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ABSTRACT

The Effects of the Affordable Care Act on Workplace Absenteeism of Overweight and Obese Workers*

In this paper, we examine whether the expansion of health insurance coverage brought on by the Patient Protection and Affordable Care Act of 2010 (ACA), led to a decline in absenteeism among overweight and obese individuals. We use data from the National Health Insurance Survey (NHIS) to compare absenteeism among overweight and obese workers to absenteeism among normal-weight workers before and after the ACA. Our results suggest that in the post-ACA period, the probability of being absent declined by about 1.3 (1.5) percentage points among obese (overweight) individuals. Disaggregated regressions suggest that the effect is significant among women, but not among men. Furthermore, our estimates (using a Tobit model) indicate that the obese (overweight) workers missed 0.33 (0.46) fewer days after the ACA. Again, the effect is concentrated among women. Our results show that improved health outcomes led to reduced absenteeism. Our results also show that there are no decline in absenteeism among elderly (age>=65) adults (who did not experience any increase in health insurance coverage as a result of the ACA), suggesting that the decline in absenteeism is indeed due to the expansion of health insurance coverage due to the ACA. Our estimates imply that the ACA reduced the cost associated with absenteeism by about $350 million per year.

JEL Classification: I13, I18, J08

Keywords: Affordable Care Act, obesity, overweight, absenteeism

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1 Introduction

Obesity is a growing problem in the U.S. According to the Centers for Disease Control and Prevention (CDC), 39.8 percent of adults and 18.5 percent of youths in the U.S. were obese during 2015 to 2016 (Hales, Carroll, Fryar, & Ogden, 2017). Obesity is associated with several health conditions, such as cardiovascular disorders, musculoskeletal disorders, and sleep apnea (WHO 2018), which may not necessarily lead to disability but may affect workplace absenteeism. Two systematic reviews (Neovius, Johansson, Kark, & Neovius, 2009; Schmier, Jones, & Halpern, 2006) found that obese individuals are more likely to miss work compared to their normal-weight counterparts. Cawley, Rizzo, and Haas (2007) estimated that the total cost of obesity-related absenteeism is about $4.3 billion in the U.S. In addition, Finkelstein, DaCosta DiBonaventura, Burgess, Hale, et al. (2010) estimate that the total cost associated with all obese full-time employees is about $73.1 billion and about 18 percent of this cost (or about $13 billion) is due to increased absenteeism. Access to health insurance is often suggested as a potential solution to this problem (Trogdon, Finkelstein, Hylands, Dellea, & Kamal-Bahl, 2008; Cawley et al. 2007).

In this paper, we examine whether the expansion of health insurance coverage brought by the Patient Protection and Affordable Care Act of 2010 (ACA), led to a decline in absenteeism among overweight and obese individuals. While several papers have examined the effects of different provisions of the ACA on labor market outcomes, we are not aware of any previous paper that has attempted to explore the effects of the ACA on absenteeism.

On January 1, 2014, the individual mandate of the ACA, which required most citizens and legal residents to have health insurance (or pay a fine), went into effect[1]. At the same time, 25 states (including DC) expanded Medicaid to cover individuals with earnings up to 138 percent of the federal poverty level. Later, eight more states adopted the Medicaid expansion. These two changes reduced the percentage of non-elderly adults (ages 19-64) without health insurance from 20.3 percent in 2013 to 12.2 percent in 2016. We use individual-level data from the National Health Insurance Survey (NHIS) to estimate the effect of the ACA on absenteeism among overweight ($25 \leq BMI < 30$) and obese ($BMI \geq 30$) individuals. We compare absenteeism among overweight and obese individuals, to

[1] The individual mandate was repealed in late 2017. Early evidence suggests that it did not affect the percentage of individuals with health insurance. Our study does not include the period after repeal.

absenteeism among normal-weight ($18.5 \leq BMI < 25$) individuals before and after the ACA, to estimate the effect of the ACA on absenteeism.

The ACA increased health insurance coverage rates for all weight groups (underweight, normal-weight, overweight, and obese). Therefore, we do not have an untreated (control) group per se. Therefore, our structure is somewhat different from a canonical difference-in-difference (DD) model. We hypothesize that health insurance coverage may have a different effect on absenteeism of overweight and obese workers compared to normal-weight workers. Given that, we define the "treatment effect" as the effect of the insurance expansion on absenteeism of overweight/obese workers compared to normal-weight workers. Once we define our "treatment effect" this way, we have a structure analogous to a DD model.

Our results suggest that in the post-ACA period, the probability of being absent declined by about 1.3 (1.5) percentage points among obese (overweight) individuals. The effect on women is more significant than on men. The probability of being absent declined by about 2.3 (2.6) percentage points in the post-ACA period among obese (overweight) women. The effect on men was comparatively smaller and statistically insignificant. Furthermore, our estimates (using a Tobit model) indicate that the obese (overweight) workers missed 0.32 (0.48) fewer days after the ACA. Again, the effect was stronger among overweight women (a statistically significant decline of 0.81 days) compared to overweight men (0.27 days and insignificant). The same holds for obese workers (a statistically significant decline of 0.68 days for obese women compared to an insignificant 0.05 days for obese men). In the pre-ACA period, obese (overweight) women missed 3.9 (2.9) days of work per year; therefore, this change translates to about a 17 (28) percent decline in days of missed work among obese (overweight) women.

While the ACA expanded health insurance coverage among non-elderly adults, the health insurance coverage rate of the elderly (age 65 and above) did not change during this time. In this group, the percentage of uninsured individuals declined only by 0.1 percentage points (from 1.2 percent in 2005 (DeNavas-Walt, Proctor, & Smith, 2013) to 1.1 percent in 2016 (Barnett & Berchick, 2017)). This group, therefore, provides us with an opportunity (albeit imperfect) to test whether the effect reported above is due to unrelated time effects. If the decline in absenteeism were due to some unrelated time trend, we would expect to see a similar effect among elderly obese individuals. Our results show that there is no decline in absenteeism among elderly adults, suggesting that the decline in absenteeism is indeed due to the expansion of health insurance coverage due to the ACA.

The rest of the paper is structured in the following way. Section 2 provides a background, Section 3 discusses data, Section 4 presents the results, and Section 5 concludes.

2 Background

Two previous reviews (Neovius, Johansson, Kark, & Neovius, 2009; Schmier, Jones, & Halpern, 2006) have concluded that overweight and obese workers are more likely to be absent from work compared to normal-weight workers. Related literature shows that access to health insurance reduces both the probability of missing work and the number of days missed (Gilleskie, 1998; Lofland & Frick, 2006). In particular, Dizioli and Pinheiro (2016) control for endogeneity of health insurance status, and find that workers with health insurance missed 76.54 percent (or 5.5 days) fewer work-days over two years compared to workers without health insurance. It is plausible that access to health insurance may allow obese individuals to address some of the chronic conditions associated with obesity. This has led researchers and policymakers to suggest that expanding health insurance coverage may lead to reduced absenteeism among obese workers. For example, Cawley et al. (2007) conclude that providing health insurance may be a solution. However, an individual who is insured against health risks may have less incentive to invest in dieting and exercise (Bhattacharya & Sood, 2006)[1]. Some studies report that access to health insurance is not associated with absenteeism (Xu & Jensen, 2012) or even associated with an increase in absenteeism (Vistnes, 1997). Therefore, it is an empirical question whether the expansion of health insurance under the ACA reduced absenteeism of overweight and obese workers.

