Health reform under the patient protection and Affordable Care Act: characteristics of exchange-based health insurance enrollees

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Abstract

The Affordable Care Act (ACA) reformed and expanded healthcare coverage with an exchange-based health insurance program. While millions of Americans have benefited from enrollment in ACA marketplace insurance plans, many individuals are likely to be affected by potential future policy changes. Since few studies on the features of marketplace enrollees exist, we adopted a retrospective, cross-sectional study design using 2016 National Health Interview data to identify sociodemographic and health characteristics of enrollees, comparing them to those without insurance. Chi-square tests and logistic regression examined factors associated with enrollees. Adults with multiple chronic diseases (AOR = 1.90, 95% CI = 1.44, 2.50), a history of smoking (AOR = 2.44, 95% CI = 1.82, 3.26), females, married, age 50–64 years, higher educational attainment, and retirees (AOR = 1.86, 95% CI = 1.06, 3.27) were more likely to be enrollees. Since enrollees are largely higher risk individuals with greater healthcare needs, policies that modify the ACA should take these factors into account to reduce potential adverse impacts on enrollees.

Keywords

Affordable Care Act; health; health insurance

Introduction

Background on the Affordable Care Act

The Patient Protection and Affordable Care Act (ACA) of 2010 was a significant piece of healthcare legislation for the U.S. The intent of Congressional legislators in passing the ACA in 2010 was to increase patient protection, expand access to insurance coverage, improve healthcare quality, emphasize prevention and wellness, improve system performance, expand the health workforce, and reduce or moderate healthcare costs (U.S. Department of Health & Human Services (USDHHS), 2015). As a result of the law, American citizens were required to have health insurance or incur a tax penalty. If an employer did not provide insurance, insurance options were made available through the use of a web-based tool, the Health Insurance Marketplace, also known as the Marketplace or Exchange (U.S. Centers for Medicare & Medicaid Services (CMS), 2017). These marketplaces were either facilitated by the federal government or run in state-federal partnership. Government subsidies for insurance premiums were provided to many qualified uninsured individuals applying for insurance. While ACA policy changes are likely to occur at the federal and state level, little has been reported on the characteristics of marketplace enrollees to understand the potential impact on their health if coverage is rolled back. Thus, knowledge about marketplace enrollees may inform policy changes that would benefit members.

To achieve the goal of expanding insurance coverage, the ACA authorized the creation of federal- and state-based marketplaces from which individuals could select and purchase health insurance (USDHHS, 2015). Due to the ACA, by 2015 the number of uninsured Americans was reduced from 43 million to 30 million (Sommers, 2015). Among those with insurance, 8 million had coverage under public (either federal or state-federal) health marketplaces (Cooper & Gardner, 2016). Early estimates based on data suggested that 8.0 million people obtained health insurance coverage either through market place or state-based marketplaces (Goodell, 2016).

Evaluation of the affordable care act

Initial studies focused on the implementation and impact of the ACA, along with the characteristics of individuals who received insurance coverage as the result of its implementation, are limited in the literature (Gollust, Barry, Niederdeppe, Baum, & Fowler, 2014; Holahan, 2012). Early decisions states faced were whether or not to create their own Marketplace rather than using what the federal government was designing, and whether or not to expand Medicaid to cover adults and children whose incomes were at or below 138% of the federal poverty level (Haeder & Weimer, 2013). However, researchers studying the impact of the ACA on Medicaid expansion reported that its expansion to nonelderly adults with incomes at or below 138% the federal poverty level (FPL) resulted in insurance coverage to only 17% of the 32.3 million nonelderly uninsured (Garfield, Damico, Cox, Claxton, & Levitt, 2016).

