The Impact of Health Insurance on Preventive Care and Health Behavior: Evidence from the ACA Health Insurance Exchanges

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Abstract

We examine the impact of the health insurance exchanges created by the Affordable Care Act (ACA) on the usage of preventive care and health behavior of individuals from low- to moderate-income families. By making private health insurance more affordable to this specific group, the health insurance exchanges aim to encourage them to purchase health insurance, increase the usage of preventive care, and improve their overall health. Using data from National Longitudinal Survey of Youth 1979 cohort (NLSY79), we find that the health insurance exchanges increased individuals' usage of some preventive cares such as screening of cholesterol and blood pressure. However, there is weak evidence that it changed individuals' health behaviors such as unhealthy diet and heavy drinking.

Introduction

Health insurance is commonly treated as an important mechanism that increases the probability of using preventive care. Many studies have shown that gaining health insurance is associated with greater usage of preventive services (Finkelstein et al. 2011; Lohr et al. 1986; Hadley et al., 2008). Preventive care is important since it can lower the probability of severe diseases, which cause death and disability. Healthcare expenses and morbidity rate can be reduced substantially by improving healthy lifestyles, immunization and detecting of potential risk factors in the early stages. Preventive services usually include vaccinations and health screenings. Regular visits to a health professional will allow patients to access to preventive measure and useful advice, thus reduce risky health behaviors, which may lead to reduced morbidity and mortality (Whitlock et al., 2012).

In 2010, the Affordable Care Act (ACA) or "Obamacare" was signed into law by president Obama. The major provisions came into force in 2014. The ACA aims at expanding insurance to uninsured individuals and enhancing the coverage of preventive services. It requires health insurance plans to have full coverage of preventive services.

Most studies that explore the impact of ACA focused on the Medicaid expansion by looking into low-income group. Besides expanding Medicaid, the other main provision of ACA is the creation of health insurance exchanges (or marketplace), which makes private health insurance more affordable to individuals with low- to moderate-income (between 100 to 400% Federal Poverty Level) by providing premium tax subsidies. By making private health insurance cheaper, ACA aims to encourage people who do not qualify for Medicaid but with relatively low income to purchase health insurance and increase the usage of preventive cares.

ACA is also promoted as a way to improve health by reducing riskier health behavior such as unhealthy diet and heavy drinking. However, previous empirical studies show the ambiguous impact of health insurance on health behaviors (Simon et al. 2017). Health insurance could have either positive or negative impact on health behaviors. With health insurance, some people will improve their health behaviors due to more access to preventive measure and useful advice, while some people will have riskier health behaviors such as heavy drinking caused by moral hazard (Campbell et al., 1994; Ehrlich and Becker, 1972)

In this study, we examine whether the health insurance exchanges have an impact on the usage of preventive care and health behavior. To our best knowledge, it is the first study that estimates the impact of health insurance on the usage of preventive cares and health behaviors based on the evidence from health insurance exchanges created by the ACA. Our study contributes to the literature by adding the evidence of effects of health insurance in general.

Methodology: Difference-in-Differences Estimation

We focus on individuals who are eligible for premium tax subsidies through the health insurance exchanges. Therefore, we restrict our sample to individuals with family income between 100 to 400% Federal Poverty Level (FPL) and do not have health insurance through Medicaid or other government sponsored programs such as Medigap. To estimate the effect of health insurance exchanges on the preventive care usage and health behavior, our strategy is to compare the changes of these two outcomes for our treatment group (people who have no health insurance or purchase private health insurance) and control group (people who have employer insurance) before and after the 2014 implementation of the health insurance exchanges. Most employer plans were relatively comprehensive before the ACA. Even though the ACA requires all new health plans must have full coverage of preventive care, which will also slightly affect people who have employer health insurance, we anticipate that health insurance exchanges affect preventive care usage and health behavior more for the treatment group since those individuals gained more access to coverage only after the implementation of health insurance exchanges.

The difference-in-differences model we use is:

$$Y_{it} = \alpha + \beta_1 ACA_{it} + \beta_2 Treat_{it} + \beta_3 ACA_{it} * Treat_{it} + \gamma_1 X_{it} + \gamma_2 \delta_t + \varepsilon_{it},$$

where i indicates individuals and t indicates year. Y_{it} is the interested outcome variable observed for individual *i* at time *t*, including usage of preventive care and health behavior. ACA_{it} indicates the period before and after the implementation of health insurance exchanges. $Treat_{it}$ indicates the treatment group, X_{it} is a vector of observable household characteristics such as age and education, δ_t is the fixed year effect, and ε_{it} is the random error term. β_1 captures the average change of outcome variable before and after the 2014 implementation of health insurance exchanges. β_2 captures the average difference of outcome variable of control group and treatment group. β_3 is our key interested estimate, which captures the average change in outcome variable for the treatment group relative to those of the control group from before and after the implementation of health insurance exchanges. Hence, β_3 reflects the real impact of the ACA health exchanges on individual's usage of preventive care and health behavior.

