**Multiple Job Holding and Mental Health Among Low-income Mothers**

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**Abstract**

*Purpose:* Studies have found considerable heterogeneity in the links between employment and mental health, finding that certain work conditions, such as non-standard schedules and low job quality, are linked with poorer mental health. One largely overlooked facet of work is multiple job holding. In this paper, we examine the link between multiple job holding and mental health among low-income mothers.

*Methods:* We used data from the Fragile Families and Child Wellbeing Study (*n*=7,844 person-wave observations), a longitudinal cohort study (1999-2016) of mostly low-income mothers in 20 large U.S. cities, to examine the link between multiple job holding and maternal depression and life dissatisfaction.

*Results:* Across a number of different model specifications we find that multiple job holding is associated with higher probabilities of depression (3-4 percentage points higher). We also find some weaker evidence that multiple job holding is associated with life dissatisfaction (2-4 percentage points higher). When we include measures of job quality and intensity, we continue to see an independent association between multiple job holding and mental health. We also find that the associations between multiple job holding and depression/life dissatisfaction are strongest for mothers who also work 45 hours or more per week, work non-standard schedules, and have lower earnings.

*Conclusions:* Our study suggests that multiple job holding is associated with a higher likelihood of experiencing depression and somewhat associated with greater life dissatisfaction and should be considered by mental health practitioners and researchers seeking to understand drivers of depression.

## Introduction

Approximately 7% of adults (16 million individuals) experienced a major depressive disorder in the past year (National Institute of Mental Health, 2017). Depression not only affects the individual experiencing depression, but it can also have long lasting consequences on relationships with others (Coyne, 1976), and especially on children (Downey & Coyne, 1990; Elder, 1998; Radke-Yarrow & Klimes-Dougan, 2002; Turney, 2011). Understanding correlates of mental health among mothers is important if we are to improve the wellbeing of mothers and their children.

One key correlate of mental health is employment. Studies have found considerable heterogeneity in the links between employment (or unemployment) and mental health, finding both positive and negative associations for mothers (Jacobs, Hill, Tope, & O'Brien, 2016; Raver, 2003). Additionally, an emerging literature has recognized precarious work (e.g., job insecurity, job loss, temporary work), as a social correlate of health (Benach et al., 2014), generally finding that precarity is linked with poorer mental health. Another line of research has focused on the type of work schedule (comparing daytime, or standard hours, to evening/night/weekend, or non-standard hours), finding non-standard schedules are associated with poorer mental health (Bildt & Michélsen, 2002; Howard, 2017; Strazdins, Clements, Korda, Broom, & D'Souza, 2006). Last, job quality, such as high stress or inflexible work, has also been linked with higher levels of depression (Goodman, Crouter, & The Family Life Project Key Investigators, 2009; Usdansky, Gordon, Wang, & Gluzman, 2012).

One largely overlooked facet of work is multiple job holding. Multiple job holding, or working more than one job concurrently, is relatively common. National estimates suggest that, over the course of a year, 20% of men and 12% of women work multiple jobs concurrently

(Paxson & Sicherman, 1996). Recent research found that about 16% of mothers with young children held multiple jobs (Pilkauskas, Waldfogel, & Brooks-Gunn, 2016). Although some research has examined links between multiple job holding and injury (Marucci-Wellman, Willetts, Lin, Brennan, & Verma, 2014), to our knowledge, no studies have examined associations with mental health.

Multiple job holding might influence mental health for a few reasons. Multiple job-holders work more hours on average than those with a single job (Taylor & Sekscenski, 1982). If holding multiple jobs means that individuals spend more time at work, or more time in non-standard work hours, this may limit time for health promoting activities, such as exercising, sleeping, or accessing mental health services (Mai, Hill, Vila-Henninger, & Grandner, 2018; Marucci-Wellman, Lin, Willetts, Brennan, & Verma, 2014; Marucci-Wellman, Lombardi, & Willetts, 2016). Multiple job holding may also increase stress and lead to role overload. Role strain theory posits the demands associated with multiple social roles increases the obligations an individual faces, making it difficult to meet the expectations of all roles (Goode, 1960). Prior research has found that compared to single job-holders, multiple job-holders experience higher perceived stress and work-family conflict (Australian Bureau of Statistics, 2009; Henly & Lambert, 2014).

The current study extends earlier research by examining the link between multiple job holding and two measures of mental health, depression and life dissatisfaction, among lower-income mothers. Because the relationship between multiple job holding and mental health outcomes may be influenced by the characteristics of mother's jobs, we also examine whether the relationship is moderated by the intensity (hours worked per week and months worked last year) or quality (earnings, schedule type, formal/informal) of work.

We focus on lower-income mothers because recent labor market growth has been concentrated in low-wage jobs and because non-standard work is more common among lower-income workers and women (Benach & Muntaner, 2007; Enchautegui, 2013). We study mothers in particular because maternal labor force participation has dramatically increased over the last 40 years, from 47% in 1975 to 71% today (Bureau of Labor Statistics, U.S. Department of Labor, 2009, 2017). Additionally, mothers, and especially low-income mothers, are most likely to experience role strain while balancing work and child rearing activities (Hochschild, 2003; Jacobs et al., 2016; Raver, 2003) which has implications for their mental health (Bianchi & Milkie, 2010). Finally, maternal mental health has intergenerational implications as depression is linked with a wide range of negative emotional and behavioral outcomes for children (Goodman & Tully, 2006; Lovejoy, Graczyk, O'Hare, & Neuman, 2000).

**Methods**

We used data from the Fragile Families and Child Wellbeing Study (FFCWS), a longitudinal survey following a cohort of 4,898 children, born between 1998 and 2000 in 20 large (populations over 200,000) U.S. cities, and their parents. Parents were sampled at a ratio of one marital to three non-martial births. Thus, the sample is relatively low-income, where job precarity is most common, making it ideal for this study. Baseline surveys were conducted soon after the child's birth, and follow-ups occurred when the child was 1 (1999-2001), 3 (2001-2003), 5 (2003-2006), 9 (2007-2010), and 15 (2014-2017) years old. Of the baseline sample, 90%, 88%, 87%, 76% and 77% responded to the 1-, 3-, 5-, 9-, and 15-year surveys, respectively. The FFCWS was reviewed and approved by Princeton University and Columbia University institutional review boards (IRB). The analyses conducted in this study used de-identified secondary data and thus were determined to be exempt by the University of Michigan IRB.