To get a better understanding of the characteristics of marketplace enrollees, researchers have used an indirect yet effective way of examining their health status by reviewing

prescription utilization (Donohue et al., 2015). Using data from Express Scripts, the largest pharmacy benefit management company in the U.S., it was determined that people who enrolled through the health marketplaces from October 2013 to February 2014 were older and had more medication needs than people who enrolled after February 2014 (Donohue et al., 2015). In a study of the impact of the ACA in Georgia, it was determined there would be a 20% increase in needed medical visits by 2025 (Gentili, Harati, & Serban, 2016). However, although the increased need would not be a significant burden on the privately insured population, the needs and accessibility would vary significantly among communities. In an analysis of Marketplace-based enrollment for 2014, in which more than 7 million Americans were enrolled, factors associated with enrollment were age, education, and history of voting in the 2012 presidential election; state level negative correlations were family size, businessrelated issues, and higher initial uninsured citizens (Moore & Lewis, 2015).

Cost of care for marketplace enrollees has also been studied. Gable et al. used a "secret shopper" study to determine individual coverage for a hypothetical 55year-old man with chronic myeloid leukemia taking imatinib. They found that with an income between 100% and 300% of the FPL, annual premiums plus large deductibles would occur for all Bronze policy choices (i.e., the lowest level premium plan with the highest deductible), more than half of the Silver policy choices (i.e., plans that qualify for both tax credits and cost sharing subsidies) (Gable, Taylor, & Zafar, 2016), and the most frequently purchased plan type (Garthwaite & Graves, 2017). Policies for smokers have surcharges that increase with age. This creates the concern that older smokers may have post-subsidy premiums which may not be affordable (Liber, Drope, Graetz, Waters, & Kaplan, 2015). People who are illiterate or not numerate may have less comprehension concerning insurance choices and may choose an inappropriate plan or a plan in which they will pay more than a comparable plan from another insurer (Barnes, Hanoch, & Rice, 2015); limited literacy and numeracy may make individuals unaware of federal subsidies, eligibilities and legal requirements for healthcare (Bias, Agarwal, & Fitzgerald, 2015).

It was proposed that under the ACA, individuals with multiple or chronic conditions would benefit from continuous insurance coverage since it would give them the ability to appropriately manage their conditions. For example, researchers evaluated relationships between health insurance and the diagnosis and management of chronic illnesses such as diabetes, hypercholesterolemia, and hypertension using the National Health and Nutrition Examination Survey (1999–2012). They found that individuals who were insured had significantly higher probabilities of being diagnosed with diabetes and hypercholesterolemia (14% higher) and hypertension (9% higher) compared to matched uninsured people (Hogan et al., 2015). These researchers concluded that with expanded coverage to half of those currently uninured, the United States would see 1.5 million more people with a diagnosis of one or more of these chronic conditions due to evaluation, and 659,000 fewer people with uncontrolled cases because of treatment.

It was also estimated that more individuals from minority racial/ethnic groups would have health insurance coverage than before the enactment of the ACA. Ethnic and racial disparities in the receipt of insurance has been long discussed in the literature (Nelson,

2002). Addressing these ethnic and racial disparities was a focus point of the ACA to enhance access to healthcare. Chen, Vargas-Bustamante, Mortensen, and Ortega (2016) used National Health Interview Survey data and found that there was a significant reduction in uninsured rates among non-Latino blacks and Latinos as compared to non-Latino whites between 2011 and 2014. Researchers using the American Community Survey from 2008 to 2014 discovered 40.5% of Hispanics and 25.8% of blacks were uninsured, compared with 14.8% of whites in 2013. However, when the major provisions of the ACA were enacted in 2014, there was a 7.15% decrease in uninsured Hispanics, 5.1% decrease for uninsured blacks, and 3% decrease for uninsured whites compared to 2013(Buchmueller, Levinson, Levy, & Wolfe, 2016).

