

Absenteeism and Presenteeism Among American Workers

Nicole Maestas
Harvard Medical School and NBER

Kathleen J. Mullen
RAND and IZA

Stephanie Rennane
RAND

6th Annual Meeting of the Disability Research Consortium

August 1, 2018
Washington, D.C.

This research was supported by a grant from the U.S. Social Security Administration (SSA) as part of the Disability Research Consortium (DRC). The findings and conclusions are solely those of the authors and do not represent the views of SSA, any agency of the Federal Government, the NBER Disability Research Center or Mathematica's Center for Studying Disability Policy (CSDP).

Introduction

Labor force exit due to disability is often preceded by a gradual decline in health during prior years (van Rijn et al. 2014). Frequent or increased rates of presenteeism and health-related absenteeism could indicate a growing health problem and could be an early sign of longer-term absences down the road. In many cases, persistent absenteeism could be used as justification for finding someone disabled when they apply for SSDI. However, not all cases of chronic absenteeism necessarily reflect disability. First, recent changes in production and advancements like telework and flexible work schedules could accommodate changing schedules or medical appointments, making it easier for individuals with health problems to continue to work. Furthermore, some work absences could reduce presenteeism and allow the worker to be more productive while at work. Finally, while certain types of conditions could be more likely to worsen and lead to subsequent labor market exit, others could yield chronic absences, but not necessarily be predictors of longer-term disabilities.

In this study we analyze the relationship between absenteeism, presenteeism and later work outcomes using data from the American Working Conditions Survey (AWCS). We conduct a detailed analysis to establish baseline trends in absenteeism and presenteeism over time for a diverse sample of workers across occupations and industries in this unique and recent survey of American workers. We then analyze the extent to which certain absenteeism and presenteeism patterns, or deviations from the standard pattern, are predictive of future changes in labor force activity.

1. Prior Literature

While existing literature is somewhat limited, recent findings provide context on the current distribution of absenteeism and presenteeism. One challenge in establishing a baseline for absence rates and presenteeism is that measurement of absenteeism and presenteeism vary by survey and study. For example, based on recent estimates National Health Interview Survey, Americans take an average of 3 to 3.7 sick days per year, depending on whether or not they have access to sick leave (Ahn and Yelowitz 2016), and estimates from the Commonwealth Fund Biennial Health Insurance Survey suggest that 64 percent of Americans take at least one sick day in a given year (Davis et al. 2005). The American Time Use Survey, by contrast, measures absences per week, and recent estimates suggest that approximately 4.8 percent of employees take sick leave on any given week, and approximately 3 million, or 2 percent of employees engage in presenteeism on any given week (Susser and Ziebarth 2016). Presenteeism is also measured differently a cross studies, but Burton et al. (2005) estimates that productivity losses over the last two weeks ranged between 15 percent for individuals with 0-2 health risks to 27 percent for individuals with 5 or more health risks. Research has also found that mental health conditions such as anxiety or panic disorders, depression, and other psychiatric conditions are associated with both higher presenteeism and absenteeism (e.g., Banerjee et al. 2017, Peng et al. 2016, Pelletier et al. 2009, Kessler et al. 2006).

The majority of evidence on the relationship between absenteeism, presenteeism and future disability spells comes from Scandinavian countries and often finds that use of sick leave and worker absences are strong predictors of future disability pension take up, and the relationship between absence and disability spells is found to be strongest for absences spells with long durations, in the range of approximately 200 days or more (e.g., Wallman et al. 2009, Andren 2007, Kivimaki et al. 2007, Gjesdal and Bratberg 2003). Several papers also find evidence that

sick leave due to mental disorders in particular is an important predictor of future disability pension take up (e.g., Karlsson et al. 2008, Kivimaki et al. 2007, Vaez et al. 2007).

While there is a growing body of research on this question in the European context, only a few studies provide evidence from the U.S.: Muchmore et al. (2003) estimates that individuals with arthritis are 150 percent more likely to file a short-term disability claim, and 86 percent more likely to file a long-term disability claim, than individuals without arthritis. Anema et al. (2009) finds that among those individuals with short-term absences for back pain, 49 percent of U.S. respondents had returned to work two years later, compared to a low of 22 percent of respondents in Germany, and a high of 62 percent in the Netherlands.