We primarily used data from the 3-, 5-, 9-, and 15-year surveys, when all variables of interest—multiple job holding, depression and life dissatisfaction—were measured. In some models, we also used covariates from the baseline and 1-year surveys to ensure proper time ordering of the main analyses. We pooled data from the 3-, 5-, 9-, and 15-year surveys, resulting in 14,151 observations. We restricted our sample to mothers who were employed in the 12 months prior to the survey and to observations complete on all dependent variables and covariates. The final analytic sample included 7,844 person-wave observations for 2,933 mothers.

*Measures*

*Mental Health Outcomes.* Depression was measured using the Composite International Diagnostic Interview Short Form (CIDI-SF) (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). Mothers were asked whether, in past year, they experienced a major depressive episode (dysphoric mood or anhedonia) using the conservative estimate of likely being diagnosed as depressed. Those who reported feeling depressed or an inability to enjoy things that were usually pleasurable were asked a series of follow-up questions about more specific symptoms they experienced. These included losing interest, feeling tired, changes in weight, trouble sleeping, trouble concentrating, feeling worthless, and thinking about death. Mothers who experienced at least two of these seven symptoms were considered to have experienced a major depressive episode. For life dissatisfaction mothers were asked how satisfied they were with their lives overall. We constructed a dichotomous measure indicating mothers who reported feeling somewhat dissatisfied or very dissatisfied with their lives.

*Multiple Job Holding.* Our measure of multiple job holding was derived from each mother's response to questions asking whether there was a time in the past 12 months that she

had worked more than one regular job at the same time. Regular jobs included any work (including self-employment) for which the mother received a regular paycheck. Mothers who responded affirmatively were considered multiple job-holders. Information regarding these secondary jobs, such the number of hours, the precise timing, and the duration of such jobs, was unavailable.

*Covariates.* We controlled for a number of variables associated with multiple job holding, depression, and life dissatisfaction. Demographic and other time-stable characteristics included mother's race/ethnicity (non-Hispanic white [reference], non-Hispanic black, Hispanic, other race/ethnicity), age, education (less than high school [reference], high school or GED, some college, bachelor's degree or more), whether she was immigrant, and whether she lived with both biological parents at age 15. We also included the mother's cognitive score (Weschler Adult Intelligence Scale – Revised) and impulsivity score (six-item scale assessing self-control $\alpha$=.84 (Dickman, 1990)) which were measured at year 3 but are considered to be unchanging characteristics. Characteristics included either as time-invariant (pre-dating mental health and multiple job holding) or time-varying (in additional analyses) were: material hardship (10-item scale assessing items such as receipt of free food or meals and inability to fully pay rent [$\alpha$ = .67-.73, depending on wave]), public assistance receipt (receipt of any of the following: Food Stamps/Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, Supplemental Security Income, and unemployment insurance), housing assistance receipt (Section 8/public housing), health insurance coverage, whether she had a health problem that limited her ability to work, relationship status (single [reference], married, cohabiting), the number of children living in the household, and the number of other adults living in the household. In supplemental analyses (available upon request), we included controls for whether

the mother's parents experienced depression and found similar results (this variable was not included in the main models due to high levels of missing data).

*Other Employment Characteristics.* We also examined a number of employment characteristics beyond multiple job holding, which captured the intensity and quality of the mother's work. Work intensity variables included: total hours worked per week at all jobs (1-34, 35-44 [reference], 45+ hours)[1] and number of months worked last year. Indicators capturing job quality were measured with respect to the mother's main job, or the job for which she worked the most hours. These included: non-standard work schedule (1 = *worked evenings, nights, weekends, or variable schedule at least some of the time*, 0 = *always worked weekday schedule*), last year's earnings, and an indicator for whether a mother worked in the informal labor market. In supplemental analyses we included two additional work characteristics: occupation and workplace inflexibility (the average of mother's responses to three questions: 1) my shift and work schedule cause extra stress for me and my child; 2) where I work it is difficult to deal with child care problems during work hours; 3) in my work schedule I have enough flexibility to handle family needs (reverse coded)). Changes in data collection over survey waves resulted in high rates of missing data for these variables, thus, they are not included in our main analyses. Results were largely unchanged when these variables were included (available upon request).

*Statistical Analysis*

The analyses, conducted in Stata 15 (StataCorp LP, College Station, TX), utilized two modeling strategies. First, we ran ordinary least squares (OLS) models, pooling data across waves. OLS models with binary outcomes, termed linear probability models, assume the

[1] The timing of the measurement of work hours is somewhat imprecise. For single job-holders, work hours reflect the number of hours mothers usually worked at jobs held at the time of the survey. For multiple job-holders, work hours represent the total hours per week worked when they worked multiple jobs, which may not be at the time of the survey.

probability of depression or life dissatisfaction is a linear function of the covariates (Angrist & Pischke, 2009; Von Hippel, 2015). We prefer linear probability models because we retain all sample members for our second analysis strategy, individual fixed-effects models (a within-person change model). We also ran the analyses using logistic regression models, which yielded similar conclusions (available upon request).

In Model 1, we ran a pooled OLS with extensive covariates that predated our outcomes and independent variables of interest (with the exception of year, which is time-varying), including time and city fixed-effects (to control for city level factors, like social policies, that might be linked with both multiple job holding and mental health). This model ensures proper time ordering of our covariates, but may suffer from omitted variable bias. Model 2 is the same as Model 1, except we substituted time-varying covariates for the measures that change over time (e.g., material hardship, public assistance). By including these time varying covariates, we can control for factors that might affect both multiple job holding and mental health and change over time. However, these covariates are also endogenous (i.e., affect multiple job holding and are affected by multiple job holding), introducing bias into the estimates (Angrist & Pischke, 2009). In Models 1 and 2, we clustered our standard errors at the individual level to address non-independence of the observations.