Variation in coverage points to a need to further define health insurance marketplace enrollees' characteristics to better inform policy makers about enrollees who would be more impacted by policy changes and guide policy decisions. Therefore, for this project we adapted an interdisciplinary conceptual framework. While our basic model stems from economic theory (demand for health insurance) (Gius, 2010), we enhanced the model using public health approach and policy perspectives. Integrating economic and public health approaches, we believe that demand for health insurance is affected by many individual level factors and social determinants (Adler et al., 2016). Such factors include: age, sex, education, income, race/ethnicity (disparities) (Pickett & Wilkinson, 2015), health status (Braveman & Gottlieb, 2014), marital status (i.e. opportunity to be covered by a spouse) smoking (life-style practices) and region of residence (Garrett & Gangopadhyaya, 2016). Employment status is also an important variable for us as it has been suggested that ACA may provide incentives for people to retire early and may increase the probability of retirement (Congdon-Hohman, 2014; Gustman, Steinmeier, & Tabatabai, 2016; Wang & Shi, 2014). Finally, as price of insurance may also affect the choice to buy in the market we also considered income as a variable; as many adults with lower incomes will be given subsidies to cover their insurance premium (Eibner & Saltzman, 2015), we use income as a crude proxy. We examined the health behavioral profiles between marketplace enrollees and those who had no insurance (Blavin, Karpman, & Zuckerman, 2016; Donohue et al., 2015; Trish, Damico, Claxton, Levitt, & Garfield, 2011).

Methods

Study design and data source

We adopted a retrospective cross-sectional design for this study. The data source used was the 2016 National Health Interview Survey (NHIS). The NHIS is an annual survey of noninstitutionalized civilian individuals residing in the US at the time of the interview (Centers for Disease Control and Prevention (CDC), 2016). In this paper, we derived variables from the adult, household and family modules from the NHIS data. These files provide information on demographics, socioeconomic characteristics, insurance status, chronic physical and mental health conditions, functional status, health status and other variables. Chronic conditions in the dataset were elicited by asking the participants whether they have ever been told by a doctor or other health professional that they had a chronic condition. The list of chronic conditions included: asthma, arthritis, cancer, chronic

obstructive pulmonary disease (COPD), diabetes, heart disease (angina pectoris, coronary heart disease, heart attack, stroke, and other heart conditions), hyperlipidemia, hypertension, and depression.

Study sample

The study sample included working age adults, aged between 27 and 64 years, who had marketplace-based insurance or no insurance. We selected this age group because children under 26 may be covered under their parents' health insurance policy; marketplace insurance is not available for those over age 64, since they are individuals who are typically covered by Medicare. The study sample was further restricted to adults who had continuous/complete data on the health insurance Marketplace variable. We also excluded those with other types of health insurance coverage such as military, Indian health service and other types of coverage. The final study sample was composed of 3,351 adults of whom 1,099 had marketplace-based coverage and 2,252 were uninsured.

Measures

Dependent variable: marketplace-based health insurance coverage

As part of the ACA, the Health Insurance Marketplace or state-based marketplaces were established for individuals to purchase health insurance coverage. The NHIS added questions to capture healthcare data obtained through marketplace-based health insurance coverage (Centers for Disease Control and Prevention (CDC), 2014). For the purposes of this study we used the NHIS definitions to differentiate insurance coverage classification (CDC, 2014): NHIS considers a person reporting private coverage as having marketplace-based coverage if they report having a private, non-employment-based, directly purchased plan and the plan name provided is (a) a marketplace plan name, or (b) a marketplace portal name (e.g., Healthcare.gov), or (c) they have provided a marketplace company name and the individual indicated that he/she obtained the plan through the Health Insurance Marketplace or state-based marketplace, or (d) the plan name was unknown or refused and the respondent indicated that the plan was obtained through the Health Insurance Marketplace or state-based marketplace. The NHIS uses the provision of a marketplace plan name or a marketplace portal name to count heavily in the classification of that individual as having marketplace-based coverage. Individuals with employment-based coverage were not considered to have marketplace coverage unless a very specific marketplace plan name was provided (CDC, 2014). As long as the insurance was obtained through Healthcare.gov, the Health Insurance Marketplace, or through the name of their state's marketplace, we considered the person to have marketplace-based insurance coverage.

Independent variables

We included demographic information (sex, age, race/ethnicity [White, African American, Latino or other], marital status (married, divorced/widowed/separated, or never married). We also included socioeconomic status such as education (less than high school, high school, or above high school)), employment status (yes, no, and retired) and income relative to the federal poverty level (less than 100% of federal poverty level, between 100–200% of federal poverty level, between 200–400% of federal poverty level, or at least 400% of federal

poverty level). We includes variables on perceived or evaluated need including patient perceived health status (excellent/very good, good, or fair/poor), number of chronic conditions (none, one, or two or more), whether they have depression (yes/no), body mass index (underweight/normal weight, overweight, or obese), smoking status (never smoked, former smoker, or current smoker), and physical activity (have daily physical activity, weekly physical activity, or no exercise), and the region of residence (Northeast, Midwest, South, West.)