Several studies examine the effect of the ACA on labor market outcomes. They find limited or no impact on young adults (Dahlen, 2015; Heim, Lurie, & Simon, 2015; Slusky, 2017). Studies that use the Medicaid expansion and employer coverage mandate, also find no effect on labor force participation (Gooptu, Moriya, Simon, & Sommers, 2016; Kaestner, Garrett, Chen, Gangopadhyaya, & Fleming, 2017; Leung & Mas, 2016; Moriya, Selden, & Simon, 2016). Dong, Wang, Ringen, and Sokas (2017), found that newer retirees are expecting to work longer than previous generations. However, other studies find that the ACA had little to no significant impact on those retirement decisions (Ayyagari, 2017; French, von Gaudecker, & Jones, 2016; Gustman, Steinmeier, & Tabatabai, 2016; Kaestner et al., 2017; Levy, Buchmueller, & Nikpay, 2016). We are not aware of any previous paper that has attempted to explore the effects of the ACA on absenteeism among different weight groups.

[1] Simon, Soni, and Cawley (2017) do not find any evidence that increased health insurance coverage under the ACA led to increased obesity.

3 Data

We use data from the National Health Insurance Survey (NHIS) (Blewett, Drew, Griffin, King, & Williams, 2016) for the years, including 2005 to 2018. Our baseline sample is limited to individuals who are older than 26 and younger than 65. Individuals below the age of 26 were affected by the dependent care mandate of the ACA, which went into effect on September 23, 2010. Since it expanded health insurance coverage in this group after 2011, we exclude them from our analysis. Individuals 65 and above are eligible for Medicare, and therefore were not directly affected by Medicaid expansion and the individual mandate. Since the ACA did not make any significant changes in Medicare, we use this group for a falsification exercise.

In the NHIS, respondents were asked how many days of work they missed "*because of an illness or injury in the last 12 months*" (Blewett et al., 2016). We use answers to this question to construct our dependent variables. Since interviews are conducted throughout a given year, and this question refers to absence from work during the 12 months preceding an interview, the relevant periods do not match calendar years. For example, an individual interviewed in March of 2014, would report the number of days he/she missed work between March of 2013 and February of 2014. This is an important point because the ACA provisions that pertain to our study (individual mandate and Medicaid expansion) were implemented on January 1, 2014. In our baseline analysis, we treat the survey year 2014 as a pre-treatment year (since respondents reported their experiences of 2013, at least in part). The post-ACA binary variable takes the value one if the survey year is 2015, 2016, 2017, or 2018 (representing the data year 2014, 2015, 2016, or 2017 respectively) and zero otherwise. Therefore, even though we use data from survey years 2005-2018, the data pertains to years 2004-2017. In the rest of the paper, when we refer to the year variable, we refer to the year of the data, as opposed to the interview year. As a part of our robustness checks, we excluded 2014 from our analysis, but the results are not sensitive to this change (see Section 4.3 for details).

We impose some sample restrictions to reduce the effect of outliers. We exclude individuals with more than 75 days of missed work per year (99th percentile of days absent distribution). We also exclude individuals with Body Mass Index (BMI) below 10 and above 60. In addition, we restrict our attention to individuals who worked for the full year since the question about absenteeism in the NHIS asks about the number of days of missed work in the previous 12 months. Individuals who only worked part of the year may miss fewer days simply because they did not work for the whole year. Our qualitative results are not sensitive to any of these sample restrictions (see Section 4.3). We also exclude women that were pregnant at the time of interview.

We present the summary statistics in Table 1. We organized the summary statistics for the full sample[1] separated into four weight categories: underweight ($BMI < 18.5$), normal-weight ($18.5 \leq BMI < 25$), overweight ($25 \leq BMI < 30$), and obese ($BMI \geq 30$). About 59.3 percent of normal-weight respondents are female, and 48.2 percent of obese respondents are female. The average age among normal-weight respondents is 43.4, and among obese respondents, it is 45.1. The percentage of married respondents varies between 50.0 percent and 55.9 percent among the groups. The average number of children among normal-weight individuals is 0.81, compared to 0.88 among obese individuals. About 66.0 percent (60.9 percent) of normal-weight (obese) respondents are non-Hispanic, White. Normal-weight respondents are more likely to have college degrees (46.1 percent) compared to obese respondents (28.7 percent). In addition, they have better self-reported health status; 42.5 of normal-weight respondents have excellent health compared to 18.6 percent of obese respondents. The summary statistics show that overweight (obese) individuals are different from normal-weight individuals in several observable dimensions, which imposes a challenge for our analysis. We discuss this issue in more details in the Results section.

4 Results

In this section, we present the empirical results. We compare the outcomes for our three groups of interest (underweight, overweight, and obese respondents) to normal-weight respondents. Based on the descriptive statistics (Table 1), normal-weight group differs from our groups of interest in baseline covariates. Therefore, we refer to the normal-weight individuals as a comparison group (as opposed to a control group). Since the objective is to difference out the trends in absenteeism that would have affected all workers, a comparison group may be sufficient (Kossoudji & Cobb-Clark, 2002). However, we still need the parallel trend assumption to hold. We test for it and present evidence to that effect in Section 4.2.

First, we present the results using mean DD and then DD regressions (Section 4.1). In Section 4.2, we show that the parallel trend assumption holds and therefore DD estimates may represent the causal effect of the ACA on absenteeism of overweight and obese workers. In Section 4.3, we show a number of robustness checks and present a falsification exercise using individuals 65 and older. In section 4.4, we explore how the ACA affected absenteeism.

[1] The descriptive statistics separated by gender and then by weight categories are presented in appendix Tables A1 and A2.

4.1 Baseline Results

4.1.1 Mean DD Results

Table 2 shows the mean DD estimates for our two outcome variables. Panel A shows the estimates for the rate of absenteeism (i.e., probability of missing at least one day of work in the 12 months preceding an interview) and panel B shows the estimates for the number of days absent. Panel A (column 1) shows that 43.8 percent of normal-weight individuals missed at least one day of work before the ACA, and it declined to 42.8 percent in the post-ACA period; a decline of 1.0 percentage points.

On the other hand, 50.3 percent of obese individuals missed at least one day of work before the ACA, but 48.2 percent after the ACA; a decline of 2.1 percentage points. Thus, the mean DD estimate suggests that the ACA reduced the rate of absenteeism among obese people by 1.1 percentage point. However, this estimate is not statistically significant at conventional levels. Similarly, the mean DD estimate suggests that the ACA reduced the rate of absenteeism among overweight individuals by 1.2 percentage points (not significant).

Panel B in Table 2 shows that individuals in the normal-weight category missed 2.20 days of work per year before the ACA and declined by 0.09 days to 2.11 days of missed work in the post-ACA period. On the other hand, individuals in the obese category missed 3.25 days of work per year before the ACA, and it declined by 0.21 days to 3.04 days per year. Thus, the mean DD estimate suggests that the ACA reduced absenteeism among obese individuals by 0.12 days per year (not significant). Similarly, the mean DD estimate suggests that the ACA reduced the absenteeism among overweight individuals by 0.18 days per year (significant at 5 percent level of significance).

Tables A3 and A4 in the appendix shows the mean DD estimates for women and men respectively. Estimates suggest that the effect of the ACA is concentrated among women. For example, the rate of absenteeism declined by a significant 2.1 percentage points among overweight women (Panel A of Table A3) vs. only 0.8 percentage points (not significant) among men (Panel A of Table A4). A similar result holds when the number of days absent is the outcome variable.

4.1.2 Regression Results

The mean difference-in-difference estimates are consistent if the treatment and control groups are similar, except for the treatment status. However, we do not have a control group; our identification relies on a comparison group. This also implies that we need to control for observable differences across groups using a regression framework.