To better address time constant omitted variable bias, in Model 3, we ran individual fixed-effects regressions, which exploit the longitudinal nature of the data to account for any unmeasured stable characteristics that might influence both multiple job holding and our outcomes (this model only included a control for year). Model 4 added (potentially endogenous) time-varying characteristics to the individual fixed-effects model. Although each model has advantages and drawbacks, together they help us gain a better understanding of the relationship

between multiple job holding and mental health. We ran these four models first without any additional work characteristics and then re-ran them including work characteristics to examine whether the associations between multiple job holding and mental health outcomes changed once measures of quality and intensity were controlled.

We also examined how the associations between multiple job holding and mental health varied by the quality (earnings, non-standard schedule, and informal work) and intensity (hours worked and months worked) of mothers' work. These analyses used Model 3 (individual fixed-effects) and included an interaction between multiple job holding and the work characteristic of interest; however, results using other models were substantively similar. In the model including an interaction between multiple job holding and earnings, we broke earnings into income tertiles: low (less than $12,740 annually), middle ($12,740 -$26,340) and high earners ($26,350 or more). Months worked was included as a binary variable (12 months of work versus less than 12 months of work) for use in the interaction model to retain sufficient sample in each category, as 63% of the sample worked all 12 months.

**Results**

Table 1 shows descriptive statistics for the full analytic sample and by multiple job holding. About 12% of mothers reported experiencing depression, and 10% reported life dissatisfaction. Fifteen-percent of mothers worked multiple jobs at some point in the past year. The sample was racially diverse; 77% of mothers were racial/ethnic minorities. In addition, the sample was relatively disadvantaged; 58% had no more than a high school education, 39% were single mothers, and 44% received some form of public assistance.

Table 1 also shows differences in characteristics by whether mothers worked multiple jobs. Multiple job-holders were significantly more likely than single job-holders to report

depression and life dissatisfaction. Mothers working multiple jobs also worked more months than single job-holders and were more likely to work 45 hour or more, to work non-standard schedules, and to engage in informal work. Additionally, multiple job-holders earned significantly less at their main job than single job-holders.

We first examined the association between multiple job holding and mental health. Table 2 presents results from the pooled OLS and individual fixed-effects models including all controls, with the exception of work characteristics. In Model 1, which included controls that predate our variables of interest and time and city fixed-effects, multiple job holding was associated with a four percentage point (pp) higher probability of both depression (95% confidence interval [CI] = 0.021, 0.067) and life dissatisfaction (CI = 0.013, 0.057). The associations were reduced in Model 2, which allowed covariates to vary over time (although they may be endogenous), and only the association between multiple job holding and depression was significant. The results from Model 3 (individual fixed-effects) and Model 4 (individual fixed-effects with time-varying covariates) showed similar findings. In Model 3, mothers working multiple jobs had a four pp higher probability of depression (CI = 0.018, 0.065) and a three pp higher probability of life dissatisfaction (CI = 0.008, 0.051), compared to mothers working one job, although the association with life dissatisfaction was no longer significant when time varying controls were included (Model 4).

To examine whether other work characteristics confound the association between multiple job holding and depression/life dissatisfaction, in Tables 3 and 4 we present results from models that included additional controls for the characteristics of mother's main jobs. The inclusion of additional work characteristics (hours, months, non-standard schedules, earnings, informal work) did little to attenuate the association between multiple job holding and mental

health. The exception is Model 2 (pooled OLS with time-varying covariates), where the inclusion of additional work characteristics (in particular working 45 hours or more per week) yielded an insignificant association between multiple job holding and depression. Although occasionally another work characteristic was significantly associated with either depression or life dissatisfaction, few were consistently associated with our outcomes across model specifications. The only work characteristic that was associated somewhat consistently with mental health was number of months worked. Working fewer months in the past year was associated with depression (Table 3, Models 1-4) and life dissatisfaction (Table 4, Models 2-3).

To further examine whether the findings for multiple job holding might vary by the intensity or quality of employment, Figure 1 shows results from analyses including interactions between multiple job holding and the additional work characteristic (using Model 3). The figure shows differences in the predicted probability of experiencing depression/life dissatisfaction for mothers working multiple jobs compared to the corresponding predicted probabilities for mothers working one job. We plot the difference in predicted probability estimates (probability of depression if multiple job holding minus probability of depression if single job holding) with 95% confidence intervals. If confidence intervals do not cross zero, differences are statistically significant. Table A.1 in the Appendix shows the estimates plotted in Figure 1 as well as estimates derived using Model 4 for comparison.

Although small sample sizes on the interactions mean that differences are not always significant (low power) and confidence intervals overlap across the point estimates (e.g. standard versus non-standard schedules), the interaction analyses suggest two general findings. First, the overall pattern of results for work intensity was mixed; the number of hours women worked moderated the associations between multiple job holding and mental health, but the number of

months did not. Second, the links between multiple job holding and mental health were stronger for those in arguably lower quality jobs (lower pay, non-standard schedules, informal work).

We first examined two measures of work intensity—work hours and number of months worked. For work hours, multiple job holding was associated with higher levels of depression and life dissatisfaction among mothers who worked 45 hours or more per week, but the difference was not significant for mothers who worked fewer than 45 hours. The results for months worked tell a different story. Multiple job holding was associated with higher levels of depression and life dissatisfaction, regardless of the number of months worked.

Turning to job quality, links between multiple job holding and depression/life dissatisfaction were somewhat stronger for those in arguably lower quality jobs (lower pay, non-standard schedules, informal work). Multiple job holding was associated with higher probabilities of depression and life dissatisfaction relative to single job holding for mothers in the lower end of the income distribution and among mothers working non-standard schedules. For mothers who worked in the informal labor market, those who held multiple jobs also had significantly higher levels of life dissatisfaction as compared to single job-holders. This was not the case for depression. Instead, multiple job holding was associated with higher levels of depression among mothers who worked only in the formal labor market, whereas the association was not significant among mothers who worked in the informal labor market. Nonetheless, the estimates for formal and informal work are quite similar, which suggests that type of work may not moderate the association between multiple job holding and depression. In sum, it appears that the association between multiple job holding and depression/life dissatisfaction may be somewhat stronger for those who work in lower quality jobs.