Limitations

A study strength is the use of national data, which is widely accepted and robust. A study limitation is that individuals with 138% of the federal poverty level are eligible to qualify for Medicaid expansion, but this category was not available in NHIS 2016. Health status variables for those without health insurance coverage may be underestimated because of limited contact with the healthcare system. We also did not have information on variation in sign up for the ACA based on state or how active the health navigator programs were by state. Since the study was cross-sectional, it is unknown whether the chronic conditions were diagnosed after individuals had obtained health insurance coverage. Nevertheless, this study reveals a range of features of individuals who enrolled in marketplace-based insurance coverage in 2016 and fills an important knowledge gap on members that are more likely to be affected by policy changes given their larger presence in the exchanges.

Data analyses

For bivariate analyses, we compared the differences in demographics, socioeconomic characteristics, health conditions and personal health practices between adults with marketplace-based health insurance and those who were uninsured using chi-square tests. For multivariable analyses, we used logistic regression to examine the association between individual characteristics and marketplace-based health insurance enrollment. Data were analyzed with SAS 9.4® (Cary, NC) software taking into account the sample weights, provided in the NHIS 2016 data set. Although we used publically available non-identifiable data, we did submit the study to the West Virginia University Institutional Review Board (IRB); the IRB confirmed that our study was not considered human subject research.

Results

Description of the study sample

Table 1 provides descriptive statistics for the study sample (N = 3,351). The sample was balanced with 47% female and 53% male. About 49% of the adults in the sample were white, 13% were non-Hispanic black, and 31% were Latino. Most of the individuals (40%) were between 27 and 39 years old, 26% were between 40 and 49, 23% were between 50 and 59, and 11% were between 60 and 64. About 48% of the adults in the sample had more than high school education, 17% had low income, and 26% had multimorbidity. A majority of the sample (58%) reported no exercise and never smoked (57%).

Description of the study sample by insurance status

We also provide descriptive statistics and chi-square test results for group comparisons by insurance status, i.e., marketplace-based insurance or uninsured; the detailed results are presented in Table 2. We found that among those with marketplace-based insurance, there existed a higher percentage of females, married individuals, and those who had attained a higher education compared to those without health insurance. Among those with marketplace-based insurance, a higher percentage of people reported having chronic conditions as compared to those without health insurance. A lower percentage of individuals who identified themselves as being current smokers, as well as those who do not exercise, were found to have marketplace-based insurance as compared to those without health insurance. The p-values for most of these comparisons were less than 0.001.

Multivariable logistic regression

Table 3 provides the results from multivariable logistic regression on marketplace-based health insurance status. The analyses showed that Latinos (AOR = 0.70, 95% CI = 0.50, 0.999), people with less than college education (less than high school: AOR = 0.40, 95% CI = 0.28, 0.56) and lower income (< 100% FPL: AOR = 0.26, 95% CI = 0.16, 0.42) were significantly less likely to have marketplace-based insurance. On the other hand, women (AOR = 1.47, 95% CI = 1.16, 1.87), older adults (50–59 years: AOR = 2.37, 95% CI = 1.76, 3.18; 60–64 years: AOR = 3.24, 95% CI = 2.24, 4.67), those who retired (AOR = 1.86, 95% CI = 1.06, 3.27), those with 2 or more chronic conditions (AOR = 1.90, 95% CI = 1.44, 2.50), and former and current smokers (AOR = 2.44, 95% CI = 1.82, 3.26 and AOR = 2.26, 95% CI = 1.63, 3.15 respectively) were significantly more likely to have marketplace-based insurance, with most p-values less than 0.001. There were also regional differences since people living in the South, Midwest and West were less likely to have marketplace-based insurance.