Controlling for observable characteristics may also reduce standard errors and may lead to more precise estimates.

In our regressions, we include controls for age (quadratic), educational categories (less than High School, High School, Some College, College Degree), marital status (married or not), number of children, whether the youngest child is less than six years old, health status (very good, good, fair, and poor; excellent health is the omitted category), race, gender, region of residence, and survey year. We analyze the effects of the ACA on two outcome variables: the probability of absenteeism and number of days absent from work.

Before we discuss regression results we have to discuss parallel trends assumption. The DD estimates may be interpreted as causal effects of the expansion of insurance coverage brought on by the ACA if the parallel trends assumption holds. This assumption requires that the trends in absenteeism among treatment groups (obese, overweight, underweight individuals) would have been the same as the trend in the comparison group (normal-weight individuals) in the absence of the ACA. This assumption is not testable. As an alternative, econometric studies check whether the pre-intervention trends were similar across groups. Since we have multiple periods of pre-intervention data, we check whether the trend in absenteeism was the same in the pre-intervention period, i.e., between the years of 2004 and 2013.

4.1.2.1 Parallel Trends

We use a regression-based approach to test for parallel trends. We estimate regressions that interact with the three treatment group (obese, overweight, and underweight) indicators with year indicator variables for all years except 2004, which is our base year. If the trend in absenteeism among obese individuals was the same as the trend in absenteeism among normal-weight individuals then all the coefficients of the interaction terms (i.e., obese interacted with the years) for the years, 2005-2013 should be jointly insignificant. To formally test the parallel trends assumption, we test the null hypothesis that the coefficients of all pre-2014 (2005-2013) interaction terms (i.e., obese * year dummy) jointly equal zero. Table 4 presents the p-values for the test of joint significance for pre-ACA (2005-2013) interaction terms for all six samples used in Table 3. Appendix Figures A1, A2, and A3 present the (year*treatment group) coefficients (when number of days absent is the outcome variable) and marginal effects (when the outcome variable is absent or not) for all respondents, women, and men, respectively. Figures show that all the coefficients in the pre-ACA period are statistically insignificant. Results of F-tests (presented in Table 3) suggest that in all six samples, the interaction terms are also jointly insignificant, suggesting that the pre-intervention trend was the same across groups and therefore the use of a DD structure is appropriate.

4.1.2.2 Regression Estimates

Table 4 presents the regression estimates. In the first three columns, the outcome variable is whether the respondent missed any work or not. Since the outcome variable is binary, we use Probit regressions. The estimates presented in columns 1-3 of Table 4 are average marginal effects. In the last three columns, the outcome variable is number of days of missed work. Since our second outcome variable (number of workdays missed in a year) is zero for about 56 percent of the respondents, we use a Tobit model to account for censoring.

We only report the coefficients of primary interest in the text. The complete table with estimates for control variables is in the Appendix Table A5. Our estimates suggest that among obese individuals, the probability of being absent declined by 1.3 percentage points in the post-ACA period (not significant). Our results also suggest that the probability of being absent declined by 1.5 percentage points (significant at 5 percent) among overweight workers. The ACA did not affect the probability of absenteeism among underweight workers.

Columns 2 and 3 of Table 4 present the results for women and men, respectively. Results suggest that the effect of the ACA is more extensive (in absolute values) among women compared to men. In the post-ACA period, the probability of being absent declined by 2.3 percentage points among obese women (significant at 5 percent) compared to 0.4 percentage points (not significant) among obese men. It is worth noting that women were about eight percentage points more likely to miss work compared to men in the pre-ACA period (46.7 percent for women vs. 38.7 percent for men). In other words, they had more room for improvement. In the post-ACA period, the probability of being absent declined by 2.6 percentage points among overweight women (significant at 5 percent) compared to 0.9 percentage points among overweight men (not significant).

Columns 4-6 present the results from Tobit regressions with the number of days of missed work as the outcome variable. The fourth column shows the results for all workers, and the next two columns split the sample by gender. Estimates in column 4 suggest that the number of days absent from work declined by 0.32 days for obese workers and 0.48 days for overweight workers. There was no statistically significant change in absenteeism for underweight individuals. Given the pre-ACA obese (overweight) workers missed 3.2 (2.3) days of work on average, these estimates suggest a 10.3 percent (20.0 percent) reduction in the number of days absent among the obese (overweight) workers. Estimates in columns 5 (women) and 6 (men) suggest that the effect of the ACA is stronger among women compared to men. This is consistent with the results in columns 2 and 3. In the post-ACA period, the number of days absent declined by 0.68 days among obese women

(significant at 5 percent) compared to 0.05 days among obese men (not significant). Again, we should note that women missed more days of work compared to men in the pre-ACA period (3.05 days for women vs. 2.20 days for men). A similar result holds for overweight individuals. In the post-ACA period, the number of missed workdays declined by 0.81 days among overweight women (significant at 1 percent) compared to 0.27 days among overweight men (not significant). Therefore, our results suggest that there was a substantial reduction in absenteeism among overweight and obese women in the post-ACA period.

4.2 Robustness Checks

4.2.1 Excluding the survey year 2014 from data.

As we discussed earlier, the data from the survey year 2014 covers part of 2013 and part of 2014. In our baseline analysis (Table 4), we assumed that the data from the survey year 2014 are part of the pre-ACA period. In this section, we exclude the data from the survey year 2014 since technically it covers part of the pre-ACA and post-ACA period. The results are presented in Panel A of Table 5. The results for both men and women samples are similar to the results presented in Table 4 in both Probit and Tobit regressions. The estimates for overweight respondents in the full sample (men and women combined) are also similar to Table 4, but the coefficients for obese are not statistically significant anymore. Therefore, overall, these results suggest that the baseline results are robust to this change.

4.2.2 Robustness to sample selection criteria.

In our baseline analysis (Table 3), we excluded individuals who worked for less than 12 months in the year before an interview. In this section, we include those individuals. The sample size increases from 156,623 to 194,651. The results for this sample are presented in Panel B of Table 5. All the results are similar to Table 4, suggesting that results are robust to this assumption as well.

4.2.3 Controlling for occupation

In Panel C, we add occupation-specific fixed effects (one digit level) as additional controls. Since different occupations require different amounts of physical intensity, identification from within occupation variation may provide better information. However, occupation selection may be endogenous. Nonetheless, we control for occupation as a robustness check. The results (presented in Panel C of Table 5) are similar to our baseline

results in Table 4. However, the coefficient for obese individuals loses statistical significance in Probit regressions.

4.3 Counterfactual using respondents 65 and older

While the ACA increased the percentage of non-elderly insured individuals (age<65), it did not change the percentage of elderly (age>=65) who have health insurance. For example, 79.1 percent percent of 27-64-year-olds had had health insurance in 2005 (DeNavas-Walt et al., 2013), which increased to 88.1 percent percent by 2016 (Barnett & Berchick, 2017) an increase of 9.0 percentage points. On the other hand, among the elderly (age>=65) the percentage of individuals with health insurance increased only slightly from 98.8 percent in 2005 (DeNavas-Walt et al., 2013) to 98.9 percent percent in 2016 (Barnett & Berchick, 2017). Therefore, if the expansion of health insurance drives the reduction in absenteeism in the post-ACA period then we would not expect to see an effect in individuals 65 and over. This group (age>=65), therefore, provides us with an opportunity to test whether the effect reported above is due to unrelated time effects. Table 6 presents the results. Estimates suggest that neither the probability of missing work nor the number of days of missed work changed after the ACA among the elderly (age >=65) obese and overweight workers. This is true in the full sample, among women, and men. This suggests that the decline in absenteeism is indeed due to health insurance coverage expansion due to the ACA.