## Discussion

To our knowledge, this is the first study to examine the association between multiple job holding and mental health. We found that working multiple jobs was significantly associated with maternal depression in nearly all models. Although multiple job holding was associated with life dissatisfaction, this finding was not robust to the inclusion of time-varying (although likely endogenous) covariates. These findings align with previous research, which show negative associations between precarious and low-quality jobs and mental health, but expands the literature to highlight an understudied facet of employment—multiple job holding.

Why might multiple job holding be linked with mother's mental health? As noted earlier there are a number of potential pathways through which multiple job holding might affect depression and life dissatisfaction: time allocation (e.g., losing sleep or ability to engage health promoting activities), stress or role strain (e.g., balancing work and family), or possibly through the quality (e.g., earnings) of the types of job one holds when engaging in multiple job holding. Although we were not able to directly test the mechanisms that might link multiple job holding to maternal mental health, our examination of moderators of the association provide some insights into these relationships. We found that in general, mothers working multiple jobs who had lower quality main jobs (lower earnings, non-standard schedules, informal work) had higher levels of depression and life dissatisfaction, compared to otherwise similar single job-holders. These findings suggest that working multiple jobs because of inadequate earnings from main jobs may be especially detrimental to mothers' mental health. However, it is important to note that not all estimates were significant, we were unable to test multiple interactions (e.g., non-standard and low pay), and differences were generally small. Research that can further disentangle the relationship between multiple job holding, depression, and job quality is needed.

We also examined whether the time constraints posed by multiple job holding may be taxing for mothers and lead to higher probabilities of depression and life dissatisfaction. We found that multiple job holding was associated with higher risk of depression only among mothers working 45 hours or more at all jobs combined. This finding aligns with prominent stress and role strain models; mothers who work multiple jobs and whose hours exceed those of a typical full-time job likely face considerable stress and time constraints. We also examined whether months of work moderated the associations, and found there was no difference in terms of months for depression or life dissatisfaction. Unfortunately, we were not able to measure months of multiple job holding, but rather total months worked. Thus, although we found little evidence to suggest months of work moderated the associations between multiple job holding and mother's mental health, more precise measures are needed to determine these links.

Our analysis had some other limitations. First, the data included little information about women's secondary jobs, such as the precise timing and duration of those jobs or the reasons for multiple job holding. These details could provide more nuanced information about the relationship between multiple job holding and mental health. Second, although individual fixed-effects models account for time-invariant unobserved characteristics, they cannot account for unobserved characteristics that vary over time and may be associated with both multiple job holding and depression. Although we included a number of time-varying covariates in our models, these analyses were limited, as many of these covariates were endogenous. In addition, individual fixed-effects models cannot rule out the possibility of reverse causation. Although it is possible working a full-time job is challenging for mothers experiencing depression, which may lead mothers to piece together multiple part-time jobs, we believe it is unlikely that depression would lead mothers to work 45 hour or more at all jobs combined, which most multiple job-

holders do.

Finally, our sample is not nationally representative. Thus, we cannot generalize these findings to all women or all mothers. Nonetheless, understanding the mental health consequences of multiple job holding for the low-income, urban mothers represented by the FFCWS data is important, as recent labor market growth has been concentrated in low-wage jobs. Additionally, for low-income mothers, secondary jobs may provide economic resources to meet the material demands of family life and to increase investments in health (e.g., better diet and better health care), but income from all jobs combined may still fall short. Crafting effective interventions requires future research examining how well multiple job holding helps mothers meet their income needs and the pathways through which mental health may be affected.

**Implications for Practice and/or Policy**

The expansion of low-wage jobs and alternative work arrangements such as temporary and contract work means that many jobs are unstable, insecure, and offer low pay. These conditions may lead workers to take on second jobs in order to minimize risk in an unstable economy and earn enough to meet expenses, which might affect their mental health and in turn, affect the children living in these households. Our findings suggest that research focused on the social correlates of health needs to consider the role of multiple job holding, especially given these changes in the nature of paid work. The findings also suggest that multiple job holding may be a factor that mental health practitioners should consider when working with low-income populations. More research is needed to understand whether and how other policies, such as those regarding the minimum wage, worker protections from volatile schedules, child care assistance, or public assistance might be influencing multiple job holding and in turn, mental health.

## Tables and Figures

Table 1. Sample Characteristics by Multiple Job Holding: Fragile Families and Child Wellbeing Study, United States 2001-2003 through 2014-2017

| | Full Sample | | Multiple Jobs | | Single Jobs | | |
|---|---|---|---|---|---|---|---|
| | % or M | SD | % or M | SD | % or M | SD | *p*-value |
| Worked multiple jobs | 15 | | | | | | |
| Depression | 12 | | 17 | | 11 | | .00 |
| Life dissatisfaction | 10 | | 14 | | 9 | | .00 |
| **Time-stable covariates** | | | | | | | |
| Race/ethnicity | | | | | | | |
| White, non-Hispanic | 23 | | 24 | | 23 | | .61 |
| Black, non-Hispanic | 51 | | 55 | | 50 | | .01 |
| Hispanic | 23 | | 19 | | 23 | | .00 |
| Other race/ethnicity | 3 | | 3 | | 3 | | .47 |
| Immigrant | 11 | | 7 | | 12 | | .00 |
| Age | 25.03 | 5.84 | 24.61 | 5.56 | 25.08 | 5.89 | .01 |
| Education | | | | | | | |
| Less than high school | 25 | | 24 | | 25 | | .30 |
| High school diploma | 33 | | 31 | | 33 | | .27 |
| Some college | 30 | | 34 | | 29 | | .00 |
| Bachelor's degree or more | 12 | | 10 | | 13 | | .01 |
| Lived with bio-parents at age 15 | 42 | | 37 | | 43 | | .00 |
| Cognitive score (range 0-15) | 7.09 | 2.51 | 7.22 | 2.44 | 7.06 | 2.52 | .04 |
| Impulsivity (range 1-4) | 1.99 | 0.60 | 2.02 | 0.62 | 1.99 | 0.60 | .07 |
| **Time-varying covariates** | | | | | | | |
| Material hardship (range 0-10) | 1.21 | 1.63 | 1.75 | 1.86 | 1.12 | 1.56 | .00 |
| Public assistance | 44 | | 50 | | 43 | | .00 |
| Public housing | 18 | | 16 | | 18 | | .08 |
| Health insurance | 81 | | 78 | | 81 | | .01 |
| Health limits work | 8 | | 10 | | 7 | | .00 |
| Marital status | | | | | | | |
| Single | 39 | | 48 | | 38 | | .00 |
| Married | 37 | | 28 | | 38 | | .00 |
| Cohabiting | 24 | | 23 | | 24 | | .66 |
| No. of children in household | 2.43 | 1.33 | 2.46 | 1.38 | 2.42 | 1.31 | .31 |
| No. of other adults in household | 0.45 | 0.84 | 0.46 | 0.83 | 0.45 | 0.84 | .63 |
| Total hours at all jobs | | | | | | | |
| 1-34 hours | 24 | | 11 | | 26 | | .00 |
| 35-44 hours | 51 | | 12 | | 58 | | .00 |
| 45+ hours | 25 | | 76 | | 16 | | .00 |
| Months worked | 10.00 | 3.32 | 10.48 | 3.41 | 9.91 | 3.41 | .00 |
| Non-standard work schedule | 65 | | 72 | | 64 | | .00 |
| Earnings from main job (in 1000s) | 26.58 | 53.46 | 22.20 | 19.28 | 27.28 | 57.10 | .00 |
| Informal work | 14 | | 26 | | 12 | | .00 |
| Number of observations | 7,844 | | 1,164 | | 6,680 | | |

