Did the essential benefits of the Affordable Care Act improve mental health in the United States?

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Abstract

This study examines the effects of the essential benefits mandate of the Affordable Care Act enacted in 2014 and whether the mandate, specifically the behavioral health services benefit, improved reported mental health in the United States. Current literature suggests that the ACA has made strides in both areas of behavioral health, mental health and substance abuse and recovery, in comparison to laws enacted prior, called Parity Laws. This study uses a differences in differences model to examine the effect of the mandate on the percentage of days reported as being mentally unwell in one month.

Word Count: 2000

Citations are in MLA format

Introduction

Mental health has historically been an underfunded and overlooked aspect of healthcare in the world and the United States, and only in recent years has care for mental illness and addiction begun to be prioritized. In 2014, the essential benefits mandate of the Affordable Care Act was enacted. This mandate included a provision that covers treatment for mental illness, substance abuse, and addiction recovery. Previous legislation, called Parity Laws, had been enacted in 1996 and 2008 to help curb these tendencies and they required insurance providers to cover mental health and addiction treatment at the same level as physical health treatment. However, this applied to large-group plans, and only if they provided mental and behavioral services at all. These restrictions were not for small scale or individual plans. A Kaiser Family Foundation analysis showed that in 2013, nearly half of all non-group insurance plans still did not cover inpatient or outpatient substance abuse disorder services. The same analysis also showed that 38% of non-group plans did not cover either inpatient or outpatient mental/behavioral health services.

Insurance companies have often avoided these coverages until now due to the long-term cost commitment these treatments required. This is shown by Barry and Ridgely (2008), who studied how health plans reacted to the original Parity Laws that came before the ACA. Their report showed that after parity legislation, federal health plans were more likely to use managed care firms in order to significantly augment managed care, effectively "carving-out" the service. The essential benefits of the ACA now require that behavioral health services be provided to all beneficiaries, regardless of the size of the plan.

Research into the effect that this mandate has had on the mental and behavioral health in the United States is limited, however. Much of the literature on the ACA emphasizes the effects

of the Medicaid expansion and how it has increased insurance coverage (Sommers, Kenney, & Epstein, 2014; Frean, Gruber, & Sommers, 2017), the effects on the young adult population (Antwi, Moriya, & Simon, 2014; Barbaresco, Courtemanche, & Qi, 2014; Meara et. al, 2014), and the effects on the labor market (Peng, Guo, & Meyerhoefer, 2019).

These investigations are important and form the groundwork for this analysis. For instance, Card et al. (2008) showed that the Medicare eligibility threshold for people that turn 65 can be directly linked with the increased use of medical services. This can be bridged to support the theory that the Medicaid expansion as well as the ACA's policy for dependents being eligible for their parents insurance through the age of 26 should lead to increased usage for the young adult age group and low income groups.

Specific research into the behavioral health fields (Wen et. al. 2013; Meinhofer & Witman, 2018; Ali, Teich, & Mutter, 2015) have tended to focus on the substance abuse and addiction aspects of the mandates. Wen et. al. 2013 show that there were positive impacts on substance abuse measures in states with comprehensive Parity Laws. Ali, Teich, and Mutter (2015)'s analysis on individuals with substance use disorders highlighted the disconnect between these individuals and their own perceived need for treatment. Individuals with substance abuse problems tend to seek mental health treatment if they do seek care and suggests that the problems with seeking treatment are not correlated with insurance coverage but rather the individual's perception of needing treatment. Meinhofer and Witman's (2018) analysis showed that admissions to treatment facilities for opioid related causes increased 18% in expansion states, illustrating that policy and insurance coverage can positively impact treatment usage among those with substance use disorders.

Scholarly work on the effects of policy on mental illness specifically and not substance abuse is promising, but sparse. Matthew Lang (2013) showed in 2011 that when states passed parity legislation, suicide rates decreased on average by 5%. Garfield et al. (2011) illustrates the importance of policy reform with respect to those with severe mental disorders. Their analysis showed that adults with severe mental disorders were significantly less likely to be insured, and only around 20% of the uninsured adults with severe mental disorders utilized any mental health services from 2004-2006.

Data and Methods

In this study, I use an appended collection of the Behavioral Risk Factor Surveillance System (BRFSS) data collected from 2011 through 2019 to provide empirical evidence for the impact that the ACA had on the reported mental health in the United States. The BRFSS is a survey that collects a variety of data on participants, including the number of days participants felt "mentally unwell" during the past month as well as whether they have health insurance coverage or not. I use these data points as the foundation for exploring how reported mental health has changed over time, and whether these changes can be attributed to the essential benefits mandate of 2014.