4.4 Why did the absenteeism decline?

In this sub-section, we explore potential mechanisms through which the ACA may have affected absenteeism among workers who are overweight or obese. In the Introduction section, we noted that several researchers have argued that access to health insurance may allow them to better manage their health conditions leading to lower absenteeism. Panel B of Table 7 shows the effect of the ACA on the number of days an individual was forced to spend in bed due to an illness or injury[1]. Estimates from Tobit regressions suggest that compared to normal-weight women, the number of disability days went down by 0.80 days among over-weight women (statistically significant) and 0.29 days among obese women (not significant). In Table 4, we reported that the number of days absent went down by 0.81 days among overweight women and 0.67 days among obese women. These numbers are consistent with that result.

[1] The exact question was "*During the PAST 12 MONTHS, how many days did illness or injury keep you in bed more than half of the day(include days while an overnight patient in a hospital)?"*

5 Conclusion

In this paper, we explore whether the health insurance expansion brought on by the ACA reduced absenteeism among overweight and obese workers. To estimate the effect of the ACA, we use a difference-in-differences structure with normal-weight individuals as our comparison group. Our results suggest that the effects on women are both economically and statistically significant. The probability of being absent declined by about 2.3 (2.6) percentage points in the post-ACA period among obese (overweight) women. Furthermore, our estimates (using a Tobit model) indicate that obese (overweight) women missed 0.675 (0.810) fewer days after the ACA, compared to normal-weight women. On the other hand, the effects on men are smaller and often statistically insignificant. Our results also suggest that improved physical health outcomes led to this reduced absenteeism.

These results are consistent with the hypothesis that access to healthcare may allow overweight and obese workers to address the chronic conditions which may limit their ability to consistently be present at work. Since normal-weight and underweight workers are less likely to have health problems, access to health insurance may not be as important. Apart from being statistically significant, the reduction in absenteeism is economically significant. Women who are obese, on average, missed about 3.9 days of work. Our estimates suggest that in the post-ACA period, absenteeism in this group was reduced by about 0.68 days, which is a 17 percent reduction in absenteeism. Cawley et al. (2007) estimated that the cost associated with absenteeism among all (men and women) obese workers is about $4.3 billion per year. Therefore, a 17 percent reduction in absenteeism among obese women may save about $350 million per year.

References

Ayyagari, P. (2017). Health insurance and early retirement plans: Evidence from the affordable care act. *Working Paper*.

Barnett, J. C., & Berchick, E. R. (2017). Health insurance coverage in the United States: 2016. United States Census Bureau.

Bhattacharya, J., & Sood, N. (2006). Health insurance and the obesity externality. In *The economics of obesity* (pp. 279–318). Emerald Group Publishing Limited.

Blewett, L. A., Drew, J. A. R., Griffin, R., King, M. L., & Williams, K. C. W. (2016). Ipums health surveys: National health interview survey. Version 6.2. Minneapolis: University of Minnesota. doi:http://doi.org/10.18128/D070.V6.2

Cawley, J., Rizzo, J. A., & Haas, K. (2007). Occupation-specific absenteeism costs associated with obesity and morbid obesity. *Journal of Occupational and Environmental Medicine*, *49*(12), 1317–1324.

Dahlen, H. M. (2015). ”aging out” of dependent coverage and the effects on us labor market and health insurance choices. *American journal of public health*, *105*(S5), S640–S650.

DeNavas-Walt, C., Proctor, B. D., & Smith, J. C. (2013). Income, poverty, and health insurance coverage in the united states: 2012. current population reports p60-245. *US Census Bureau*.

Dizioli, A., & Pinheiro, R. (2016). Health insurance as a productive factor. *Labour Economics*, *40*, 1–24.

Dong, X. S., Wang, X., Ringen, K., & Sokas, R. (2017). Baby boomers in the united states: Factors associated with working longer and delaying retirement. *American Journal of Industrial Medicine*, *60*(4), 315–328.

Finkelstein, E. A., daCosta DiBonaventura, M., Burgess, S. M., Hale, B. C., et al. (2010). The costs of obesity in the workplace. *Journal of Occupational and Environmental Medicine*, *52*(10), 971–976.

French, E., von Gaudecker, H.-M., & Jones, J. B. (2016). The effect of the affordable care act on the labor supply, savings, and social security of older Americans. *Social Science Research Network*.

Gilleskie, D. B. (1998). A dynamic stochastic model of medical care use and work absence. *Econometrica*, 1–45.

Gooptu, A., Moriya, A. S., Simon, K. I., & Sommers, B. D. (2016). Medicaid expansion did not result in significant employment changes or job reductions in 2014. *Health affairs*, *35*(1), 111– 118.

Gustman, A. L., Steinmeier, T. L., & Tabatabai, N. (2016). *The affordable care act as retiree health insurance: Implications for retirement and social security claiming*. National Bureau of Economic Research.

Hales, C. M., Carroll, M. D., Fryar, C. D., & Ogden, C. L. (2017). *Prevalence of obesity among adults and youth: United states, 2015-2016* (No. 288). Centers for Disease Control and Prevention: National Center for Health Statistics.

Heim, B., Lurie, I., & Simon, K. (2015). The impact of the affordable care act young adult provision on labor market outcomes: Evidence from tax data. *Tax Policy and Economy*, *29*(1), 133–157.

Kaestner, R., Garrett, B., Chen, J., Gangopadhyaya, A., & Fleming, C. (2017). Effects of aca medicaid expansions on health insurance coverage and labor supply. *Journal of Policy Analysis and Management*, *36*(3), 608–642.

Kossoudji, S. A., & Cobb-Clark, D. A. (2002). Coming out of the shadows: Learning about legal status and wages from the legalized population. *Journal of Labor Economics*, *20*(3), 598–628.

Leung, P., & Mas, A. (2016). *Employment effects of the aca medicaid expansions*. National Bureau of Economic Research.

Levy, H., Buchmueller, T. C., & Nikpay, S. (2016). Health reform and retirement. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, gbw115.

Lofland, J. H., & Frick, K. D. (2006). Effect of health insurance on workplace absenteeism in the us workforce. *Journal of occupational and environmental medicine*, *48*(1), 13–21.

Moriya, A. S., Selden, T. M., & Simon, K. I. (2016). Little change seen in part-time employment as a result of the affordable care act. *Health affairs*, *35*(1), 119–123.

Neovius, K., Johansson, K., Kark, M., & Neovius, M. (2009). Obesity status and sick leave: A systematic review. *Obesity reviews*, *10*(1), 17–27.

Schmier, J. K., Jones, M. L., & Halpern, M. T. (2006). Cost of obesity in the workplace. *Scandinavian journal of work, environment & health*, 5–11.

Simon, K., Soni, A., & Cawley, J. (2017). The impact of health insurance on preventive care and health behaviors: Evidence from the first two years of the aca medicaid expansions. *Journal of Policy Analysis and Management*, *36*(2), 390–417.

Slusky, D. J. (2017). Significant placebo results in difference-in-differences analysis: The case of the aca's parental mandate. *Eastern Economic Journal*, *43*(4), 580–603.

Trogdon, J., Finkelstein, E., Hylands, T., Dellea, P., & Kamal-Bahl, S. (2008). Indirect costs of obesity: A review of the current literature. *Obesity Reviews*, *9*(5), 489–500.