Note: Data was pooled across the 3-, 5-, 9-, and 15-year surveys. The p-value column denotes statistical differences between multiple job holding and single job holding observations.

Table 2. Models Estimating Maternal Mental Health as a Function of Multiple Job Holding: Fragile Families and Child Wellbeing Study, United States 2001-2003 through 2014-2017

| | Pooled OLS | | Fixed-Effects | |
|---|---|---|---|---|
| | Model 1<br>b (95% CI) | Model 2<br>b (95% CI) | Model 3<br>b (95% CI) | Model 4<br>b (95% CI) |
| Depression | 0.044*** | 0.027* | 0.041** | 0.034** |
| | (0.021, 0.067) | (0.005, 0.049) | (0.018, 0.065) | (0.011, 0.057) |
| Life Dissatisfaction | 0.035** | 0.017 | 0.029* | 0.021 |
| | (0.013, 0.057) | (-0.004, 0.038) | (0.008, 0.051) | (-0.000, 0.043) |

Note: Data was pooled across the 3-, 5-, 9-, and 15-year surveys. Multiple job holding coefficients from OLS models shown. CI = confidence interval. Model 1 included all time-invariant covariates (measured prior to multiple job holding/mental health measures) except work characteristics. Model 2 included the same set of controls as Model 1, but included time-varying covariates where applicable. Model 3 included individual fixed-effects controlling for year fixed-effects. Model 4 included individual fixed-effects controlling for year fixed-effects and including time-varying covariates. Sample size was n = 2,933 (7,844 observations). *$p$<.05; **$p$<.01; ***$p$<.001

Table 3. Models Estimating Maternal Depression as a Function of Multiple Job Holding, with Controls for Work Characteristics: Fragile Families and Child Wellbeing Study, United States 2001-2003 through 2014-2017

| | Pooled OLS | | Fixed-Effects | |
|---|---|---|---|---|
| | Model 1<br>b (95% CI) | Model 2<br>b (95% CI) | Model 3<br>b (95% CI) | Model 4<br>b (95% CI) |
| Worked multiple jobs | 0.044*** | 0.009 | 0.038** | 0.030** |
| | (0.021, 0.067) | (-0.015, 0.034) | (0.011, 0.064) | (0.003, 0.056) |
| Total hours at all jobs (ref. 35-44 hours) | | | | |
| No work | -0.015 | | | |
| | (-0.048, 0.018) | | | |
| 1-34 hours | -0.008 | -0.003 | -0.009 | -0.009 |
| | (-0.031, 0.015) | (-0.021, 0.015) | (-0.031, 0.014) | (-0.032, 0.013) |
| 45+ hours | 0.016 | 0.029** | 0.007 | 0.008 |
| | (-0.010, 0.041) | (0.008, 0.049) | (-0.016, 0.030) | (-0.015, 0.031) |
| Months worked | -0.003* | -0.004** | -0.004** | -0.003* |
| | (-0.006, -0.000) | (-0.006, -0.001) | (-0.007, -0.001) | (-0.006, -0.001) |
| Non-standard work schedule | 0.011 | 0.004 | 0.005 | 0.002 |
| | (-0.006, 0.028) | (-0.012, 0.019) | (-0.015, 0.024) | (-0.017, 0.021) |
| Earnings from main job | -0.000 | 0.000 | 0.000 | 0.000 |
| | (-0.001, 0.001) | (-0.000, 0.000) | (-0.000, 0.000) | (-0.000, 0.000) |
| Informal work | -0.007 | 0.024 | 0.010 | 0.005 |
| | (-0.030, 0.018) | (-0.001, 0.049) | (-0.015, 0.035) | (-0.020, 0.030) |
| Constant | 0.022 | 0.054 | 0.116 | 0.111 |
| | (-0.090, 0.133) | (-0.056, 0.163) | (0.041, 0.190) | (0.030, 0.191) |
| R-squared | 0.054 | 0.102 | 0.009 | 0.031 |

