Mismatch Stress:
The Effects of Unrealized Work Time Preferences on Health*

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Abstract

Is the mismatch between actual and preferred work hours associated with health? We evaluate two types of mismatch: *Overemployment* refers to workers' preference for fewer hours, while *underemployment* refers to the preference for more hours. We analyze data from a 4-wave longitudinal study of Canadian workers (2011-2017) using fixed-effects models to test how mismatch interacts with actual work hours—measured as part-time, full-time, or overwork (50+ hours)—and predict changes in three health-related outcomes: distress, sleep problems, and physical symptoms. With individuals who work full-time and prefer those hours as the reference, we document four distinct patterns: (1) the overemployed who work full-time or overwork report increased levels of all three health outcomes, and their elevated exposure to stressors of job pressure and work-to-family conflict fully explain these patterns; (2) both overemployed and underemployed part-time workers report increased distress only, and those effects holds net of adjustments for stressors; (3) part-time workers who prefer those hours report increased distress, sleep problems, and physical complaints—with their lower exposure to stressors acting as a suppressor; and (4) overworked individuals who prefer those hours report increased sleep problems, and their elevated stress exposures explain this pattern. Collectively, our observations make novel contributions to understanding the different health effects of overemployment versus underemployment and demonstrate the divergent influences of work-family stressors as explanations.

Keywords: work hour mismatch, work hour preferences, work-to-family conflict, overemployment, underemployment, distress, sleep problems, health, overwork, part-time

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The amount of time devoted to work—and the fit versus mismatch of those actual hours with worker preferences—are important features of working life that can shape health. Although full-time status has long been considered the norm, and has been supported by legal codes (Lee, McCann, and Messenger 2007), the proportion of workers reporting that they work relatively short or long workweeks has increased between 1970 and 2000 (Jacobs and Gerson 2004), indicating "an overall trend towards greater diversification of weekly work schedules" (OECD 2004:40). More recently, *overwork*—which Cha and Weeden (2014) define as working 50 hours or more per week—has become increasingly prevalent in many advanced industrial Asian countries, such as Japan and South Korea (Wooden and Drago 2007). Western countries, including the United States, Australia, New Zealand, and the United Kingdom, have also shown similar trends, but to a slightly lesser extent than those East Asian countries (Wooden and Drago 2007). Prior analyses of working Canadians find that roughly 17 percent of Canadians work 50 or more hours per week—and this overwork is linked to job pressure and strains in the work-family interface (Schieman 2013; Schieman and Glavin 2016; Schieman and Young 2015).

A number of factors contribute to the growing trend of overwork. Some scholars attribute the prevalence of overwork to increased domestic and international competition (Bluestone and Rose 1997; Kalleberg 2007), changes in organizational cultures that promote competition among workers (Landers, Rebitzer, and Taylor 1996), the emergence of the "24/7" economy (Presser 2005), and expanding income inequality (Kuhn and Lozano 2008). Although these studies demonstrate that macro-economic and structural shifts in work organizations are contributing to the greater prevalence of overwork (Roth 2006), prior research demonstrates that the normative aspects of work roles are also influential. In particular, "ideal worker" norms

suggest that employers view employees who overwork as more productive, committed, and devoted to the organization (Blair-Loy 2003; Hochschild 1997; Williams 2000). Moreover, conforming to the ideal worker norm might be perceived to expedite upward mobility in careers while simultaneously enhancing financial security and recognition from colleagues (Blair-Loy 2003; Landers, Rebitzer, and Taylor 1996). By contrast, violating the ideal worker norm signals a lack of commitment that, in turn, might disadvantage workers in advancement opportunities. At the same time, globalization, heightened competition, and the proliferation of communication technologies have increased pressure on organizations to adapt to the changing environment (Kauhanen and Nätti 2015). Traditional full-time status has therefore given way to more "flexible" arrangements, such as part-time status, which make it easier for organizations to adjust to changing demands and economic fluctuations (Kauhanen and Nätti 2015).