In order to observe these changes, I use a differences in differences model to compare the effect of the mandate between those with access to healthcare and those who are uninsured from 2011, before the enactment of the essential mandates, through 2018, well after the enactment. In order to measure the effect, I will use the percentage of days that respondents reported feeling mentally unwell in the past month as the outcome, represented as Y_{it}.

Empirically, I describe the relationship between having healthcare coverage and the percentage of days feeling mentally unwell in one month as:

$$Y_{it} = \alpha + \beta TREATxPOST_{it} + \gamma YEAR_t + \sigma INSURANCE_i + \phi \vec{X}_n + \epsilon_{it}$$

The variable of interest is β, which represents the change in the percentage of days respondents reported feeling mentally unwell in the past month that can be attributed to the proportion of the sample who have access to healthcare coverage after the year 2014, represented as $TREATxPOST_{it}$. In order to account for variation that can be attributed to fixed differences between different points in time, I will use a pooled cross section approach.

The coefficient γ indicates a vector of coefficients on the different years in the vector $YEAR_t$, which controls for variation in the percentage of days reported mentally unwell across the different years in comparison to the omitted year, 2011. The coefficient σ indicates the effect of dummy variable $INSURANCE_i$, which controls for variation in the percentage of days reported mentally unwell across the two samples in comparison, those with access to health insurance to those without.

The vector $\vec{X}_n$ represents a vector of individual controls for the analysis. Specifically, I control for variations in demographics, such as age group, race, gender, education level, income, employment, veteran and marital status, measures of physical health, and dummy variables on various morbidities within the sample.

If coefficients β & σ are negative and statistically significant, then having access to insurance would be associated with reporting a lower percentage of mentally unwell days during a given month, or in other words, better reported mental health. If the trends established before 2014 change afterwards, then a link could be made between the ACA's essential mandate going into effect and the average mental health of Americans.

In order to establish comparability, the sample of those who are uninsured should have similar descriptive statistics before and after the implementation of the essential mandate. I compare demographic indicators in each year of the BRFSS in Table 2, examining changes in the insured and uninsured respectively from 2013 to 2014. Overall, it does not seem that the legislative change from 2013 to 2014 caused drastic changes in the descriptive statistics of the two groups.

The final sample in my analysis consists of 2,664,569 observations from 2011 through 2018, with some spillover into 2019. Of the 3,676,510 observations provided by the BRFSS, roughly one million are lost due to missing survey responses in one form or another. About 270,000 are due to individuals missing answers to demographic questions such as age, gender, marital, veteran, and employment status, and education level. There is a further drop of roughly 700,000 due to missing physical health information such as the percentage of the month participants felt physically unwell, exercise routines, general health, time since a participants last check up, or whether the cost of treatment prevented the participant from seeking help. Finally, approximately 100,000 observations are lost due to missing information regarding morbidities and pre-existing conditions. However, no individual variable accounts for a large observation loss on its own.

Results

Table 3 shows changes in the percentage of the month that participants reported being mentally unwell. In columns 1, 2 and 3, results are shown using initial regressions with only the treatment variables and year fixed effects. Columns 2 and 3 highlight the pre-trends assumption

necessary for a differences in differences analysis, with coefficients on each year prior to 2014 being statistically insignificant.

This model shows that there was roughly a 1.4% increase in the percentage of the month that participants reported feeling mentally unwell, implying that the ACA's essential mandate may have had a negative effect on mental health in America. This could be explained by the ACA's expanding coverage and stricter requirements leading to higher usage rates of behavioral health services.

However, columns 4, 5, and 6 show that these initial results may experience omitted variable bias. Column 4 presents results that include demographic controls for physical health, age, gender, race, income, employment, marital, and veteran status, as well as whether the cost of medical treatment prevented the participant from seeking services. Once these controls are included, the ACA's effect on self-reported mental health is no longer statistically different from zero, and the major influences on mental health shift to the various demographic indicators.

Column 5 introduces a control for whether the participant has been diagnosed with depressive disorder, which accounts for a significant and large effect on self-reported mental health. Column 6, the preferred model, then introduces controls for various morbidities such as cancer, diabetes, etc. What these more controlled models show is that, with respect to those without access to health insurance, those with insurance did not see any significant change in their self-reported mental health after 2014. Having greater physical health, employment status, and income are all associated with greater mental health. Similarly, financial stress and having a lower self-reported general health coincide with greater levels of feeling mentally unwell.