Vistnes, J. P. (1997). Gender differences in days lost from work due to illness. *ILR Review*, *50*(2), 304–323.

Xu, X., & Jensen, G. A. (2012). Does health insurance reduce illness-related worker absenteeism? *Applied Economics*, *44*(35), 4591–4603.
World Health Organization (WHO 2018). Retrieved from http://www.who.int/topics/obesity/en/

Table 1: Summary Statistics

	Normal Weight	Underweight	Overweight	Obese
Work loss days, past 12 months	2.184	2.482	2.325	3.201
	(5.746)	(6.788)	(6.249)	(7.552)
Lost any work days, past 12 months	0.436	0.448	0.433	0.498
	(0.496)	(0.497)	(0.495)	(0.500)
Body mass index	22.548	17.608	27.287	35.173
	(1.633)	(0.864)	(1.444)	(4.872)
Female	0.593	0.816	0.374	0.482
	(0.491)	(0.388)	(0.484)	(0.500)
Age	43.357	42.115	44.816	45.110
	(10.606)	(10.860)	(10.377)	(10.209)
Married	0.519	0.501	0.559	0.520
	(0.500)	(0.500)	(0.496)	(0.500)
Number of own children	0.806	0.765	0.874	0.884
	(1.091)	(1.069)	(1.138)	(1.158)
Youngest child less than 6	0.151	0.153	0.155	0.137
	(0.358)	(0.360)	(0.362)	(0.343)
Race				
White, Non-Hispanic	0.660	0.659	0.626	0.609
	(0.474)	(0.474)	(0.484)	(0.488)
Black, Non-Hispanic	0.091	0.071	0.125	0.180
	(0.287)	(0.257)	(0.331)	(0.384)
Hispanic	0.132	0.078	0.181	0.170
	(0.339)	(0.268)	(0.385)	(0.376)
Other	0.117	0.192	0.068	0.041
	(0.322)	(0.394)	(0.252)	(0.199)
Education				
Less than HS	0.073	0.066	0.102	0.101
	(0.260)	(0.249)	(0.303)	(0.301)
High School	0.198	0.224	0.231	0.263
	(0.399)	(0.417)	(0.422)	(0.440)
Some College	0.268	0.250	0.297	0.349
	(0.443)	(0.433)	(0.457)	(0.477)
College Degree	0.461	0.461	0.369	0.287
	(0.498)	(0.499)	(0.483)	(0.453)
Health Status				
Excellent	0.425	0.385	0.332	0.186
	(0.494)	(0.487)	(0.471)	(0.389)
Very Good	0.357	0.334	0.388	0.361
	(0.479)	(0.472)	(0.487)	(0.480)
Good	0.181	0.212	0.233	0.353
	(0.385)	(0.409)	(0.423)	(0.478)
Fair	0.034	0.060	0.043	0.091
	(0.181)	(0.237)	(0.204)	(0.288)

Poor	0.003	0.009	0.004	0.009
	(0.059)	(0.094)	(0.062)	(0.096)
N	49,950	1,570	58,331	46,772

Means presented, standard deviations in parentheses.

Table 2: Mean Difference-in-Differences

	Normal Weight	Underweight	Overweight	Obese
		Panel A: Lost any work days		
Before	0.438***	0.456***	0.437***	0.503***
	[0.496]	[0.498]	[0.496]	[0.500]
After	0.428***	0.416***	0.415***	0.482***
	[0.495]	[0.494]	[0.493]	[0.500]
Difference	-0.010*	-0.039	-0.022***	-0.021***
	(0.006)	(0.032)	(0.005)	(0.006)
Diff-in-Diff	.	-0.029	-0.012	-0.011
	.	(0.032)	(0.008)	(0.008)
		Panel B: Work days lost		
Before	2.201***	2.489***	2.379***	3.247***
	[5.774]	[6.787]	[6.350]	[7.579]
After	2.110***	2.451***	2.106***	3.035***
	[5.629]	[6.805]	[5.820]	[7.453]
Difference	-0.091	-0.039	-0.273***	-0.212**
	(0.064)	(0.440)	(0.062)	(0.084)
Diff-in-Diff	.	0.052	-0.182**	-0.121
	.	(0.445)	(0.089)	(0.106)
N	49,950	1,570	58,331	46,772

* $p < .10$, ** $p < .05$, *** $p < .01$; Standard Errors in parentheses, Standard Deviations in square brackets.

Table 3: Parallel Trends Test

	Probit			Tobit		
	Full Sample	Women	Men	Full Sample	Women	Men
Underweight	0.582	0.219	0.224	0.417	0.366	0.740
Overweight	0.379	0.587	0.256	0.129	0.367	0.242
Obese	0.473	0.220	0.863	0.409	0.658	0.588
N	156,623	75,273	81,350	156,623	75,273	81,350

Controls included in the model are: Sex, marital status, age, age squared, race dummies, educational attainment dummies, number of children, and an indicator if the youngest child is less than 6 years old. P-values for test of joint significance of coefficients for years 2005 to 2013 are presented.

Table 4: Regressions results showing the effect of the ACA

	Probit			Tobit		
	Full Sample	Women	Men	Full Sample	Women	Men
Underweight X Post-ACA	-0.022	-0.012	-0.055	-0.087	-0.163	0.454
	(0.032)	(0.036)	(0.075)	(0.862)	(0.931)	(2.277)
Overweight X Post-ACA	-0.015**	-0.026**	-0.009	-0.475**	-0.810***	-0.266
	(0.008)	(0.011)	(0.011)	(0.188)	(0.269)	(0.276)
Obese X Post-ACA	-0.013	-0.023**	-0.004	-0.319	-0.675**	0.048
	(0.008)	(0.011)	(0.011)	(0.200)	(0.269)	(0.301)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	156,623	75,273	81,350	156,623	75,273	81,350

Standard errors in parentheses; Columns (1) to (3) display average marginal effects for discrete change of dummy variable from 0 to 1; all models include constants. Controls included in the model are: Sex, marital status, age, age^2, race, educational attainment, number of children, and an indicator if the youngest child is less than 6 years old. * $p < .10$, ** $p < .05$, *** $p < .01$

Table 5: Robustness checks

	Probit			Tobit		
	Full Sample	Women	Men	Full Sample	Women	Men
Panel A: Excluding 2014						
Underweight X Post-ACA	-0.021	-0.011	-0.053	-0.175	-0.375	0.994
	(0.032)	(0.036)	(0.075)	(0.862)	(0.921)	(2.341)
Overweight X Post-ACA	-0.016*	-0.027*	-0.011	-0.511**	-0.861**	-0.317
	(0.007)	(0.011)	(0.011)	(0.189)	(0.270)	(0.278)
Obese X Post-ACA	-0.014	-0.022*	-0.007	-0.393	-0.736**	-0.056
	(0.008)	(0.011)	(0.011)	(0.201)	(0.271)	(0.303)
N	146,406	70,367	76,039	146,406	70,367	76,039
Panel B: Including workers with less than 12 months of work						
Underweight X Post-ACA	-0.028	-0.020	-0.060	-0.861	-0.960	-0.267
	(0.028)	(0.032)	(0.067)	(0.792)	(0.844)	(2.223)
Overweight X Post-ACA	-0.015*	-0.026**	-0.007	-0.535**	-0.870***	-0.281
	(0.007)	(0.010)	(0.010)	(0.186)	(0.261)	(0.277)
Obese X Post-ACA	-0.014*	-0.023*	-0.004	-0.432*	-0.712**	-0.099
	(0.007)	(0.009)	(0.010)	(0.195)	(0.261)	(0.299)
N	194,651	96,612	98,039	194,651	96,612	98,039
Panel C: Controlling for Occupation						
Underweight X Post-ACA	-0.017	-0.008	-0.052	-0.138	-0.387	1.067
	(0.032)	(0.036)	(0.075)	(0.870)	(0.930)	(2.356)
Overweight X Post-ACA	-0.015*	-0.024*	-0.010	-0.491*	-0.799**	-0.301
	(0.008)	(0.011)	(0.011)	(0.191)	(0.272)	(0.279)
Obese X Post-ACA	-0.012	-0.020	-0.005	-0.349	-0.667*	-0.035
	(0.008)	(0.011)	(0.011)	(0.202)	(0.272)	(0.304)
N	143,626	69,176	74,450	143,626	69,176	74,450