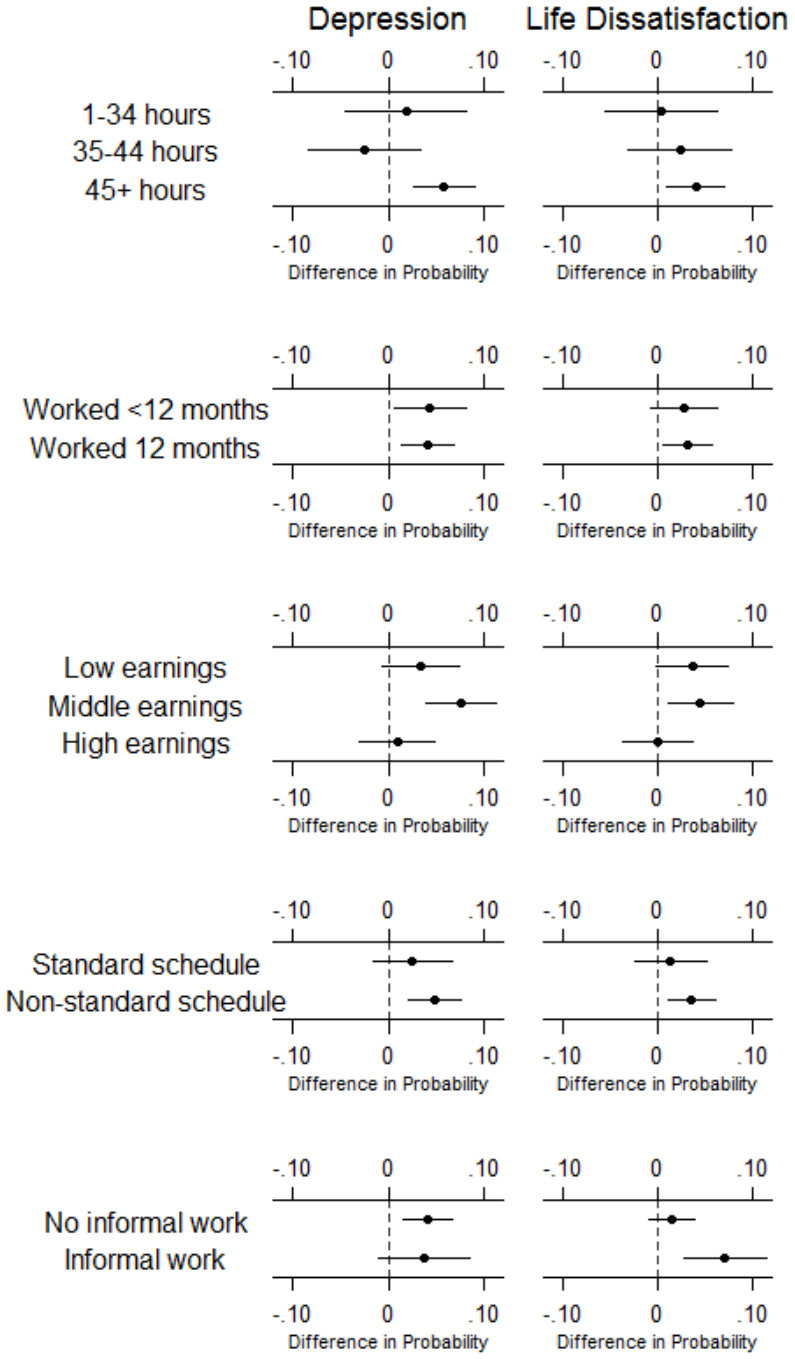
Note: Data was pooled across the 3-, 5-, 9-, and 15-year surveys. Work characteristic coefficients and 95% confidence intervals shown. Model 1 included all time-stable covariates (measured prior to multiple job holding/mental health measures). Model 2 included the same set of controls as Model 1, but included time-varying covariates where applicable. Model 3 included time-varying work characteristics, individual fixed-effects, and year fixed-effects. Model 4 included individual fixed-effects controlling for year fixed-effects and including time-varying work characteristics and other covariates. Sample was restricted to women who worked in the 12 months prior to survey, but hours at main job included a "no work" category in Model 1 because employment characteristics were measured at the 1-year survey. Sample size was n = 2,933 (7,844 observations). *$p$<.05; **$p$<.01; ***$p$<.001

Table 4. Models Estimating Life Dissatisfaction as a Function of Multiple Job Holding, with Controls for Work Characteristics: Fragile Families and Child Wellbeing Study, United States 2001-2003 through 2014-2017

| | Pooled OLS | | Fixed-Effects | |
|---|---|---|---|---|
| | Model 1<br>b (95% CI) | Model 2<br>b (95% CI) | Model 3<br>b (95% CI) | Model 4<br>b (95% CI) |
| Worked multiple jobs | 0.036** | 0.017 | 0.032* | 0.023 |
| | (0.014, 0.058) | (-0.006, 0.039) | (0.007, 0.056) | (-0.002, 0.047) |
| Total hours at all jobs (ref. 35-44 hours) | | | | |
| No work | -0.005 | | | |
| | (-0.034, 0.025) | | | |
| 1-34 hours | -0.019 | -0.006 | -0.013 | -0.014 |
| | (-0.040, 0.001) | (-0.023, 0.010) | (-0.034, 0.008) | (-0.035, 0.007) |
| 45+ hours | -0.022* | -0.004 | -0.008 | -0.007 |
| | (-0.045, -0.000) | (-0.021, 0.014) | (-0.029, 0.014) | (-0.028, 0.015) |
| Months worked | 0.000 | -0.003** | -0.003* | -0.002 |
| | (-0.002, 0.003) | (-0.006, -0.001) | (-0.005, -0.000) | (-0.004, 0.001) |
| Non-standard work schedule | 0.021* | 0.008 | 0.014 | 0.011 |
| | (0.005, 0.037) | (-0.006, 0.022) | (-0.004, 0.032) | (-0.007, 0.029) |
| Earnings from main job | -0.000 | -0.000 | -0.000 | -0.000 |
| | (-0.001, 0.000) | (-0.000, 0.000) | (-0.000, 0.000) | (-0.000, 0.000) |
| Informal work | 0.000 | 0.027* | 0.025* | 0.022 |
| | (-0.023, 0.022) | (0.005, 0.049) | (0.002, 0.048) | (-0.001, 0.045) |
| Constant | -0.082 | 0.005 | 0.030 | 0.054 |
| | (-0.173, 0.010) | (-0.082, 0.097) | (-0.039, 0.099) | (-0.021, 0.130) |
| R-squared | 0.054 | 0.095 | 0.006 | 0.023 |