Data and Sample

The data are taken from the National Longitudinal Survey of Youth 1979 cohort (NLSY79). It is a nationally representative sample with high responsive rate. NLSY79 is ideally suited for this study since it asked detailed question about the source of health insurance, usage of preventive cares, and individual health behaviors. Questions about source of health insurance were asked quite differently between 2002 to 2006, so we combine data from 2008 to 2014, which is the latest survey that is publicly available. After restricting our sample to individuals with family income between 100 to 400% FPL and do not have health insurance through Medicaid or other government sponsored programs, the final sample size is 9,058.

Figures 1a-f and Figure 2a-d display the pattern of our interested outcome variables by year. Before the 2014 implementation of health insurance exchanges, the trends of using preventive cares of control group and treatment group were quite similar, both groups increased the usage of preventive cares. However, some specific preventive cares such as cholesterol test and cancer test had a sharper increase in treatment group after 2014. For health behaviors, the patterns were inconsistent before 2014. However, we observed an average small decrease of riskier health behaviors among treatment group after 2014. We conducted a multivariate regression analysis to test whether the impact is statistically significant or not.

Empirical Findings

We calculated the difference-in-differences estimates using the model we mentioned in the methodology part. We firstly estimated the baseline model without controlling for individual characteristics and fixed year effect. The simple estimates (not shown) imply that the implementation of health insurance

exchanges significantly increase the usage of screening of cholesterol and blood pressure, while the impacts on other preventive cares usage and health behaviors are not significant. Table 1 shows the difference-in-differences estimates of the impact of the health insurance exchanges implementation on the usage of preventive cares and change of health behaviors when individual characteristics and fixed year effect are controlled. The results are similar to baseline estimates, indicating that difference-in-differences approach works well in accounting the change of individual characteristics and time changes. However, we did not find a significant change of health behaviors due to the implementation of health insurance exchanges. Only behavior associated with drinking soda decreased with 10% significant interval.

These findings are not too surprising since there are some factors that can possibly offset the impact of health insurance exchanges, which only try to increase the usage from financial perspectives such as lowering the insurance premium. Some factors unrelated to financial perspectives may confound the finding. For instant, Anderson et al. (2007) articulates that the long waiting time in the clinic could hinder the demand for preventive care. In addition, the anxiety and discomfort associated with screenings could also impede the usage of preventive care.

Conclusion

This study examines whether the health insurance exchange has a significant impact on the usage of preventive care and health behavior for individuals with low- to moderate- income. It contributes to the literature by adding evidence of ACA's impact by looking at a different group that previous studies ignore. By using difference-in-differences method, we find similar result with previous studies which only focused on Medicaid or earlier insurance expansion. The implementation of health insurance exchanges increases the usage of some preventive cares, such as cholesterol and blood pressure tests. However, there is weak evidence that it changes individuals' health behavior. One limitation of this study is that we only examined the short-term effects of the implementation of health insurance exchanges due to the limited data available.

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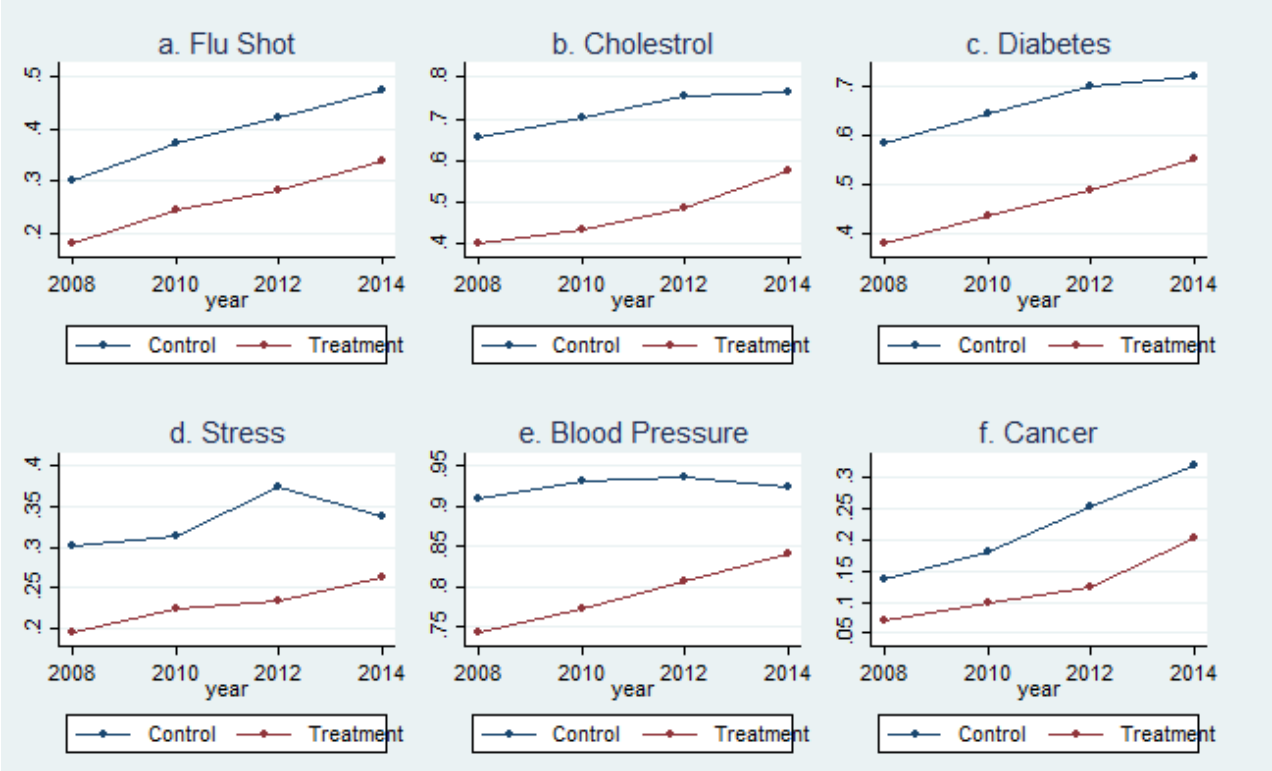