A major coefficient worth discussing is how the cost of treatment preventing individuals from seeking out a medical professional impacts mental health. Not being able to see a doctor

due to the cost is associated with a 6.3 percent increase in the percent of the month reported as feeling mentally unwell. This result is important because people who cannot access medical care due to cost are one of the primary portions of the US population that the Affordable Care Act is aimed toward.

Another primary segment of the population was young adults. The coefficients on age groups illustrate the fact that younger citizens tend to report greater percentages of the month as feeling mentally unwell. The fact that these coefficients follow a trend that is both statistically significant and increasing in magnitude is a mark against the policy. The 25-29 year old age group shows a 1.4 percent change in self-reported mental health, indicating that the young adult population is either not benefiting from the age extension up to 26 years old for dependent coverage, or that the extension itself is ineffective with regards to mental health services.

Conclusions

The Affordable Care Act made attempts to help American citizens in need of mental and behavioral health services by increasing insurance coverage and overhauling regulations over this segment of medical care. In theory, requiring that insurance plans provide coverage for behavioral health services should improve access and affordability of these services, in turn allowing for better mental health of individuals in the process.

However, the results in this study do not show any significant changes in the perceived feelings of mentally unhealthy days as a percentage of the month that can be attributed to the enactment of the essential mandates in 2014. It would appear that the policy did not improve mental health in the US as intended.

Table 1: Variable Descriptions and Categories

Variable Name	Description	Category
PercDaysMent	Percentage of days reported to feel mentally unwell in the past month	Percentage
InsuranceAccess	1 if person has health care coverage of some kind, 0 if uninsured	Binary
Health	Self-reported general health, scaled 1-5	Categorical (1) Excellent (2) Very Good (3) Good (4) Fair (5) Poor
PercDaysPhys	Percentage of days reported to feel physically unwell in the past month	Percentage
AgeGroup	Age group of the participant	Categorical (1) 18-24 (2) 25-29 (3) 30-34 (4) 35-39 (5) 40-44 (6) 45-49 (7) 50-54 (8) 55-59 (9) 60-64 (10) 65-69 (11) 70-74 (12) 75-79 (13) 80+
Male	1 if male, 0 if female	Binary
Race	Racial group of the participant	Categorical (1) White (2) Black (3) Asian (4) Hispanic
IncomeLevel	Income grouping of participant	Categorical (1) <$10,000 (2) $10,000<$15,000 (3) $15,000<$20,000 (4) $20,000<$25,000 (5) $25,000<$35,000 (6) $35,000<$50,000 (7) $50,000<$75,000 (8) $75,000+
State	The state that the participant lives in	Categorical (1) Alabama (2) Alaska (4) Arizona (5) Arkansas

		(6) California (8) Colorado (9) Connecticut (10) Delaware (11) District of Columbia (12) Florida (13) Georgia (15) Hawaii (16) Idaho (17) Illinois (18) Indiana (19) Iowa (20) Kansas (21) Kentucky (22) Louisiana (23) Maine (24) Maryland (25) Massachusetts (26) Michigan (27) Minnesota (28) Mississippi (29) Missouri (30) Montana (31) Nebraska (32) Nevada (33) New Hampshire (34) New Jersey (35) New Mexico (36) New York (37) North Carolina (38) North Dakota (39) Ohio (40) Oklahoma (41) Oregon (42) Pennsylvania (44) Rhode Island (45) South Carolina (46) South Dakota (47) Tennessee (48) Texas (49) Utah (50) Vermont (51) Virginia (53) Washington (54) West Virginia (55) Wisconsin (56) Wyoming (66) Guam (72) Puerto Rico
Year	Year that the data was collected	Categorical 2011