* $p < .10$, ** $p < .05$, *** $p < .01$; Columns (1) to (3) display average marginal effects for discrete change of dummy variable from 0 to 1; all models include controls and constants. Controls included in the model are: Sex, marital status, age, age squared , race dummies, educational attainment dummies, number of children, and an indicator if the youngest child is less than 6 years old.

Table 6: Results for individuals 65 and above

	Probit			Tobit		
	Full Sample	Women	Men	Full Sample	Women	Men
Underweight X Post-ACA	-0.047	-0.044	-0.072	-2.708	-2.544	-3.377
	(0.091)	(0.103)	(0.237)	(3.500)	(3.621)	(9.925)
Overweight X Post-ACA	-0.012	-0.020	-0.013	-0.889	-1.090	-1.110
	(0.022)	(0.032)	(0.030)	(0.950)	(1.232)	(1.497)
Obese X Post-ACA	-0.001	0.015	-0.022	-0.048	0.104	-0.610
	(0.024)	(0.034)	(0.034)	(1.064)	(1.324)	(1.716)
N	11,959	5,786	6,171	11,959	5,788	6,171

* $p < .10$, ** $p < .05$, *** $p < .01$; Columns (1) to (3) display average marginal effects for discrete change of dummy variable from 0 to 1; all models include controls and constants. Controls included in the model are: Sex, marital status, age, age squared , race dummies, educational attainment dummies, number of children, and an indicator if the youngest child is less than 6 years old.

Table 7: Tobit Regressions of Bed disability days, past 12 months

Overweight X Post-ACA	-0.511**	-0.804**	-0.165
	(0.205)	(0.325)	(0.248)
Obese X Post-ACA	-0.264	-0.293	-0.127
	(0.224)	(0.339)	(0.273)
N	156,623	75,273	81,350

* $p < .10$, ** $p < .05$, *** $p < .01$; Columns (1) to (3) display average marginal effects for discrete change of dummy variable from 0 to 1; all models include controls and constants. Controls included in the model are: Sex, marital status, age, age squared , race dummies, educational attainment dummies, number of children, and an indicator if the youngest child is less than 6 years old.

Appendix

Table A1: Summary Statistics - Women Only

	Normal Weight	Underweight	Overweight	Obese
Work loss days, past 12 months	2.368	2.541	2.870	3.858
	(5.968)	(6.915)	(6.957)	(8.294)
Lost any work days, past 12 months	0.469	0.458	0.497	0.562
	(0.499)	(0.498)	(0.500)	(0.496)
Body mass index	22.267	17.637	27.308	35.928
	(1.696)	(0.780)	(1.428)	(5.333)
Female	1.000	1.000	1.000	1.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age	43.782	42.129	45.411	45.265
	(10.503)	(10.798)	(10.380)	(10.288)
Married	0.515	0.504	0.495	0.425
	(0.500)	(0.500)	(0.500)	(0.494)
Number of own children	0.855	0.799	0.916	0.900
	(1.083)	(1.078)	(1.121)	(1.133)
Youngest child less than 6	0.142	0.148	0.130	0.120
	(0.349)	(0.356)	(0.336)	(0.325)
Race				
White, Non-Hispanic	0.675	0.680	0.594	0.565
	(0.469)	(0.467)	(0.491)	(0.496)
Black, Non-Hispanic	0.089	0.060	0.168	0.232
	(0.285)	(0.238)	(0.374)	(0.422)
Hispanic	0.131	0.070	0.178	0.163
	(0.338)	(0.256)	(0.382)	(0.369)
Other	0.105	0.190	0.061	0.040
	(0.307)	(0.392)	(0.239)	(0.196)
Education				
Less than HS	0.058	0.047	0.095	0.095
	(0.233)	(0.211)	(0.293)	(0.293)
High School	0.183	0.207	0.226	0.243
	(0.387)	(0.405)	(0.418)	(0.429)
Some College	0.284	0.259	0.331	0.373
	(0.451)	(0.438)	(0.470)	(0.484)
College Degree	0.475	0.487	0.349	0.289
	(0.499)	(0.500)	(0.477)	(0.453)
Health Status				
Excellent	0.428	0.414	0.291	0.163
	(0.495)	(0.493)	(0.454)	(0.370)
Very Good	0.363	0.337	0.391	0.352
	(0.481)	(0.473)	(0.488)	(0.478)
Good	0.176	0.191	0.260	0.373
	(0.381)	(0.393)	(0.439)	(0.483)
Fair	0.030	0.050	0.053	0.101

	(0.171)	(0.218)	(0.223)	(0.301)
Poor	0.004	0.008	0.004	0.011
	(0.059)	(0.088)	(0.067)	(0.103)
N	29,641	1,281	21,801	22,550

Means presented, standard deviations in parentheses.

Table A2: Summary Statistics - Men Only

	Normal Weight	Underweight	Overweight	Obese
Work loss days, past 12 months	1.915	2.221	1.999	2.590
	(5.395)	(6.199)	(5.761)	(6.732)
Lost any work days, past 12 months	0.389	0.405	0.394	0.439
	(0.488)	(0.492)	(0.489)	(0.496)
Body mass index	22.959	17.480	27.275	34.470
	(1.440)	(1.160)	(1.454)	(4.283)
Female	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age	42.736	42.052	44.461	44.966
	(10.724)	(11.146)	(10.358)	(10.133)
Married	0.526	0.484	0.598	0.609
	(0.499)	(0.501)	(0.490)	(0.488)
Number of own children	0.734	0.612	0.848	0.870
	(1.100)	(1.018)	(1.148)	(1.181)
Youngest child less than 6	0.164	0.173	0.170	0.152
	(0.371)	(0.379)	(0.376)	(0.359)
Race				
White, Non-Hispanic	0.638	0.567	0.645	0.650
	(0.481)	(0.496)	(0.478)	(0.477)
Black, Non-Hispanic	0.093	0.121	0.100	0.131
	(0.291)	(0.327)	(0.300)	(0.337)
Hispanic	0.134	0.111	0.182	0.177
	(0.341)	(0.314)	(0.386)	(0.381)
Other	0.135	0.201	0.073	0.043
	(0.341)	(0.401)	(0.259)	(0.202)
Education				
Less than HS	0.095	0.152	0.107	0.106
	(0.294)	(0.360)	(0.309)	(0.308)
High School	0.220	0.298	0.234	0.282
	(0.414)	(0.458)	(0.424)	(0.450)
Some College	0.245	0.208	0.278	0.326
	(0.430)	(0.406)	(0.448)	(0.469)
College Degree	0.440	0.343	0.381	0.286
	(0.496)	(0.475)	(0.486)	(0.452)
Health Status				
Excellent	0.421	0.260	0.356	0.207
	(0.494)	(0.439)	(0.479)	(0.405)
Very Good	0.347	0.318	0.386	0.369
	(0.476)	(0.467)	(0.487)	(0.482)
Good	0.189	0.304	0.217	0.334
	(0.391)	(0.461)	(0.412)	(0.472)
Fair	0.040	0.104	0.038	0.082
	(0.195)	(0.306)	(0.191)	(0.275)

Poor	0.003	0.014	0.003	0.008
	(0.058)	(0.117)	(0.059)	(0.089)
N	20,309	289	36,530	24,222

Means presented, standard deviations in parentheses.