2. Data

We use the AWCS to add to the evidence base on trends in absenteeism and presenteeism in the U.S. The AWCS was fielded to the RAND American Life Panel (ALP), an internet-based survey panel of a nationally representative (when weighted) sample of U.S. adults. The AWCS was originally fielded to workers ages 18-70 in July 2015, and follow up surveys were fielded in January 2016, July 2016 (ages 50+ only) and July 2018. Because of the panel structure of the ALP, respondents can be linked across each of the follow-up AWCS surveys as well as other ALP modules, allowing for a study of within-person changes in absenteeism, presenteeism and labor force participation, as well as cross-sectional variation over time. Each wave of the survey includes questions on both absenteeism and presenteeism (working while sick) in the past twelve months. The survey also asks respondents about health conditions, workplace characteristics and preferences, labor market activity, occupation and income. Approximately 3,000 ALP participants responded to the baseline AWCS module, and approximately 2,000 of these respondents were working at the time and were surveyed about absenteeism and presenteeism. Response rates in the follow-up surveys have been at or above 85 percent.

Table 1: Absenteeism and Presenteeism Statistics in the AWCS

	<u>Overall</u>	<u>Paid sick leave</u>	<u>No paid sick leave</u>
Has paid sick leave (%)	66	100	0
Any absence in last 12 months (%)	49	55	38
Mean absence days (unconditional)	3.5	4.2	2.2
Mean absence days (conditional on any)	7.2	7.6	5.9
Median absence days (conditional on any)	3	3	3
Worked while sick at least once (%)	68	70	66
Productivity Loss when working while sick (%)	22.8	21.8	25.0
<i>Observations</i>	<i>1,965</i>	<i>1,294</i>	<i>671</i>

Notes: Data from 2015 AWCS. Sample conditional on respondents who working and responded to questions on absenteeism. Statistics calculated with sample weights.

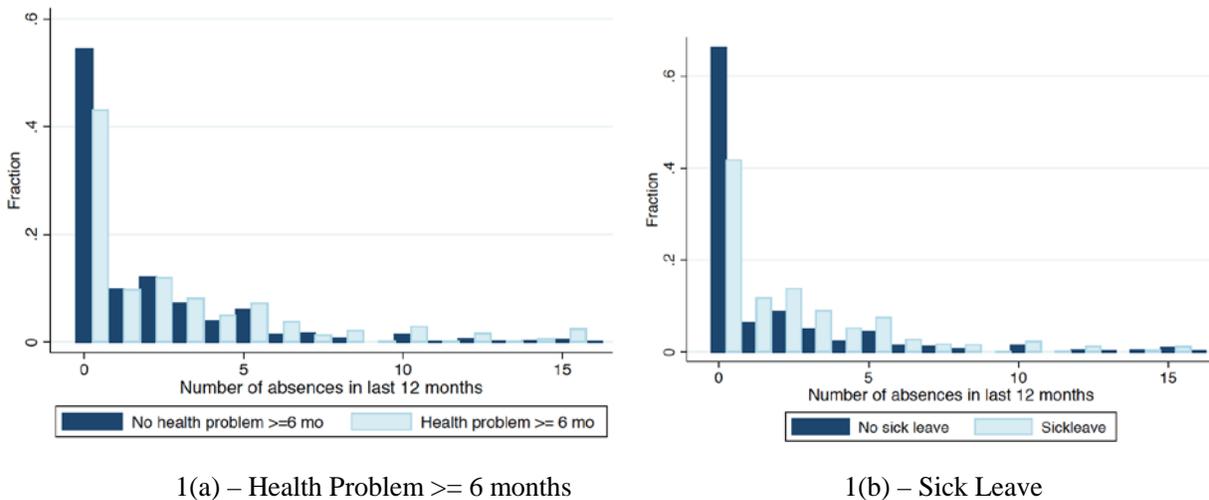
To measure absenteeism, the AWCS asked respondents how many days in total they were absent from work for health-related reasons during the past 12 months. To measure presenteeism, the survey asked whether respondents worked when they were sick over the past 12 months, and if they did, we asked them to rate on a scale from 0-100% how much they think their productivity was affected while working sick. Table 1 shows the distribution of responses to these questions from the 2015 baseline survey – for the overall sample, and separately for respondents who do and do not have sick leave. A higher percentage of workers report missing at

least one day due to illness when they have sick leave (55 vs. 38 percent), and those with sick leave miss approximately 2 more days of work per year due to illness, on average. However, the median number of absence days over the past 12 months is the same (3 days) regardless of access to sick leave. Over two-thirds of workers report working while sick at least once during the past year, and mean productivity losses when working sick range between 20 and 25 percent.