Note: Data was pooled across the 3-, 5-, 9-, and 15-year surveys. Work characteristic coefficients and 95% confidence intervals shown. Model 1 included all time-stable covariates (measured prior to multiple job holding/mental health measures). Model 2 included the same set of controls as Model 1, but included time-varying covariates where applicable. Model 3 included time-varying work characteristics, individual fixed-effects, and year fixed-effects. Model 4 included individual fixed-effects controlling for year fixed-effects and including time-varying work characteristics and other covariates. Sample was restricted to women who worked in the 12 months prior to survey, but hours at main job included a "no work" category in Model 1 because employment characteristics were measured at the 1-year survey. Sample size was n = 2,933 (7,844 observations). *$p$<.05; **$p$<.01; ***$p$<.001

Figure 1. Difference in Probability of Depression and Life Dissatisfaction for Multiple Job-holders Compared to Single Job-holders, by Work Characteristics of Main Job: Fragile Families and Child Wellbeing Study, United States 2001-2003 through 2014-2017




Note: Data was pooled across the 3-, 5-, 9-, and 15-year surveys. 95% confidence intervals are shown. When confidence intervals do not cross zero, differences are statistically significant.

**References**


Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton, NJ: Princeton University Press.

Australian Bureau of Statistics. (2009). *People with more than one job* (Australian Social Trends No. September) (pp. 1–6). Australian Bureau of Statistics.

Benach, J., & Muntaner, C. (2007). Precarious employment and health: developing a research agenda. *Journal of Epidemiology and Community Health*, *61*(4), 276–277. https://doi.org/10.1136/jech.2005.045237

Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G., & Muntaner, C. (2014). Precarious Employment: Understanding an Emerging Social Determinant of Health. *Annual Review of Public Health*, *35*(1), 229–253. https://doi.org/10.1146/annurev-publhealth-032013-182500

Bianchi, S. M., & Milkie, M. A. (2010). Work and Family Research in the First Decade of the 21st Century. *Journal of Marriage and Family*, *72*(3), 705–725. https://doi.org/10.1111/j.1741-3737.2010.00726.x

Bildt, C., & Michélsen, H. (2002). Gender differences in the effects from working conditions on mental health: a 4-year follow-up. *International Archives of Occupational and Environmental Health*, *75*(4), 252–258. https://doi.org/10.1007/s00420-001-0299-8

Bureau of Labor Statistics, U.S. Department of Labor. (2009). *Labor force participation rate of women by age of youngest child, March 1975-2007*. Washington D.C.: The Editors Desk, US Bureau of Labor Statistics.

Bureau of Labor Statistics, U.S. Department of Labor. (2017). *Employment Characteristics of Families-2016* (News Release No. USDL-17-0444). Washington D.C.: U.S. Bureau of Labor Statistics.

Coyne, J. C. (1976). Depression and the response of others. *Journal of Abnormal Psychology*, *85*(2), 186–193. https://doi.org/10.1037/0021-843X.85.2.186

Dickman, S. J. (1990). Functional and dysfunctional impulsivity: Personality and cognitive correlates. *Journal of Personality and Social Psychology*, *58*, 95–102. https://doi.org/10.1037/0022-3514.58.1.95

Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin*, *108*(1), 50–76. https://doi.org/10.1037/0033-2909.108.1.50

Elder, G. H. (1998). The life course and human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology. Volume 1: Theoretical models of human development* (pp. 939–991). New York: Wiley.

Enchautegui, M. E. (2013). *Nonstandard Work Schedules and the Well-Being of Low-Income Families* (Low-Income Working Families No. Paper 26). Washington D.C.: Urban Institute.

Goode, W. J. (1960). A Theory of Role Strain. *American Sociological Review*, *25*(4), 483–496. https://doi.org/10.2307/2092933

Goodman, S. H., & Tully. (2006). Depression in women who are mothers: an integrative model of risk for the development of psychopathology in their sons and daughters. In C. L. Keyes & S. H. Goodman, *Women and Depression: A Handbook for the Social, Behavioral, and Biomedical Sciences* (pp. 241–282). New York: Cambridge University Press.

Goodman, W. B., Crouter, A. C., & The Family Life Project Key Investigators. (2009). Longitudinal Associations between Maternal Work Stress, Negative Work-Family

Spillover, and Depressive Symptoms. *Family Relations*, *58*(3), 245–258. https://doi.org/10.1111/j.1741-3729.2009.00550.x

Henly, J. R., & Lambert, S. J. (2014). Unpredictable Work Timing in Retail Jobs: Implications for Employee Work-Life Conflict. *Industrial and Labor Relations Review*, *67*(3), 986–1016. https://doi.org/10.1177/0019793914537458.

Hochschild, A. R. (2003). *The Second Shift*. New York: Penguin Books.

Howard, J. (2017). Nonstandard work arrangements and worker health and safety. *American Journal of Industrial Medicine*, *60*(1), 1–10. https://doi.org/10.1002/ajim.22669

Jacobs, A. W., Hill, T. D., Tope, D., & O'Brien, L. K. (2016). Employment Transitions, Child Care Conflict, and the Mental Health of Low-Income Urban Women With Children. *Women's Health Issues*, *26*(4), 366–376. https://doi.org/10.1016/j.whi.2016.05.003

Kessler, R. C., Andrews, G., Mroczek, D., Ustun, B., & Wittchen, H.-U. (1998). The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *International Journal of Methods in Psychiatric Research*, *7*(4), 171–185. https://doi.org/10.1002/mpr.47

Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, *20*(5), 561–592. https://doi.org/10.1016/S0272-7358(98)00100-7

Mai, Q. D., Hill, T. D., Vila-Henninger, L., & Grandner, M. A. (2018). Employment insecurity and sleep disturbance: Evidence from 31 European countries. *Journal of Sleep Research*, *0*(0), e12763. https://doi.org/10.1111/jsr.12763

Marucci-Wellman, H. R., Lin, T.-C., Willetts, J. L., Brennan, M. J., & Verma, S. K. (2014). Differences in Time Use and Activity Patterns When Adding a Second Job: Implications

for Health and Safety in the United States. *American Journal of Public Health*, *104*(8), 1488–1500. https://doi.org/10.2105/AJPH.2014.301921

Marucci-Wellman, H. R., Lombardi, D. A., & Willetts, J. L. (2016). Working multiple jobs over a day or a week: Short-term effects on sleep duration. *Chronobiology International*, *33*(6), 630–649. https://doi.org/10.3109/07420528.2016.1167717

Marucci-Wellman, H. R., Willetts, J. L., Lin, T.-C., Brennan, M. J., & Verma, S. K. (2014). Work in Multiple Jobs and the Risk of Injury in the US Working Population. *American Journal of Public Health*, *104*(1), 134–142. https://doi.org/10.2105/AJPH.2013.301431

National Institute of Mental Health. (2017, November). Major Depression. Retrieved June 14, 2018, from https://www.nimh.nih.gov/health/statistics/major-depression.shtml

Paxson, C. H., & Sicherman, N. (1996). The Dynamics of Dual Job Holding and Job Mobility. *Journal of Labor Economics*, *14*(3), 357–393.

