CAUSAL EFFECTS OF DEPRESSION ON JOB SATISFACTION

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MOTIVATION

- < 50% of employees in U.S. are satisfied with their jobs (Deloitte, 2019)

- "Disengaged employees cost the U.S. an estimated $450-500 billion in a single year" (Inc., 2018)

- Increasing job satisfaction can lead to cutting costs, improving productivity, and supporting worker wellbeing

- Depression is on the rise, tripling across all demographic groups during COVID-19 (Fox, 2018)

RESEARCH QUESTION

- **Does depression affect job satisfaction?**

- Data: Americans' Changing Lives

  - Sample restricted to individuals with a job who did not drop from the study (N = 3,423 observations; 1,286 unique individuals)

- Focus: employed Americans over the age of 25

- Time Period: 1986, 1989, 1994

LITERATURE REVIEW

- Many studies have found that depression and bipolar disorder cause a decrease in labor force participation and lifetime earnings (Banerjee et al., 2015; Chatterji et al., 2011; Frank et al., 2019; Hakulinen et al., 2019; Peng et al., 2015)

- Health-impaired employees are less satisfied than their nonimpaired counterparts (Drydakis, 2011)

- Contributions of my project:

    - Use of multiple measures of depression, drawing on research from Andresen et al. (1993)

    - Use of two identification strategies

    - New longitudinal dataset

MEASURING DEPRESSION

- Mental health can often be amorphous and difficult to quantify

- Three variables:

  - Continuous measure, based on CES-D questionnaire (scale of 0-12)

  - Indicator, based on continuous variable

  - Index, measuring difference from average mental health

DESCRIPTIVE STATISTICS

Variable	Total	Depressed	Not Depressed	t-statistic $(H_0: \mu_{Dep.} = \mu_{Not\ Dep.})$
Job Satisfaction	63.8% (0.481)	49.8% (0.500)	69.0% (0.463)	10.49*
Depressed (continuous measure)	2.282 (2.376)	5.582 (1.749)	1.064 (1.047)	-92.02*
Clinical Depression (indicator)	27.0% (0.444)	100% (0)	0% (0)	N/A
Mental Health Index	-0.010 (0.689)	0.951 (0.509)	-0.365 (0.297)	-93.17*

CONTROL VARIABLES

Variable	Mean	Variable	Mean
Age	42.71 (10.003)	Black	28.3% (0.451)
Age-Squared	1,924.02 (895.591)	Married	63.6% (0.481)
Male	47.5% (0.499)	Years of Education	13.18 (2.543)

CONTROL VARIABLES

Variable	Mean	Variable	Mean
Income Range: $0 - $9,999	8.9% (0.284)	Income Range: $30,000 - $39,999	16.0% (0.366)
Income Range: $10,000 - $19,999	19.0% (0.393)	Income Range: $40,000 - $59,999	20.2% (0.402)
Income Range: $20,000 - $29,999	19.6% (0.397)	Income Over $60,000	16.3% (0.369)

EMPIRICAL METHODOLOGY

- Endogeneity problem – simultaneity and omitted variable bias
- Fixed Effects:

$$jobsatisfaction_{it} = \beta_0 + \beta_1 depressed_{it} + \beta_2 X_{it} + \delta_{it} + \epsilon_{it}$$

- Ordinary Least Squares with Lagged Depression Variable:

$$jobsatisfaction_{it} = \gamma_0 + \gamma_1 depressed_{i,t-1} + \gamma_2 W_{it} + \mu_{it}$$

- Models will be repeated with each measure of depression

FIXED EFFECTS RESULTS (N = 3,423)

VARIABLES	Job Satisfaction	Job Satisfaction	Job Satisfaction
Depressed* (continuous measure)	**-0.055***** (0.021)		
Clinical Depression* (indicator)		**-0.065***** (0.024)	
Mental Health Index*			**-0.058***** (0.017)
% Change in Job Satisfaction	-8.62%	-10.19%	-9.09%

LAGGED DEPRESSION RESULTS (N = 2,137)

VARIABLES	Job Satisfaction	Job Satisfaction	Job Satisfaction
Lagged Depression (continuous measure)*	**-0.034***** (0.004)		
Lagged Clinical Depression (indicator)*		**-0.147***** (0.024)	
Lagged Mental Health Index*			**-0.116***** (0.015)
% Change in Job Satisfaction	-5.37%	-23.22%	-18.33%

HETEROGENEITY ANALYSIS: GENDER (N = 2,137)

VARIABLES	Job Satisfaction	Job Satisfaction	Job Satisfaction
Lagged Depression (continuous measure)*	-0.026*** (0.006)		
Lagged Clinical Depression (indicator)*		-0.101*** (0.031)	
Lagged Mental Health Index*			-0.089*** (0.019)
Male x Lagged Depression Measure*	**-0.019**** (0.009)	**-0.103**** (0.047)	**-0.067**** (0.031)
Male	0.036 (0.028)	0.025 (0.024)	-0.008 (0.021)

DISCUSSION

- Both models produced negative effects of depression on job satisfaction
    - Remain cautious about claiming causality
- Supports Drydakis (2011)'s findings that job satisfaction of physically-impaired employees is more negatively affected by adverse mental health than non-impaired counterparts
- Relationship may suggest broad impacts of mental health, causing a spillover effect from personal to professional life
- Potential limitations: endogeneity problems, external validity

POLICY IMPLICATIONS

- Depression is not just a personal problem – poor job satisfaction contributes to worsened productivity and motivation

- Mental health policies in workplace have a positive effect on worker wellbeing (Charoensukmongkol, 2014)

- Potential policies by both government and/or individual firms may alleviate triggers of depression

  - Paid parental leave

  - Increased vacation days

  - Flex time

CONCLUSIONS

- Statistically significant negative relationship between depression and job satisfaction, adding to the literature

    - Gender differences in effect of lagged depression variable model

- Compelling evidence that depression has a causal impact

- Mental health programs may simultaneously improve worker wellbeing and cause positive spillover effects on business outcomes

- Future work: strengthen assertion of causality, identify effect of depression on productivity or benefit of mental health programs

THANK YOU!