3. Preliminary Findings

Figure 1 shows more detail on the distribution of absences due to illness during a year. The figure shows the distribution of absences for those with and without a serious health problem (measured as a health condition lasting at least 6 months) in Figure 1a, and those with and without sick leave in Figure 1b. Figure 1a shows that the distribution of absences is shifted to the right for those with significant health problems: approximately 40 percent report 0 absences, compared with 56 percent of those without significant health problems. The 75th percentile of absences for those with significant health problems is 5 days, compared to 1 day for those without significant health problems. Panel 1b shows the shift to the right in the distribution for those with sick leave compared to those without, demonstrating that the trends in sick leave presented by the averages in Table 1 persist throughout the distribution. In other analyses, we found that blue collar workers, those with lower education levels (a high school diploma or less), older workers, and men all report fewer absences per year.

Figure 1: Distribution of Absence Days by Health Condition and Sick Leave

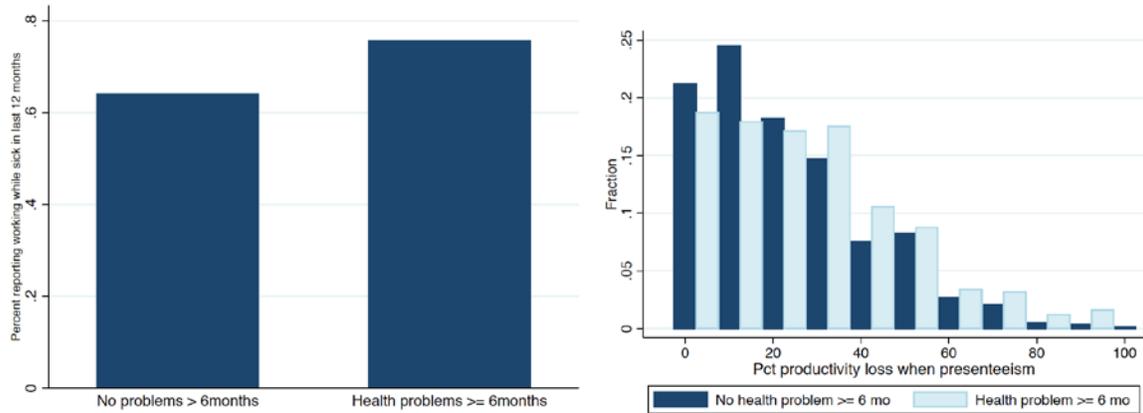


Notes: Data from 2015 AWCS. Sample conditional on respondents who working and responded to questions on absenteeism. Statistics calculated with sample weights.

Figure 2 provides more detail on presenteeism patterns for workers with and without significant health problems. Figure 2a shows the share of workers with and without significant health problems who report ever working while sick in the past 12 months. Then, for those who do report ever working while sick, Figure 2b shows the distribution of the self-reported productivity loss for the time when working while sick. As highlighted in Table 1, presenteeism is quite common: nearly two thirds of workers *without* significant health problems still report working while sick at least once during the past 12 months. However, an even higher 75 percent of workers with significant health problems report working while sick. Figure 2b shows that workers with significant health problems also tend to report higher productivity losses when working while sick: while 45 percent of workers without significant health problems report

productivity losses of 0-10 percent, only about 35 percent of workers with significant health problems report productivity losses in this range. Additional analyses revealed that trends in presenteeism for other subgroups in the population follow a similar pattern as the trends in absenteeism. Notably, workers over age 50 report particularly low levels of presenteeism: less than 60 percent of workers over age 50 ever report working while sick, and these workers also report lower productivity losses while sick.

Figure 2: Distribution of Presenteeism for Workers with Significant Health Conditions



2(a) – Any presenteeism

2(b) – Productivity loss (%)

Notes: Data from 2015 AWCS. Sample conditional on respondents who working and responded to questions on absenteeism. Statistics calculated with sample weights.