Alongside actual hours, work hour *preferences* represent a critical feature of the narrative about working time and its potential effects. Work hour preferences reflect the appraisal and desire for particular work-time arrangements (Otterbach 2010). Interest in the mismatch between actual and preferred hours has increased because of the connections to organizational, family, and individual outcomes (Dembe et al. 2005; Galinsky, Kim, and Bond 2001; Prause and Dooley 1997;). We propose that actual work hours combine with preferences to shape health, contrasting *overemployment* (workers' preference for fewer hours) versus *underemployment* (workers' preference for more hours) with "matched/full-time" as the reference standard (Reynolds 2014; Reynolds and Aletraris 2006; 2010). We ask three central research questions: (1) How do actual work hours and work hour preferences interact to shape health-related outcomes over time? (2) How do stress exposures influence those patterns; and (3) Do any observed patterns differ across the distinct combinations of actual and preferred work

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hours? To help organize the conceptual and theoretical rationale behind our hypotheses, we articulate different scenarios of actual and preferred hour combinations (see Table 1).

[INSERT TABLE 1 ABOUT HERE]

BACKGROUND AND HYPOTHESES

The Preference for Fewer Hours: Overemployment and its Discontents

The preference to work fewer hours—or overemployment—represents a primary form of mismatch that might have harmful implications for health. Person-Environment Fit Theory (P-E Fit) is one of the main theoretical frameworks that scholars have applied to understand these potential adverse consequences (Kristof-Brown, Zimmerman, and Johnson 2005). For example, Angrave and Charlwood (2015) argued that the intersection between actual and preferred work hours reflects the fit between workers' preferences and job characteristics. P-E fit theory predicts that workers should experience higher levels of job performance and health when there is a greater fit between their preferences and job characteristics (Kristof-Brown, Zimmerman, and Johnson 2005). By contrast, work hour mismatch represents a key form of role stress which is potentially associated with other stressors that, in turn, should be associated with poorer health.

Recent studies of overemployment generally find consistent results for people who work long hours. In their analyses of 18 waves of the British Household Panel Survey (BHPS), Angrave and Charlwood (2015) found that the overemployed report lower levels of psychological well-being, job satisfaction, and life satisfaction—and that pattern generalized across the following categories of actual work hours: 35-40, 41-49, and 50-plus. In a study that analyzed the 2001-2005 Household, Income and Labour Dynamics in Australia survey (HILDA), Wooden and colleagues (2009) observed similar patterns: The overemployed reported lower

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levels of job satisfaction and life satisfaction in the following categories of actual work hours: 35-40, 41-49, and 50-plus. In another study that examined the European Social Survey (ESS), De Moortel and colleagues (2017) found that overemployment was associated with poorer mental well-being among individuals who worked more than 40 hours per week. Although it is less consistent, other evidence suggests that overemployment is also associated with deleterious outcomes for people who work relatively fewer hours. For instance, studies have established that overemployed men report lower levels of job satisfaction and life satisfaction (Angrave and Charlwood 2015; Wooden, Warren, and Drago 2009) and psychological well-being (Angrave and Charlwood 2015) when they work fewer than 35 hours per week. Similar patterns have also been observed for women who work fewer than 21 hours per week (Angrave and Charlwood 2015). Collectively, these ideas and prior findings provide a rationale for the *Overemployed-Mismatch Strain Hypothesis*; we distinguish between three variants of this hypothesis for individuals who are overworked, working full-time (the standard), or working part-time, with the expected size of the deleterious effects from most to least severe:

(1) *Overemployed* individuals who *overwork* (50-plus) should report increased distress, sleep problems, and physical symptoms compared to the reference group (actual hours match preferences/full-time status).

(2) *Overemployed* individuals who work *full-time* should report increased distress, sleep problems, and physical symptoms compared to the reference group.

(3) *Overemployed* individuals who work *part-time* should report increased distress, sleep problems, and physical symptoms compared to the reference group.

The Preference for More Hours: Underemployment and its Discontents

P-E Fit theory predicts that underemployment should lead to deleterious health outcomes. However, prior studies provide mixed results when examining subjective well-being.