Discussion

The ACA, which was signed into law in March 2010 and upheld by the US Supreme Court in June 2012, was created to improve healthcare access to individuals, families, and small business owners, control healthcare costs, and reduce insurance industry abuse (USDHHS, 2015). The lawmakers provided premium relief for many uninsured people, and expanded access to Medicaid with the belief that, as a result of the law, a large pool of healthy Americans would be insured (and use less health services) and their premiums would offset the cost of care for the expansion. Currently, our nation is poised to experience changes in healthcare laws; therefore, it is important to characterize marketplace enrollees to illuminate who would be most impacted if the health marketplaces were rolled back.

There was early concern over who the ACA would cover, particularly in light of rising healthcare costs at time (Oberlander, 2011). Many of the findings fit with our conceptual framework where we thought the demand for insurance would be driven by individual factors such as age, sex, and education (Pickett & Wilkinson, 2015), and well as health status (Braveman & Gottlieb, 2014), marital status, and smoking status. For example, in our study, health marketplace enrollees were more likely to be female, age 50–64, married,

better educated, retired, have chronic illness, and have a history of smoking. We also found regional differences with people living in the South, Midwest and West less likely to have marketplace-based insurance than those in the north, differences our conceptual model included and have been discussed in the literature (Garrett & Gangopadhyaya, 2016).

A noteworthy finding of our study is that retirees were more likely to enroll in health marketplaces. This fits with our conceptual model projected that employment status would be an important variable as access to insurance through the ACA might increase the probability of early retirement (Congdon-Hohman, 2014; Gustman et al., 2016; Wang & Shi, 2014) It has been suggested that ACA may provide incentives for people to retire early and may increase the probability of retirement (Congdon-Hohman, 2014; Gustman et al., 2016; Wang & Shi, 2014). While it is possible that adults may not have retired early because of the security provided by ACA, one cannot rule out the possibility that adults who retired early and who were not covered by employer insurance after retirement were more likely to enroll in marketplace-based coverage.

Health changes over time, and despite efforts to keep healthcare costs contained, create competition, and expand health universally, the costs of healthcare continue to mount as newer, more expensive techniques and medications are discovered, and healthcare is utilized. Health insurance companies are leaving the general marketplace (Watson, 2017). In 2016, Aetna announced that the company and will sell individual insurance policies in only 242 counties in four states, down almost 70 percent from the 778 counties in 15 states where the company markets the ACA plans (Garthwaite & Graves, 2017; Pauly, Harrington, & Leive, 2015). Premium changes are expected with other insurance companies, and although the premiums will increase from pre-reform coverage to Bronze or Silver policy choices, these increases are predicted to be less for younger people and more for older adults, particularly older women (Dafny, Gruber, & Ody, 2015). If UnitedHealth leaves the Health Insurance Marketplace, the lack of competition may lead to less pressure on insurance companies to keep premiums low. It is estimated that if half of a state's active insurers had participated in the 2011 marketplace, premiums would have been 11.1% lower and federal subsidies would have been reduced by $1.7 billion (Dickstein, Duggan, Orsini, & Tebaldi, 2015). Also essential is the size of the coverage region as small and rural markets have less competition (CMS, 2017). When a rural market is combined with an urban market area, there are 60–80% more insurers available and individuals may save $200-$300 on annual premiums (CMS, 2017). There is a need for refinement in market regions and continued federal support to decrease regional differences and constrain costs.

Political leaders have vowed to repeal and replace the ACA. Such changes could impact those who have secured coverage through the health marketplaces, affecting nearly 13 million people currently covered (Garthwaite & Graves, 2017). Among other factors, we found that those with chronic illness were more likely to be covered by marketplace insurance. While the NHIS does not record when chronic illnesses are diagnosed, repealing the provisions that allow coverage despite having pre-existing conditions may have left nearly 50% of the study cohort without coverage. This finding is concerning as policy is seen as shifting towards narrow networks to contain costs by drastically reducing access to certain hospitals, medical centers and physicians, particularly the exclusion of some premier

hospitals such as Cedar Sinai (Haeder, Weimer, & Mukamel, 2015), creating concerns about the quality of care delivered.