Pilkauskas, N., Waldfogel, J., & Brooks-Gunn, J. (2016). Maternal labor force participation and differences by education in an urban birth cohort study - 1998-2010. *Demographic Research*, *34*(14), 407–420.

Radke-Yarrow, M., & Klimes-Dougan, B. (2002). Parental depression and offspring disorders: A developmental perspective. In S. H. Goodman & I. H. Goodman (Eds.), *Children of depressed parents: Mechanisms of risk and implications for treatment* (pp. 155–174). Washington D.C.: American Psychological Association.

Raver, C. C. (2003). Does Work Pay Psychologically as Well as Economically? The Role of Employment in Predicting Depressive Symptoms and Parenting Among Low-Income Families. *Child Development*, *74*(6), 1720–1736. https://doi.org/10.1046/j.1467-8624.2003.00634.x

Strazdins, L., Clements, M. S., Korda, R. J., Broom, D. H., & D'Souza, R. M. (2006). Unsociable Work? Nonstandard Work Schedules, Family Relationships, and Children's Well-Being. *Journal of Marriage and Family*, *68*(2), 394–410. https://doi.org/10.1111/j.1741-3737.2006.00260.x

Taylor, D. E., & Sekscenski, E. S. (1982). Workers on long schedules, single and multiple jobholders. *Monthly Labor Review*, (May), 47–53.

Turney, K. (2011). Maternal Depression and Childhood Health Inequalities. *Journal of Health and Social Behavior*, *52*(3), 314–332. https://doi.org/10.1177/0022146511408096

Usdansky, M., Gordon, R., Wang, X., & Gluzman, A. (2012). Depression Risk Among Mothers of Young Children: The Role of Employment Preferences, Labor Force Status and Job Quality. *Journal of Family and Economic Issues*, *33*(1), 83–94. https://doi.org/10.1007/s10834-011-9260-5

Von Hippel, P. (2015, July 5). Linear vs. Logistic Probability Models: Which is Better, and When? Retrieved from https://statisticalhorizons.com/linear-vs-logistic

## Appendix

Table A.1. Difference in Probability of Depression and Life Dissatisfaction for Multiple Job-holders Compared to Single Job-holders, by Work Characteristics of Main Job, Fixed Effects Models

| | Depression | | Life Dissatisfaction | |
|---|---|---|---|---|
| | Model 3 | Model 4 | Model 3 | Model 4 |
| 1-34 hours | 0.02 | 0.02 | 0.00 | -0.00 |
| | (-0.04, 0.08) | (-0.04, 0.09) | (-0.05, 0.06) | (-0.06, 0.06) |
| 35-44 hours | -0.03 | -0.03 | 0.02 | 0.02 |
| | (-0.08, 0.03) | (-0.08, 0.03) | (-0.03, 0.08) | (-0.04, 0.07) |
| 45+ hours | 0.06** | 0.05** | 0.04** | 0.03+ |
| | (0.03, 0.09) | (0.02, 0.08) | (0.01, 0.07) | (-0.00, 0.06) |
| <12 months of work | 0.04* | 0.03 | 0.03 | 0.01 |
| | (0.01, 0.08) | (-0.01, 0.07) | (-0.01, 0.06) | (-0.02, 0.05) |
| 12 months of work | 0.04** | 0.03+ | 0.03* | 0.02 |
| | (0.01, 0.07) | (-0.00, 0.06) | (0.01, 0.06) | (-0.01, 0.05) |
| Low earnings | 0.03+ | 0.03 | 0.04+ | 0.03 |
| | (-0.01, 0.07) | (-0.01, 0.07) | (-0.00, 0.07) | (-0.01, 0.07) |
| Middle earnings | 0.08*** | 0.06** | 0.05** | 0.03 |
| | (0.04, 0.11) | (0.02, 0.10) | (0.01, 0.08) | (-0.01, 0.06) |
| High earnings | 0.01 | -0.00 | 0.00 | -0.01 |
| | (-0.03, 0.05) | (-0.04, 0.04) | (-0.04, 0.04) | (-0.05, 0.03) |
| Standard schedule | 0.03 | 0.01 | 0.01 | 0.00 |
| | (-0.02, 0.07) | (-0.03, 0.06) | (-0.02, 0.05) | (-0.04, 0.04) |
| Non-standard sched. | 0.05** | 0.04* | 0.04** | 0.02 |
| | (0.02, 0.07) | (0.01, 0.07) | (0.01, 0.06) | (-0.00, 0.05) |
| No informal work | 0.04** | 0.03* | 0.02 | 0.01 |
| | (0.02, 0.07) | (0.00, 0.06) | (-0.01, 0.04) | (-0.02, 0.03) |
| Informal work | 0.04+ | 0.02 | 0.07** | 0.06* |
| | (-0.01, 0.08) | (-0.02, 0.07) | (0.03, 0.12) | (0.01, 0.10) |

*Note*: The difference in predicted probability (probability for multiple job-holders minus probability for single job-holders) shown. 95% confidence intervals in parentheses. Model 3 includes person-specific fixed-effects controlling for year fixed-effects (also shown in Figure 1). Model 4 included person-specific fixed-effects controlling for year fixed-effects and including time-varying covariates. +p<.10; *p<.05; **p<.01; ***p<.001