.11]
Education					
<High school	0.67 [0.57,0.79]	0.64 [0.54,0.76]	0.50 [0.43,0.59]	1.15 [0.85,1.56]	0.81 [0.58,1.13]
High school grad	0.83 [0.73,0.95]	0.90 [0.79,1.03]	0.78 [0.71,0.87]	1.13 [0.93,1.38]	0.86 [0.70,1.06]
Some college or higher	1	1	1	1	1
College	1	1	1	1	1
College+	1	1	1	1	1
Chronic conditions					
High blood pressure	1.12 [0.99,1.27]	1.11 [0.96,1.27]	1.04 [0.94,1.16]	0.94 [0.73,1.20]	0.61 [0.47,0.80]
High cholesterol	1.13 [1.00,1.26]	1.09 [0.98,1.20]	1.17 [1.07,1.28]	1.24 [1.02,1.51]	1.18 [0.96,1.37]
Diabetes	0.90 [0.81,1.01]	0.88 [0.78,0.99]	0.96 [0.86,1.06]	1.19 [0.94,1.49]	1.12 [0.92,1.52]
Heart Disease	1.26 [1.09,1.47]	1.26 [1.06,1.48]	1.13 [0.97,1.31]	0.99 [0.73,1.33]	1.07 [0.78,1.47]
Emphys/Asthma/COPD	0.93 [0.82,1.04]	0.94 [0.82,1.09]	1.09 [0.96,1.24]	1.35 [1.06,1.71]	1.75 [1.34,2.28]
Heart failure	1.02 [0.83,1.25]	1.19 [0.98,1.44]	1.24 [1.00,1.54]	1.07 [0.78,1.47]	0.96 [0.71,1.84]
Depression	0.96 [0.84,1.09]	0.83 [0.72,0.96]	1.04 [0.93,1.17]	1.64 [1.32,2.03]	2.09 [1.62,2.70]
Cancer	1.10 [0.97,1.25]	1.17 [1.03,1.33]	1.11 [0.99,1.25]	0.97 [0.77,1.21]	0.92 [0.74,1.14]
Health status					
Excellent	1	1	1	1	
Very good	0.63 [0.53,0.74]	0.68 [0.59,0.77)	0.69 [0.61,0.78]	1.09 [0.75,1.58]	1.22 [0.84,1.78]

Res Social Adm Pharm. Author manuscript; available in PMC 2017 November 05.

	Very satisfied with amount paid for medication (n = 9951)	Very satisfied with list of drugs covered (n = 8901)	Very satisfied with finding pharmacy that accepts drug plan (n = 9057)	Often or sometimes not fill prescription because of cost (n = 10.510)	Often or sometimes took smaller dose/skipped dose of medication (n = 10,515)
	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)	Odds Ratio (95%CI)
Good	0.44 [0.38,0.52]	0.49 [0.42,0.58]	0.46 [0.40,0.53]	1.61 [1.18,2.21]	1.66 [1.20,2.31]
Fair	0.36 [0.30,0.43]	0.41 [0.34,0.50]	0.42 [0.35,0.49]	2.46 [1.76,3.43]	3.10 [2.11,4.57]
Poor	0.42 [0.32,0.55]	0.47 [0.35,0.62]	0.41 [0.31,0.55]	2.45 [1.68,3.84]	2.67 [1.70,4.19]
Insurance					
Private	0.98 [0.85,1.14]	1.18 [1.02,1.36]	1.02 [0.89,1.16]	0.59 [0.46,0.76]	0.72 [0.56,0.93]
Medicare Advantage	1.05 [0.93,1.19]	1.04 [0.90,1.21]	1.00 [0.88,1.15]	0.89 [0.72,1.11]	0.89 [0.69,1.13]
Part D	0.82 [0.67,1.00]	1	1	0.99 [0.69,1.40]	1.16 [0.73,1.84]
Medicaid	2.32 [1.91,2.82]	1.96 [1.61,2.38]	1.38 [1.14,1.67]	0.46 [0.34,0.63]	0.52 [0.35,0.76]
No drug coverage	1	NA	NA	1	1