		2012 2013 2014 2015 2016 2017 2018
CostPrevent	1 if person needed to see a doctor but couldn't because of cost	Binary
CheckUp	Length of time since the participants last general check up	Category (1) Less than one year (2) 1 year < 2 years (3) 2 years < 5 years (4) 5+ years (5) Never
ExerciseFreq	1 if person participated in physical exercise outside of a job	Binary
VetStatus	1 if participant is a veteran	Binary
MaritalStatus	Marriage status of participant	Categorical (1) Married (2) Divorced (3) Widowed (4) Separated (5) Never married (6) Member of unmarried couple
EdLevel	Level of participant's highest educational attainment	Categorical (1) Grades 1-8 (Elementary) (2) Grades 9-11 (Some High School) (3) Grade 12 or GED (4) Some College (5) College Graduate
EmployStatus	Type of employment of participant	Categorical (1) Employed for wages (2) Self-employed (3) Out of work 1+ years (4) Out of work <1 year (5) Homemaker (6) Student (7) Retired (8) Unable to work
CompInterview	1 if interview was fully complete	Binary
HeartAtt	Indicator for whether participant has ever been told by a medical professional that they have had a heart attack	Binary
CoronaryHeartDisease	Indicator for whether participant has ever been told by a medical professional that they have coronary heart disease	Binary

Stroke	Indicator for whether participant has ever been told by a medical professional that they have had a stroke	Binary
Asthma	Indicator for whether participant has ever been told by a medical professional that they have had asthma	Binary
CancerSkin	Indicator for whether participant has ever been told by a medical professional that they have had skin cancer	Binary
CancerOther	Indicator for whether participant has ever been told by a medical professional that they have had cancer of any other variety	Binary
COPD	Indicator for whether participant has ever been told by a medical professional that they have chronic obstructive pulmonary disease	Binary
Arthritis	Indicator for whether participant has ever been told by a medical professional that they have arthritis	Binary
DepressiveDisorder	Indicator for whether participant has ever been told by a medical professional that they have a depressive disorder	Binary
KidneyDisease	Indicator for whether participant has ever been told by a medical professional that they have a kidney disease	Binary
Diabetes	Indicator for whether participant has ever been told by a medical professional that they have diabetes	Categorical (1) Yes (2) No, but pre-diabetes/borderline diabetes (3) No

Table 2
Descriptive Statistics

		Insured		Uninsured	
		2013	2014	2013	2014
Percentage of Month Mentally Unwell		0.11	0.10	0.17	0.16
		(0.25)	(0.25)	(0.31)	(0.31)
Cost Impact Ability to Seek Treatment		0.09	0.09	0.50	0.46
		(0.00)	(0.00)	(0.00)	(0.00)
Reported General Health	1	0.14	0.14	0.12	0.13
		(0.00)	(0.00)	(0.00)	(0.00)
	2	0.32	0.32	0.26	0.26
		(0.00)	(0.00)	(0.00)	(0.00)
	3	0.32	0.32	0.36	0.36
		(0.00)	(0.00)	0.00	(0.00)
	4	0.15	0.15	0.19	0.18
		(0.00)	(0.00)	(0.00)	(0.00)
	5	0.07	0.07	0.07	0.07
		(0.00)	(0.00)	(0.00)	(0.00)
Percentage of Month Physically Unwell		0.14	0.14	0.15	0.14
		(0.30)	(0.29)	(0.30)	(0.29)
Male		0.48	0.48	0.51	0.54
		(0.00)	(0.00)	(0.00)	(0.00)
Age Group	1	0.02	0.02	0.06	0.07
		0.00	0.00	(0.00)	(0.00)
	2	0.03	0.03	0.09	0.10
		0.00	0.00	(0.00)	(0.00)
	3	0.05	0.04	0.10	0.11
		(0.00)	(0.00)	(0.00)	(0.00)
	4	0.05	0.05	0.09	0.09
		(0.00)	(0.00)	(0.00)	(0.00)
	5	0.05	0.05	0.09	0.09
		(0.00)	(0.00)	(0.00)	(0.00)
	6	0.06	0.06	0.11	0.11
		(0.00)	(0.00)	(0.00)	(0.00)
	7	0.10	0.10	0.15	0.14
		(0.00)	(0.00)	(0.00)	(0.00)
	8	0.12	0.12	0.14	0.14
		(0.00)	(0.00)	(0.00)	(0.00)