It is also interesting to note that individuals with higher levels of education were more likely to be health marketplace enrollees. This is supported by prior focus group research that individuals who were uninsured or recently insured (within 6 months of the meeting) had very limited understanding of basic health insurance concepts, the ACA, and the Marketplace (Zimmerman, LaPierre, Jones, Gurley-Calvez, & McCandless, 2017). This study performed targeted outreach to educate on insurance and the ACA was conducted to help increase insurance coverage rates, yet results showed that despite assistance, individuals still were not well enough informed about health insurance and the ACA overall. Educational interventions on the purpose and limits of marketplace health insurance, and health insurance in general, would be helpful to increase health literacy in the U.S. Furthermore, research has shown the value of navigators in helping individuals gain access and understand insurance under the ACA because they can manage government bureaucracy and system issues (Tummers & Rocco, 2015).

Our findings have implications for future policy changes, some of which have already been initiated by the Trump administration. In 2017, as part of the new tax law, Congress repealed the individual mandate requiring individuals to have insurance; this ruling will increase cost of individual market premiums (Lambrew, Aron-Dine, Berger, Fiedler, & Levitis, 2018). We found that enrollees were more likely to have chronic conditions, and these individuals would be most likely to desire continuous enrollment under the ACA and pay larger premiums. Premiums increased 50% ($180) on average in 2018 and this was driven largely by greater enrollment of individuals who were sicker (Van Parys, 2018). Also, in October 2017, Trump issued an executive order calling for the expansion of short-term insurance plans which have substandard coverage (Lambrew et al., 2018). These plans are less comprehensive and can deny coverage for those with pre-existing conditions, exclude benefits such as medication coverage, and lower annual limits on what the plan covers (Lambrew et al., 2018). Policy changes may also have a negative impact on retirees, another category of individuals we found more likely to be covered through marketplaces; insurance companies can price their plans up to three times more for those closer to the age of 64 than younger adults who purchase plans through the Health Insurance Marketplace (Jones, Gusmano, Nadash, & Miller, 2018). Furthermore, looming is the 2019 proposed Benefit and Payment Notice which can weaken the requirement of the ACA for *Essential Health Benefits*, in which health insurance plans sold in the Marketplace are required to offer basic services such as emergency services, prescription drug coverage, and outpatient care (Haeder, 2014). Protecting these original safeguards in the ACA would be important for individuals who have greater need for healthcare coverage, the characteristics of which have been elucidated in this study. Unfortunately, it appears that the actions of the current administration are weakening the ACA and reversing gains for many marketplace enrollees, and our study sheds light on Americans who may be most affected by ACA modifications (Collins, Gunja, Doty, & Bhupal, 2018).

Conclusion

In this study we examined sociodemographic and health data of working age adults aged 27 to 64 years that correlated with enrollment in marketplace-based insurance coverage in 2016. We found that people with multiple chronic diseases, a history of smoking, females, age 50–64 years, married people, and people with higher education attainment were much more likely to have marketplace-based insurance. Individuals age 40–49 years and those retired were also more likely to be marketplace enrollees. ACA policy changes are therefore likely to have a large influence on a diverse range of enrollees.

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Table 1.

Characteristics of the study sample working age adults 27–64 years national health interview survey, 2016.

	N	Wt. N	Wt. %
All	**3,351**	**26,170,883**	**100.0**
Sex			
Women	1,677	12,224,074	46.7
Men	1,674	13,946,809	53.3
Race/Ethnicity			
White	1,943	12,966,139	49.5
African American	413	3,387,712	12.9
Latino	775	8,035,074	30.7
Other	220	1,781,958	6.8
Age Group			
27–39 years	1,235	10,497,637	40.1
40–49 years	832	6,758,071	25.8
50–59 years	818	5,911,751	22.6
60–64 years	466	3,003,424	11.5
Marital Status			
Married	1,683	16,586,062	63.4
Div/Wid/Sep	870	4,740,958	18.1
Never Married	789	4,805,288	18.4
Education			
Less than high school	678	6,055,156	23.1
High school	954	7,458,557	28.5
Above high school	1,707	12,540,927	47.9
Employed			
Yes	2,233	17,314,184	66.2
No	959	7,766,713	29.7
Retired	156	1,073,462	4.1
Poverty			
< 100% FPL	643	4,586,747	17.5
100– > 200% FPL	979	7,807,008	29.8
200% – < 400% FPL	1,005	8,076,636	30.9
400% FPL	555	4,264,300	16.3
Perceived Health Status			
Excellent/Very Good	1,879	14,707,405	56.2
Good	1,010	7,949,842	30.4
Fair/Poor	460	3,502,337	13.4
Number of Chronic Conditions			
None	1,594	12,963,752	49.5
One	822	6,383,806	24.4
Two or more	935	6,823,325	26.1