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For instance, Wooden and colleagues (2009) found that the underemployed report lower levels of job satisfaction and life satisfaction, but only among individuals who work fewer than 35 hours per week. Although Angrave and Charlwood (2015) observed the similar pattern for life satisfaction, they found little evidence that underemployment was associated with lower levels of job satisfaction for those who worked fewer than 35 hours. Others demonstrate that underemployment is associated negatively with psychological health among women who work fewer than 35 hours (Angrave and Charlwood 2015; De Moortel et al. 2017). In sum, P-E Fit theory and prior evidence provides a rationale for the *Underemployed-Mismatch Strain Hypothesis*: Individuals who desire more work hours (*underemployed*) and work part-time should experience increased distress, sleep problems, and physical symptoms compared to the reference group (matched/full-time). In this scenario, we focus on the experience of underemployment among part-time workers because there are substantially fewer cases with combinations of underemployment and full-time (5.30 percent) or overwork (2.62 percent).

When Working Long Hours is the Ideal: The Effect of Preferring Overwork

We focus most of our attention on the mismatch between actual work hours and preferred work hours—either overemployment or underemployment. However, there is another less prevalent possibility that involves working long hours, or overwork, and the fact that some workers actually prefer those work hour arrangements. To theorize about this less common but compelling *matched/overwork* scenario, we draw from the literature on the concept of "workaholism." Scholars have disagreed about the definition of workaholism; the form and content of that definition ultimately determines whether workaholism is viewed *positively* (Baruch 2011) or *negatively* (Schaufeli, Taris, and Bakker 2008). Although scholars have

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referred to workaholism as a behavior pattern (Scott, Moore, and Miceli 1997) or a "syndrome" (Aziz and Zickar 2006), most studies have defined workaholism as an addiction to work (Clark et al. 2016, also see Ng, Sorensen, and Feldman 2007; Porter 2006; Robinson 2000), which "involves compulsion and preoccupation regarding one's work [such that] workaholics are obsessed with work, stemming from an inner compulsion or a need to work that cannot be resisted or controlled" (Clark et al. 2016:1838; also see Oates 1971; Schaufeli, Taris, and Bakker 2008; Spence and Robbins 1992). Workaholics tend to constantly think about work—even when they are not working—and have difficulties disengaging from work (Schaufeli, Taris, and Bakker 2008; Scott, Moore, and Miceli 1997; Spence and Robbins 1992). Excessive involvement in work that is due to internal passion or love of work should be distinguished from that due to external factors (Schaufeli, Taris, and Bakker 2008; Sussman 2012). That is, workaholics tend to work excessively not for external reasons such as those related to financial concerns, poor marital relationships, or pressure by their organizations (Clark et al. 2016). Instead, workaholic behavior is voluntary and goes beyond what is explicitly expected of workers (Robinson 1998; Schaufeli, Taris, and Bakker 2008; Scott, Moore, and Miceli 1997). Despite the purported downsides, Angrave and Charlwood (2015) observed that the overworked report higher job satisfaction among those who also preferred to overwork. However, Wooden and colleagues (2009) found no evidence that this combination was associated with job satisfaction.

Given that workaholics tend to work longer and harder than others, they often miss family events, work on weekends, and bring work home with them (Clark et al. 2016). They are also likely to blur the lines between work and nonwork domains (Bonebright, Clay, and Ankenmann 2000; Ng, Sorensen, and Feldman 2007), which, in turn, can generate detrimental health outcomes (Glavin, Schieman, and Reid 2011). The existing literature has found that

workaholism is associated with lower levels of mental health (Taris, Schaufeli, and Verhoeven 2005), physical health (Kanai, Wakabayashi, and Fling 1996), and higher levels of work-family conflict (Bakker, Demerouti, and Burke 2009). Based on these ideas and prior evidence, we propose and test two additional hypotheses:

> ***The Overworked-Matched Strain Hypothesis***: Individuals who overwork and characterize this as their preferred hours should report increased distress, sleep problems, and physical symptoms compared to the reference category.

> ***The Overworked-Matched Devotion Hypothesis***: Individuals who overwork and characterize this as their preferred hours should report *similar or even decreased* levels of distress, sleep problems, and physical symptoms compared to the reference category.