Table A3: Mean Difference-in-Differences, Women Only

	Normal Weight	Underweight	Overweight	Obese
		Panel A: Lost any work days		
Before	0.471***	0.465***	0.504***	0.568***
	[0.499]	[0.499]	[0.500]	[0.495]
After	0.459***	0.429***	0.471***	0.540***
	[0.498]	[0.496]	[0.499]	[0.498]
Difference	-0.012	-0.036	-0.032***	-0.028***
	(0.007)	(0.035)	(0.008)	(0.008)
Diff-in-Diff	.	-0.024	-0.021*	-0.016
	.	(0.036)	(0.011)	(0.011)
		Panel B: Work days lost		
Before	2.388***	2.580***	2.970***	3.956***
	[5.986]	[7.039]	[7.147]	[8.417]
After	2.285***	2.371***	2.466***	3.491***
	[5.894]	[6.359]	[6.112]	[7.807]
Difference	-0.102	-0.209	-0.504***	-0.465***
	(0.087)	(0.464)	(0.108)	(0.129)
Diff-in-Diff	.	-0.107	-0.402***	-0.363**
	.	(0.472)	(0.139)	(0.156)
N	29,641	1,281	21,801	22,550

* $p < .10$, ** $p < .05$, *** $p < .01$; Standard Errors in parentheses, Standard Deviations in square brackets.

Table A4: Mean Difference-in-Differences, Men Only

	Normal Weight	Underweight	Overweight	Obese
		Panel A: Lost any work days		
Before	0.391***	0.415***	0.397***	0.441***
	[0.488]	[0.494]	[0.489]	[0.497]
After	0.383***	0.358***	0.381***	0.431***
	[0.486]	[0.484]	[0.486]	[0.495]
Difference	-0.008	-0.057	-0.016**	-0.011
	(0.009)	(0.073)	(0.006)	(0.008)
Diff-in-Diff	.	-0.049	-0.008	-0.003
	.	(0.074)	(0.011)	(0.012)
		Panel B: Work days lost		
Before	1.929***	2.089***	2.026***	2.580***
	[5.438]	[5.534]	[5.794]	[6.627]
After	1.855***	2.811**	1.892***	2.626***
	[5.208]	[8.602]	[5.628]	[7.095]
Difference	-0.074	0.722	-0.134*	0.046
	(0.094)	(1.224)	(0.074)	(0.109)
Diff-in-Diff	.	0.796	-0.060	0.120
	.	(1.228)	(0.120)	(0.143)
N	20,309	289	36,530	24,222

* $p < .10$, ** $p < .05$, *** $p < .01$; Standard Errors in parentheses, Standard Deviations in square brackets.

Table A5: Regressions with 4 weight categories

	Probit			Tobit		
	Full Sample	Women	Men	Full Sample	Women	Men
Underweight X Post-ACA	-0.022	-0.012	-0.055	-0.087	-0.163	0.454
	(0.032)	(0.036)	(0.075)	(0.862)	(0.931)	(2.277)
Overweight X Post-ACA	-0.015**	-0.026**	-0.009	-0.475**	-0.810***	-0.266
	(0.008)	(0.011)	(0.011)	(0.188)	(0.269)	(0.276)
Obese X Post-ACA	-0.013	-0.023**	-0.004	-0.319	-0.675**	0.048
	(0.008)	(0.011)	(0.011)	(0.200)	(0.269)	(0.301)
Post-ACA	0.020**	0.011	0.029**	0.174	0.089	0.276
	(0.008)	(0.011)	(0.012)	(0.201)	(0.270)	(0.304)
Underweight	-0.018	-0.020	0.013	-0.302	-0.187	-0.125
	(0.014)	(0.015)	(0.032)	(0.361)	(0.406)	(0.787)
Overweight	0.028***	0.040***	0.013***	0.673***	0.967***	0.275**
	(0.003)	(0.005)	(0.005)	(0.086)	(0.124)	(0.123)
Obese	0.063***	0.083***	0.040***	1.599***	2.066***	0.960***
	(0.004)	(0.005)	(0.005)	(0.095)	(0.130)	(0.139)
Female	0.096***			2.219***		
	(0.003)			(0.067)		
Married	-0.020***	-0.031***	-0.012***	-0.677***	-0.969***	-0.388***
	(0.003)	(0.004)	(0.004)	(0.070)	(0.096)	(0.106)
Age	-0.001	0.002	-0.003**	0.006	0.100**	-0.090**
	(0.001)	(0.002)	(0.002)	(0.030)	(0.042)	(0.042)
Age squared	-0.000***	-0.000***	-0.000	-0.001**	-0.002***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Black, Non-hispanic	-0.076***	-0.080***	-0.074***	-1.272***	-1.306***	-1.305***
	(0.004)	(0.005)	(0.006)	(0.108)	(0.146)	(0.163)
Hispanic	-0.111***	-0.112***	-0.109***	-2.450***	-2.290***	-2.612***
	(0.004)	(0.006)	(0.005)	(0.103)	(0.148)	(0.144)

Other	-0.092***	-0.105***	-0.083***	-1.916***	-2.095***	-1.802***
	(0.005)	(0.007)	(0.006)	(0.122)	(0.177)	(0.169)
Less than HS	-0.055***	-0.061***	-0.052***	-1.194***	-1.250***	-1.168***
	(0.005)	(0.008)	(0.006)	(0.147)	(0.221)	(0.197)
Some College	0.057***	0.061***	0.053***	1.233***	1.374***	1.095***
	(0.003)	(0.005)	(0.005)	(0.093)	(0.134)	(0.131)
College Degree	0.084***	0.087***	0.082***	1.196***	1.325***	1.050***
	(0.003)	(0.005)	(0.005)	(0.088)	(0.128)	(0.120)
Very Good	0.082***	0.086***	0.078***	2.028***	2.100***	1.948***
	(0.003)	(0.004)	(0.004)	(0.074)	(0.106)	(0.104)
Good	0.124***	0.125***	0.124***	3.666***	3.774***	3.539***
	(0.003)	(0.005)	(0.005)	(0.092)	(0.131)	(0.130)
Fair	0.210***	0.206***	0.213***	7.288***	7.453***	7.057***
	(0.006)	(0.008)	(0.008)	(0.183)	(0.256)	(0.261)
Poor	0.318***	0.306***	0.329***	13.314***	13.259***	13.297***
	(0.015)	(0.020)	(0.023)	(0.619)	(0.859)	(0.888)
Number of own children	-0.005***	-0.012***	0.001	-0.161***	-0.313***	-0.044
	(0.001)	(0.002)	(0.002)	(0.035)	(0.049)	(0.050)
Youngest child less than 6	0.004	-0.022***	0.019***	0.213**	-0.165	0.445***
	(0.004)	(0.006)	(0.006)	(0.103)	(0.151)	(0.142)
Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	156,623	75,273	81,350	156,623	75,273	81,350