	9	0.13 (0.00)	0.13 (0.00)	0.13 (0.00)	0.12 (0.00)
	10	0.14 (0.00)	0.14 (0.00)	0.02 (0.00)	0.02 (0.00)
	11	0.11 (0.00)	0.11 (0.00)	0.01 (0.00)	0.01 (0.00)
	12	0.07 (0.00)	0.07 (0.00)	0.01 0.00	0.01 (0.00)
	13	0.08 (0.00)	0.08 (0.00)	0.01 (0.00)	0.01 (0.00)
Educational Level	1	0.02 0.00	0.02 0.00	0.04 (0.00)	0.05 (0.00)
	2	0.06 (0.00)	0.06 (0.00)	0.12 (0.00)	0.13 (0.00)
	3	0.31 (0.00)	0.31 (0.00)	0.39 (0.00)	0.41 (0.00)
	4	0.30 (0.00)	0.30 (0.00)	0.31 (0.00)	0.29 (0.00)
	5	0.32 (0.00)	0.31 (0.00)	0.14 (0.00)	0.13 (0.00)
Income Group	1	0.05 (0.00)	0.05 (0.00)	0.13 (0.00)	0.13 (0.00)
	2	0.06 (0.00)	0.06 (0.00)	0.12 (0.00)	0.11 (0.00)
	3	0.08 (0.00)	0.08 (0.00)	0.17 (0.00)	0.16 (0.00)
	4	0.10 (0.00)	0.10 (0.00)	0.18 (0.00)	0.17 (0.00)
	5	0.12 (0.00)	0.12 (0.00)	0.15 (0.00)	0.15 (0.00)
	6	0.16 (0.00)	0.16 (0.00)	0.13 (0.00)	0.13 (0.00)
	7	0.17 (0.00)	0.17 (0.00)	0.07 (0.00)	0.08 (0.00)
	8	0.26 (0.00)	0.27 (0.00)	0.05 (0.00)	0.06 (0.00)
Exercise Regularly		0.71 (0.00)	0.74 (0.00)	0.66 (0.00)	0.70 (0.00)
Time Since Last Check-up	1	0.78	0.78	0.38	0.38

		(0.00)	(0.00)	(0.00)	(0.00)
	2	0.10	0.10	0.16	0.16
		(0.00)	(0.00)	(0.00)	(0.00)
	3	0.06	0.06	0.17	0.17
		(0.00)	(0.00)	(0.00)	(0.00)
	4	0.06	0.05	0.27	0.27
		(0.00)	(0.00)	(0.00)	(0.00)
	5	0.01	0.01	0.02	0.03
		0.00	0.00	0.00	(0.00)
Race	1	0.87	0.87	0.78	0.75
		(0.00)	(0.00)	(0.00)	(0.00)
	2	0.07	0.07	0.10	0.10
		(0.00)	(0.00)	(0.00)	(0.00)
	3	0.01	0.01	0.01	0.01
		0.00	0.00	(0.00)	(0.00)
	4	0.05	0.05	0.12	0.14
		(0.00)	(0.00)	(0.00)	(0.00)
Veteran Status		0.19	0.20	0.09	0.09
		(0.00)	(0.00)	(0.00)	(0.00)
Marital Status	1	0.53	0.53	0.35	0.35
		(0.00)	(0.00)	(0.00)	(0.00)
	2	0.18	0.17	0.25	0.24
		(0.00)	(0.00)	(0.00)	(0.00)
	3	0.14	0.14	0.06	0.05
		(0.00)	(0.00)	(0.00)	(0.00)
	4	0.02	0.02	0.05	0.05
		0.00	0.00	(0.00)	(0.00)
	5	0.11	0.11	0.24	0.25
		(0.00)	(0.00)	(0.00)	(0.00)
	6	0.03	0.03	0.06	0.07
		0.00	0.00	(0.00)	(0.00)
Employment Status	1	0.40	0.39	0.42	0.45
		(0.00)	(0.00)	(0.00)	(0.00)
	2	0.07	0.08	0.16	0.16
		(0.00)	(0.00)	(0.00)	(0.00)
	3	0.02	0.02	0.10	0.08
		0.00	0.00	(0.00)	(0.00)
	4	0.02	0.02	0.10	0.09
		0.00	0.00	(0.00)	(0.00)