Figure 1a-f. Percentage of respondents used preventive cares, by year

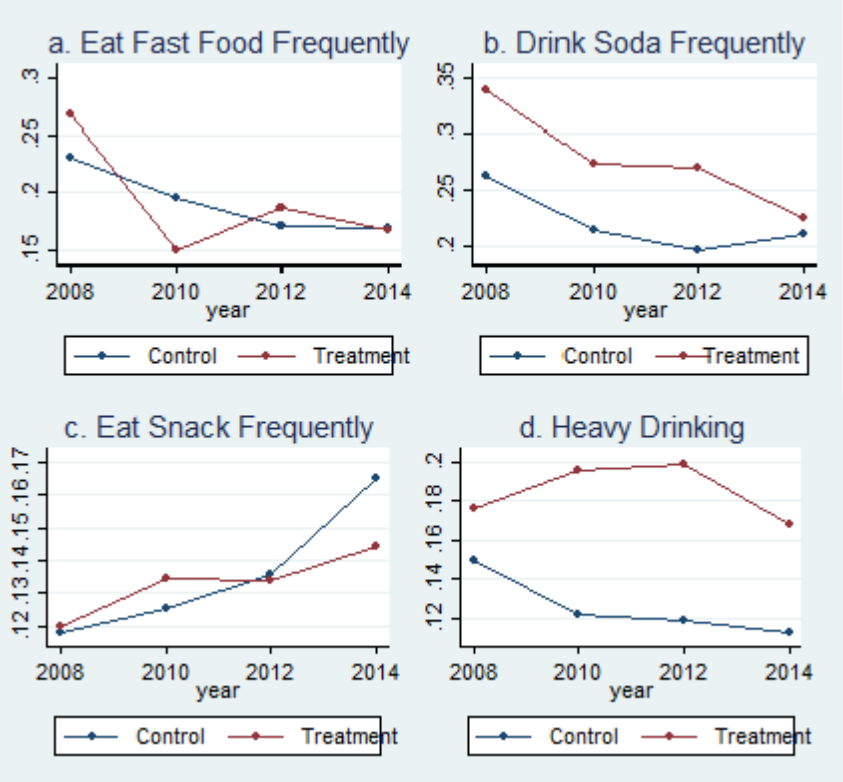

Figure 2a-d. Percentage of respondents have riskier health behavior, by

Table1. Estimates of the Impact of the Health Insurance Exchanges on Treatment Group

Key Regressors

Panel A: Preventive care

	Flu shot	Cholesterol	Diabetes	Stress	Blood pressure	Cancer
Post-ACA*Treat	-0.01633	0.06276*	0.03849	0.03261	0.05863**	-0.01824
	(-0.613)	(-2.381)	(-1.41)	(-1.261)	(-3.285)	(-0.848)
Post-ACA	0.17299***	0.10258***	0.13358***	0.03243+	0.01981+	0.16993***
	(-10.12)	(-6.064)	(-7.613)	(-1.954)	(-1.728)	(-12.305)
Treat	-0.11675***	-0.23173***	-0.19115***	-0.09592***	-0.13453***	-0.09025***
	(-9.422)	(-18.891)	(-15.040)	(-7.971)	(-16.196)	(-9.014)
Observations	9046	9026	8973	9028	9040	9033
adj. R-sq	0.036	0.08	0.057	0.02	0.057	0.046

Panel B: Health behavior

	Eat fast food frequently	Drink soda frequently	Eat snacks frequently	Heavy drinking frequently
Post-ACA*Treat	-0.00216	-0.04453+	-0.02139	0.01034
	(-0.095)	(-1.854)	(-1.103)	-0.38
Post-ACA	-0.07344***	-0.05001**	0.04340***	-0.02716
	(-5.038)	(-3.244)	-3.484	(-1.572)
Treat	0.00317	0.03982***	0.00405	0.03251*
	(-0.297)	(-3.566)	(-0.449)	(-2.557)
Observations	8732	9051	9023	4728
adj. R-sq	0.01	0.033	0.002	0.037

t statistics in parentheses

="+ p<0.10 * p<0.05 ** p<0.01 *** p<0.001"

Note: Control variables include individual characteristics (gender, race, age, marital status, family size, net family income, education) and fixed year effect.