Marginal effects; Standard errors in parentheses. Columns (1) to (3) display average marginal effects for discrete change of dummy variable from 0 to 1; all models include constants. * $p < .10$, ** $p < .05$, *** $p < .01$

Figure A1: Testing for parallel trends: all respondents

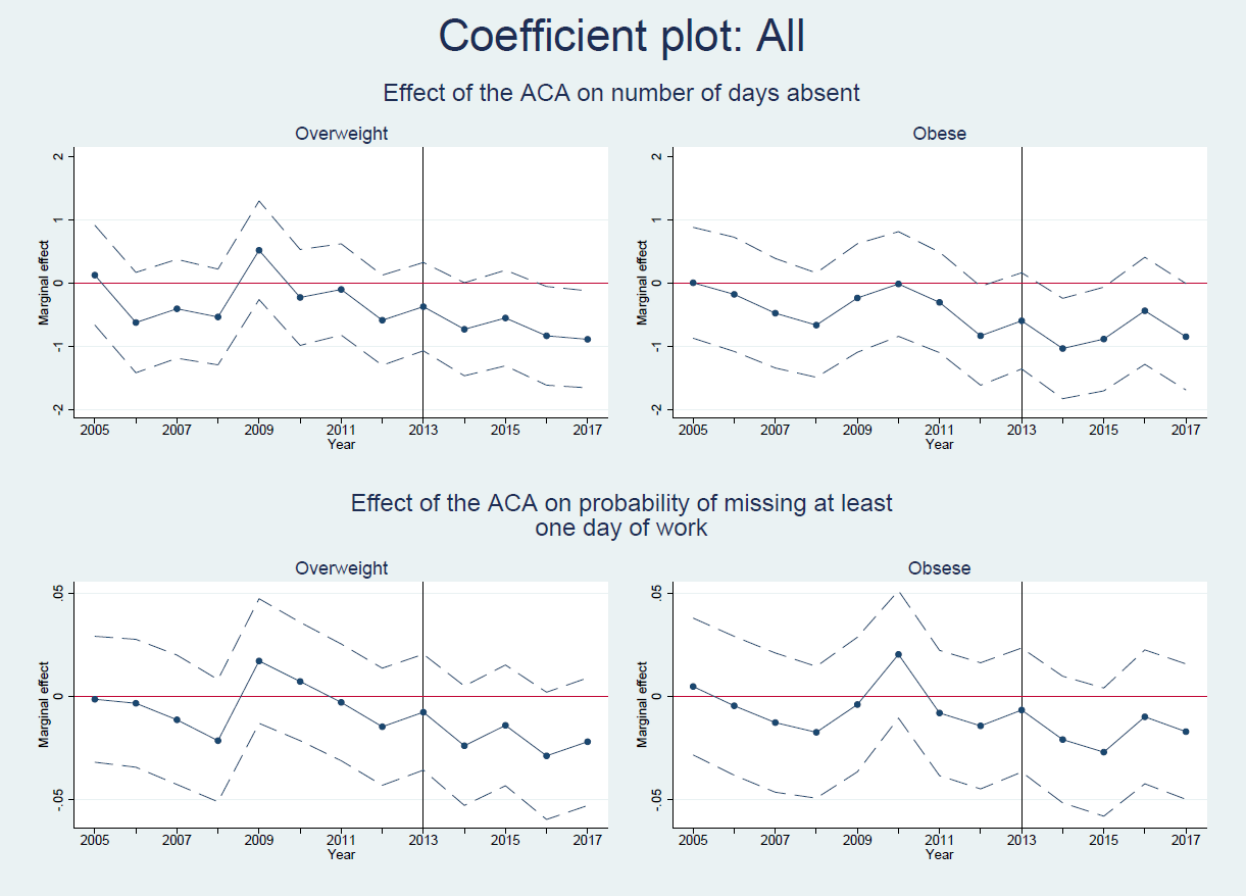

Figure A2: Testing for parallel trends: women

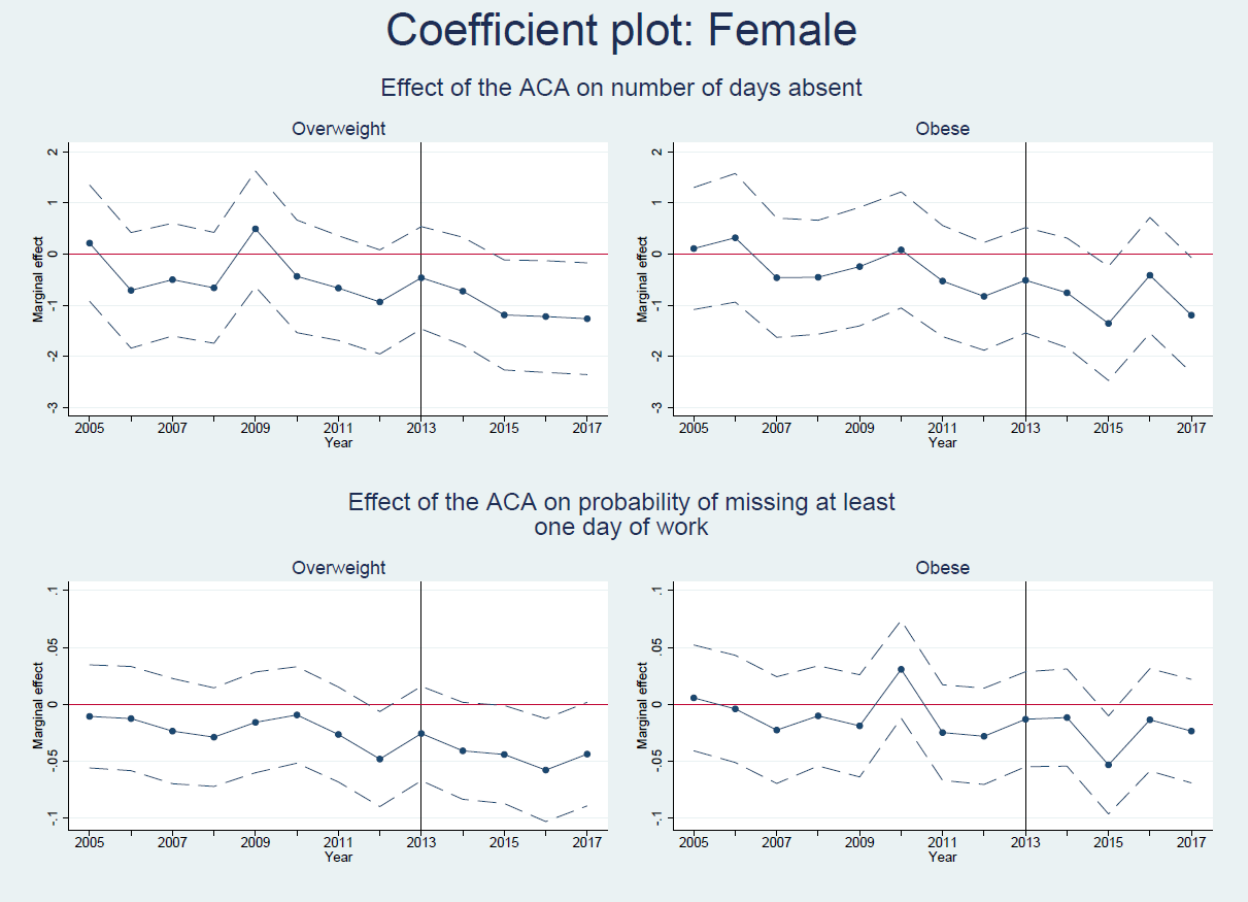

Figure A3: Testing for parallel trends: men