	N	Wt. N	Wt. %
All	**3,351**	**26,170,883**	**100.0**
Depression			
Yes	159	1,110,829	4.2
No	3,105	24,334,702	93.0
Body Mass Index			
Under/Normal weight	1,053	8,008,260	30.6
Overweight	1,102	9,154,274	35.0
Obese	1,070	8,007,814	30.6
Smoking			
Never Smoked	1,793	14,941,899	57.1
Former	676	4,767,058	18.2
Current Smoker	874	6,393,928	24.4
Physical Activity			
Daily	266	1,927,819	7.4
Weekly	1,118	8,610,631	32.9
No exercise	1,927	15,279,384	58.4
Region			
Northeast	464	3,579,698	13.7
Midwest	608	4,318,350	16.5
South	1,445	12,143,539	46.4
West	834	6,129,296	23.4

Based on 3,351 adults ages between 27 and 64 years, with no missing data on the health insurance variable. Total for some variables may not add to 3,351 due to missing data (marital status, education, employment, income, perceived health status, depression, body mass index, smoking, and physical activity).

Abbreviations: Div/Wid/Sep: Divorced/Widowed/Separated; FPL: Federal Poverty Level

Table 2.

Characteristics of the study sample by insurance status working age adults 27–64 years national health interview survey, 2016.

	Exchange-Based		Uninsured			
	N	Wt. %	N	Wt. %	Chi-square	Sig
ALL	1,099	100.0	2,252	100.0		
Sex					14.324	***
Women	626	53.1	1,051	43.7		
Men	473	46.9	1,201	56.3		
Race/Ethnicity					66.038	***
White	780	62.2	1,163	43.7		
African American	105	10.4	308	14.1		
Latino	152	18.8	623	36.2		
Other	62	8.6	158	6.0		
Age in Years					135.389	***
27–39 years	292	27.7	943	45.8		
40–49 years	229	23.0	603	27.1		
50–59 years	321	28.9	497	19.7		
60–64 years	257	20.3	209	7.4		
Marital Status					24.727	***
Married	610	69.4	1,073	60.6		
Div/Wid/Sep	278	15.8	592	19.2		
Never Married	209	14.8	580	20.0		
Education					166.257	***
LT High School	107	10.1	571	29.1		
High School	260	23.3	694	30.9		
Above High School	730	66.5	977	39.4		
Employed					121.935	***
Yes	758	70.3	1,475	64.2		
No	240	21.0	719	33.7		
Retired	100	8.6	56	2.0		
Poverty					143.634	***
< 100% FPL	93	5.8	550	22.9		
100– < 200% FPL	282	25.4	697	31.9		
200% – < 400% FPL	414	39.9	591	26.7		
400% FPL	257	23.8	298	12.8		
Perceived Health Status					13.733	**
Excellent/Very Good	676	62.2	1,203	53.5		
Good	305	26.8	705	32.0		
Fair/Poor	118	11.0	342	14.5		
Number of Chronic Conditions					52.935	***
None	418	39.3	1,176	54.3		

	Exchange-Based		Uninsured			
	N	Wt. %	N	Wt. %	Chi-square	Sig
One	286	26.0	536	23.7		
Two or more	395	34.8	540	22.1		
Depression					7.768	*
Yes	27	2.4	132	5.1		
No	1,038	94.6	2,067	92.2		
Body Mass Index					3.801	
Under/Normal	361	33.1	692	29.4		
Overweight	370	34.9	732	35.0		
Obese	328	28.7	742	31.5		
Smoking					76.702	***
Never Smoked	651	62.8	1,142	54.4		
Former	278	23.0	398	16.0		
Current Smoker	168	14.0	706	29.3		
Physical Activity					24.709	***
Daily	86	6.4	180	7.8		
Weekly	432	39.3	686	29.9		
No exercise	562	52.1	1,365	61.3		
Region					35.301	***
Northeast	229	18.9	235	11.3		
Midwest	216	18.9	392	15.4		
South	390	37.5	1,055	50.5		
West	264	24.6	570	22.9		