	5	0.04 (0.00)	0.04 (0.00)	0.05 (0.00)	0.06 (0.00)
	6	0.01 0.00	0.01 0.00	0.03 (0.00)	0.02 (0.00)
	7	0.34 (0.00)	0.36 (0.00)	0.06 (0.00)	0.06 (0.00)
	8	0.10 (0.00)	0.10 (0.00)	0.08 (0.00)	0.07 (0.00)
Heart Attack		0.09 (0.00)	0.09 (0.00)	0.04 (0.00)	0.04 (0.00)
Coronary Heart Disease		0.09 (0.00)	0.09 (0.00)	0.04 (0.00)	0.04 (0.00)
Stroke		0.05 (0.00)	0.05 (0.00)	0.03 (0.00)	0.03 (0.00)
Asthma		0.14 (0.00)	0.14 (0.00)	0.15 (0.00)	0.14 (0.00)
Skin Cancer		0.12 (0.00)	0.11 (0.00)	0.03 (0.00)	0.03 (0.00)
Any Other Cancer		0.12 (0.00)	0.12 (0.00)	0.06 (0.00)	0.05 (0.00)
COPD		0.14 (0.00)	0.14 (0.00)	0.11 (0.00)	0.10 (0.00)
Arthritis		0.40 (0.00)	0.42 (0.00)	0.27 (0.00)	0.25 (0.00)
Depressive Disorder		0.24 (0.00)	0.24 (0.00)	0.29 (0.00)	0.27 (0.00)
Kidney Disease		0.04 (0.00)	0.04 (0.00)	0.02 (0.00)	0.03 (0.00)
Diabetes	1	0.15 (0.00)	0.15 (0.00)	0.08 (0.00)	0.08 (0.00)
	2	0.02 0.00	0.02 0.00	0.02 (0.00)	0.01 (0.00)

	3	0.83 (0.00)	0.83 (0.00)	0.90 (0.00)	0.90 (0.00)

Table 3
Effects on participants self-reported mental health
(measured as a percentage of the month feeling mentally unwell)

	(1)	(2)	(3)	(4)	(5)	(6)
Change attributable to the ACA essential mandate in 2014	0.014***	0.014***	0.015***	-0.001	-0.001	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Insurance Access	-0.067***	-0.067***	-0.068***	0.013***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Pre-trend 2011		0.000				
		(0)				
Pre-trend 2012		0.001	0.002			
		(0.001)	(0.002)			
Pre-trend 2013			0.002			
			(0.002)			
Percentage of the month reported as feeling physically unwell				0.168***	0.145***	0.142***
				(0.001)	(0.001)	(0.001)
Age Group						
25-29				-0.012***	-0.015***	-0.014***
				(0.001)	(0.001)	(0.001)
30-34				-0.018***	-0.022***	-0.021***
				(0.001)	(0.001)	(0.001)
35-39				-0.023***	-0.027***	-0.026***
				(0.001)	(0.001)	(0.001)
40-44				-0.029***	-0.031***	-0.031***
				(0.001)	(0.001)	(0.001)
45-49				-0.035***	-0.036***	-0.036***
				(0.001)	(0.001)	(0.001)
50-54				-0.046***	-0.045***	-0.045***
				(0.001)	(0.001)	(0.001)
55-59				-0.058***	-0.056***	-0.056***
				(0.001)	(0.001)	(0.001)
60-64				-0.077***	-0.071***	-0.070***
				(0.001)	(0.001)	(0.001)

65-69				-0.092***	-0.081***	-0.080***
				(0.001)	(0.001)	(0.001)
70-74				-0.107***	-0.089***	-0.088***
				(0.001)	(0.001)	(0.001)
75-79				-0.121***	-0.094***	-0.093***
				(0.001)	(0.001)	(0.001)
80+				-0.139***	-0.103***	-0.102***
				(0.001)	(0.001)	(0.001)
Cost of treatment prevented seeking medical services				0.085***	0.064***	0.063***
				(0.000)	(0.000)	(0.000)
Employment Status						
Self-employed				0.002***	0.001***	0.001***
				(0.001)	(0.000)	(0.000)
Out of work 1+ years				0.065***	0.045***	0.044***
				(0.001)	(0.001)	(0.001)
Out of work <1 year				0.056***	0.041***	0.041***
				(0.001)	(0.001)	(0.001)
Homemaker				0.003***	-0.002***	-0.002***
				(0.001)	(0.001)	(0.001)
Student				0.018***	0.013***	0.014***
				(0.001)	(0.001)	(0.001)
Retired				0.008***	0.000	0.000
				(0.000)	(0.000)	(0.000)
Unable to work				0.114***	0.069***	0.068***
				(0.001)	(0.001)	(0.001)
Diagnosed with depressive disorder					0.197***	0.195***
					(0.000)	(0.000)
Demographic Controls	N	N	N	Y	Y	Y
Depression Control	N	N	N	N	Y	Y
Morbidities Controls	N	N	N	N	N	Y
Sample Size	3676510	3676510	3676510	2763040	2754690	2664569

Notes: ***P <0:01, **P <0:05, *P <0:1, Standard errors in parentheses

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