After these bivariate comparisons, we next examine which factors are the strongest predictors of absenteeism and presenteeism in a cross-sectional multivariate regression. Table 2 shows the coefficients from two separate regressions: column 1 shows the coefficients predicting whether

Table 2: Regression of Absenteeism and Presenteeism on Health Characteristics

Dependent variable:	(1) Absences > 75th Percentile	(2) Any Presenteeism
Any presenteeism	0.142*** (0.0314)	
Days absent		-0.00100 (0.000810)
Health Problem > = 6 months	0.132*** (0.0385)	0.0990*** (0.0292)
Muscle/back problem	0.0555 (0.0341)	0.131*** (0.0350)
Depression	0.0721* (0.0373)	0.137*** (0.0326)
Observations	1,913	1,913
Y-mean	0.25	0.676

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Sample restricted to those who responded to AWCS absenteeism questions. Data from 2015 AWCS. Additional covariates in the regression include having sick leave, age, female, education, income and occupation characteristics.

or not a worker reports high rates of absence, as measured by reporting absences at or above the 75th percentile of the overall distribution (3 days). Column 2 shows the coefficients from a

regression predicting whether the worker reports any presenteeism. Having a significant health problem is one of the strongest predictors of both high absences and any presenteeism: those with a significant health problem are 13 percentage points more likely to have absence rates above the 75th percentile, and nearly 10 percentage points more likely to report working while sick during the previous 12 months. Specific health conditions, such as depression, further increase the likelihood of both absenteeism and presenteeism, consistent with the prior literature cited above.

We next analyze the relationship between absenteeism and presenteeism reported in the baseline survey, and respondents' labor force participation three years later in early 2018. Each column in Table 3 shows a separate regression analyzing the relationship between absenteeism, presenteeism and the 2018 self-reported labor force outcome indicated in the column header. We include indicators for bins of the number of absences per year, with the omitted category being those with 0-1 absences per year. Column 1 shows that those with particularly high absences in 2015 (11 or more in the last 12 months) are nearly 9 percentage points less likely to be working three years later in 2018. Note that the 90th percentile of the overall absence distribution is 7 days per year, so 11 days represents the extreme upper tail of this distribution. While we do not find a strong association between absences or presenteeism and unemployment, retirement or temporary layoffs, Column 4 shows that those with 5-10 absences during 2015 are nearly 3 percentage points more likely to report being disabled in 2018, a large increase relative to the 2 percent of the overall population who was working in the baseline survey and reports being disabled in 2018. Having a significant health condition is negatively associated with working in 2018, and positively associated with being disabled in 2018.

Table 3: Regression of 2018 Labor Force Status on 2015 Absenteeism & Presenteeism

	(1)	(2)	(3)	(4)	(5)
Dependent variable: LF Status 2018	Working	Unemployed	Temp Layoff	Disabled	Retired
Absences: 2-4 days	0.00132 (0.0232)	0.00671 (0.0126)	0.00120 (0.00562)	0.000866 (0.00838)	-0.0158 (0.0160)
Absences: 5-10 days	0.0160 (0.0281)	-0.000623 (0.0160)	0.0143 (0.0115)	0.0298* (0.0162)	-0.0115 (0.0182)
Absences: 11+ days	-0.0860* (0.0499)	0.0501 (0.0333)	0.0290 (0.0194)	0.0306 (0.0270)	0.0472 (0.0354)
Percent productivity loss (presenteeism)	-8.96e-05 (0.000510)	-0.000382 (0.000243)	7.25e-05 (0.000186)	-0.000306 (0.000214)	2.76e-06 (0.000331)
Health problem >= 6 months	-0.0499** (0.0222)	0.0107 (0.0133)	-0.00556 (0.00574)	0.0337*** (0.00994)	0.0161 (0.0153)
Observations	1,208	1,208	1,208	1,208	1,208
Y-mean	0.861	0.0332	0.0111	0.0196	0.0880

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Sample conditional on respondents who were working at baseline and responded to the 2018 ALP demographic follow-up. Data from 2015 AWCS and 2018 ALP. Additional covariates in the regression include having a muscle/back problem, depression, sick leave, age, female, education, income and occupation characteristics.

We draw several preliminary conclusions from these initial findings. First, fairly low rates of absenteeism are common throughout most of the working population. As expected, workers with significant health conditions have higher rates of absenteeism and presenteeism, as do workers who have sick leave. Consistent with prior literature, we find some preliminary evidence that high absence rates (i.e., the top percentiles of the distribution) may be predictive of reductions in work and increases in disability in the future.