Based on 3,351 adults ages between 27 and 64 years, with no missing data on the health insurance variable. Total for some variables may not add to 3,351 due to missing data (marital status, education, employment, income, perceived health status, depression, body mass index, smoking, and physical activity). Asterisks represent significant group differences in health insurance status based on chi-square tests.

Div/Wid/Sep: Divorced/Widowed/Separated; LT: Less than; FPL: Federal Poverty Level

***
$p < .001$

**
$.001 \quad p < .01$

*
$.01 \quad p < .05$

Table 3.

Adjusted Odds Ratios (AOR) and 95% Confidence Intervals (CI) from logistic regression on exchange-based health insurance status working age adults 27–64 years national health interview survey, 2016.

	AOR	95% CI	Sig
Sex			
Women	1.47	[1.16, 1.87]	**
Men (Ref)			
Race/Ethnicity			
White (Ref)			
African American	0.70	[0.48, 1.01]	
Latino	0.70	[0.50, 0.999]	*
Other	0.85	[0.53, 1.36]	
Age in Years			
27–39 years (Ref)			
40–49 years	1.40	[1.05, 1.86]	*
50–59 years	2.37	[1.76, 3.18]	***
60–64 years	3.24	[2.24, 4.67]	***
Marital Status			
Married (Ref)			
Div/Wid/Sep	0.57	[0.44, 0.74]	***
Never Married	0.80	[0.61, 1.06]	
Education			
LT High School	0.40	[0.28, 0.56]	***
High School	0.59	[0.45, 0.78]	***
Above High School (Ref)			
Poverty			
< 100% FPL	0.26	[0.16, 0.42]	***
100– < 200% FPL	0.72	[0.49, 1.06]	
200% – < 400% FPL	0.78	[0.54, 1.12]	
400% FPL (Ref)			
Perceived Health Status			
Excellent/Very Good (Ref)			
Good	0.70	[0.54, 0.91]	**
Fair/Poor	0.82	[0.57, 1.18]	
Employed			
Yes (Ref)			
No	0.55	[0.43, 0.70]	***
Retired	1.86	[1.06, 3.27]	*
Number of Chronic Conditions			
None (Ref)			
One	1.20	[0.93, 1.55]	
Two or more	1.90	[1.44, 2.50]	***

	AOR	95% CI	Sig
Depression			
Yes	0.65	[0.32, 1.31]	
No (Ref)			
Body Mass Index			
Under/Normal (Ref)			
Overweight	0.84	[0.64, 1.10]	
Obese	0.74	[0.56, 0.97]	*
Smoking			
Never Smoked (Ref)			
Former	2.44	[1.82, 3.26]	***
Current Smoker	2.26	[1.63, 3.15]	***
Physical Activity			
Daily (Ref)			
Weekly	1.27	[0.80, 2.04]	
No exercise	1.04	[0.66, 1.65]	
Region			
Northeast (Ref)			
Midwest	0.67	[0.45, 1.00]	*
South	0.56	[0.38, 0.81]	**
West	0.60	[0.40, 0.88]	**

Based on 3,351 adults ages between 27 and 64 years, with no missing data on the health insurance variable. Individuals with missing data on marital status, education, employment, perceived health status, depression, body mass index, smoking, and physical activity were not included. Missing indicators were created for income and parameter estimates for the missing categories and are not presented in the table.

Asterisks represent significant group differences in health insurance status as compared to the reference group based on the logistic regression.

Div/Wid/Sep: Divorced/Widowed/Separated; LT: Less than; Ref: Reference group

***
$p < .001$

**
$.001 \quad p < .01$

*
$.01 \quad p < .05$