References

- Ahn, Thomas and Aaron Yelowitz. 2016. "Paid Sick Leave and Absenteeism: The First Evidence in the U.S." Working paper.
- Andren, Daniela. 2007. "Long-term absenteeism due to sickness in Sweden. How long does it take and what happens after?" *European Journal of Health Economics*, 8:41–50.
- Anema, J. R., A. J. M. Schellart, J. D. Cassidy, P. Loisel, T. J. Veerman, and A. J. van der Beek. 2009. "Can Cross Country Differences in Return-to-Work After Chronic Occupational Back Pain be Explained? An Exploratory Analysis on Disability Policies in a Six Country Cohort Study." *Journal of Occupational Rehabilitation*, 19:419–426.
- Banerjee, Souvik, Pinka Chatterji and Kajal Lahiri. 2017. "Effects of Psychiatric Disorders on Labor Market Outcomes: A Latent Variable Approach using Multiple Clinical Indicators." *Health Economics*, 26: 184–205.
- Burton, Wayne N., Chin-Yu Chen, Daniel J. Conti, Alyssa B. Schultz, Glenn Pransky, and Dee W. Edington. 2005. "The association of health risks with on-the-job productivity." *Journal of Occupational and Environmental Medicine*, 47(8):769-777.
- Davis, Karen, Sara R. Collins, Michelle M. Doty, Alice Ho, and Alyssa L. Holmgren. 2005. "Health and Productivity Among U.S. Workers" Commonwealth Fund Issue Brief. Washington, DC.
- Gjesdal, Sturla and Espen Bratberg. 2003. "Diagnosis and duration of sickness absence as predictors for disability pension: Results from a three-year, multi-register based and prospective study." *Scandinavian Journal of Public Health*, 31: 246–254.
- Karlsson, Nadine E. , John M. Carstensen, Sturla Gjesdal, and Kristina A. E. Alexanderson. 2008. "Risk factors for disability pension in a population-based cohort of men and women on long-term sick leave in Sweden." *European Journal of Public Health*, 18(3): 224–231.
- Kessler, Ronald C. , Hagop S. Akiskal, Minnie Ames, Howard Birnbaum, Paul Greenberg, Robert M.A. Hirschfeld, Robert Jin, Kathleen R. Merikangas, Gregory E. Simon, and Philip S. Wang. 2006. "Prevalence and Effects of Mood Disorders on Work Performance in a Nationally Representative Sample of U.S. Workers." *American Journal of Psychiatry*, 163:1561-1568.
- Kivimaki, Mika, Jane E Ferrie, Jan Hagberg, Jenny Head, Hugo Westerlund, Jussi Vahtera, and Kristina Alexanderson. 2007. "Diagnosis-specific sick leave as a risk marker for disability pension in a Swedish population." *Journal Epidemiological Community Health*, 61:915–920.
- Muchmore, Lamont, Wendy D. Lynch, Harold H. Gardner, Todd Williamson, and Tom Burke. 2003. "Prevalence of Arthritis and Associated Joint Disorders in an Employed Population and the Associated Healthcare, Sick Leave, Disability, and Workers' Compensation Benefits Cost and Productivity Loss for Employers." *Journal of Occupational and Environmental Medicine*, 43(4): 369-378.
- Pelletier, Barbara Myde Boles, Wendy Lynch. 2009. "Change in Health Risks and Work Productivity Over Time." *Journal of Occupational and Environmental Medicine*, 46: 746-754.
- Peng, Lizhong, Chad D. Meyerhoeffer, and Samuel H. Zuvekas. 2016. "The Short-Term Effect of Depressive Symptoms on Labor Market Outcomes." *Health Economics*, 25: 1223–1238.
- Susser, Philip and Nicolas Ziebarth. 2016. "Profiling the U.S. Sick Leave Landscape: Presenteeism among Females." *Health Services Research*, 51(6): 2305-2317.
- Wallman, Thorne, Hans Wedel, Edward Palmer, Annika Rosengren, Saga Johansson, Henry Eriksson and Kurt Svärdsudd. 2009. "Sick-leave track record and other potential predictors of a disability pension. A population based study of 8,218 men and women followed for 16 years." *BMC Public Health*, 9:104.
- Vaez, Marjan, Gunnar Rylander, Ake Nygren, Marie Asberg, Kristina Alexanderson. 2007. "Sickness absence and disability pension in a cohort of employees initially on long-term sick leave due to psychiatric disorders in Sweden." *Social Psychiatry Psychiatric Epidemiology*, 42:381-388.
- van Rijn RM, Robroek SJW, Brouwer S. 2014. Influence of poor health on exit from paid employment: a systematic review. *Journal of Occupational and Environmental Medicine*, 71:295-301.