Explaining the Health Effects of Overemployment/Overwork: Job-Related Stress

In evaluating the hypotheses articulated above—especially those that involve overemployment and overwork—we evaluate the extent that two stressors might explain any observed patterns: *job pressure* and *work-to-family conflict* (WFC). Job pressure is one of the most important dimensions of job stress with long-standing relevance in prominent job strain models (Demerouti et al. 2001; Karasek 1979; Karasek and Theorell 1990). Early conceptualizations of job demands articulated qualities like fast-paced performance, intensity of effort, and time constraints, with many workers expressing the sense of "never having enough time to get the job done." These ideas emphasize the experience being overwhelmed by the amount of work to do; being required to work on too many tasks at the same time; and having demands on the job exceed the time allotted to complete the work (Diestel and Schmidt 2009; Duxbury, Lyons, and Higgins 2008; Schieman 2013). These dynamics present threats to workers' health (Glavin, Schieman, and Reid 2011; Hakanen, Schaufeli, and Ahola 2008; Schieman and Glavin 2011). Likewise, work-to-family conflict (WFC)—that is, when the expectations, responsibilities, and obligations of work interfere with family roles—represents

another threat to well-being (Schieman and Young 2015; Young and Schieman 2012). A recent meta-analysis identifies WFC as a strong predictor of poor health than common determinants like unemployment and exposure to second hand smoke (Goh et al. 2015).

Given the salience of job pressure and WFC as fundamental stressors that shape worker health, we integrate them into our analyses to assess their potential explanatory role in the strain-related hypotheses articulated above. In particular, we expect that the statistical adjustments of job pressure and WFC should contribute to any observed patterns that are consistent with the *Overemployed-Mismatch Strain Hypothesis*. Even more precisely, we hypothesize that the strongest mediation should be evident with respect to the *overemployed/overworked* combination because these individuals are experiencing amplified burdens of overwork in the form of working particularly long hours each week alongside a preference for reducing their work hours. For shorthand, we refer to this as the *Stress Exposure Hypothesis*: Overemployed/overworked individuals should report elevated distress, sleep problems, and physical symptoms because of their elevated exposure to job pressure and WFC.

METHODS

Sample

To test the hypotheses outlined above, we analyze data from four waves (2011 – 2017) of the *Canadian Work Stress and Health* study (CAN-WSH), a national longitudinal study of the Canadian labor force. To be eligible to become a study participant, individuals had to be: (1) residing in Canada; (2) 18 years of age or older; (3) currently working at a paid job or operated an income-producing business; (4) employed in the civilian labor force; and 5) live in a non-institutional residence. In households with more than one eligible person, we used the "next

birthday" method to randomly select a participant. Calls were made to a regionally stratified

unclustered random probability sample generated by random-digit-dial methods. Interviews were

conducted in English or French and averaged approximately 30–35 minutes. Study participants

received a $20 gift card for completing the interviews. Wave 1 interviews were conducted by

telephone between January and August 2011. Subsequent interviews for Waves 2, 3, and 4 were

conducted every two years—with the most recent Wave 4 completed in 2017. The CANWSH

study is ideal for these analyses because the data contain numerous indicators of key variables

central to our hypotheses. The data are collected over a 6-year period, which allows us to use

fixed-effects models that investigate within-person changes in psychological distress, sleep

problems, and physical symptoms. The final full sample for Wave 1 was 6,004, with a response

rate of approximately 40 percent. The number of cases and retention rates for each successive

wave of data collection are as follows: Wave 2 N = 4,423 (73.7 percent of Wave 1), Wave 3 N =

3,805 (63.4 percent of Wave 1 and 86.0 percent of Wave 2), and Wave 4 N=3,378 (56.3 percent

of Wave 1, 76.4 percent of Wave 2, and 88.8 percent of Wave 3). The overall retention rate from

Wave 1 in 2011 to Wave 4 in 2017 is 56.2. After removing respondents who only participated in

Wave 1 and with missing data on our key variables of interest, a sample of 3,868 unique

individuals and 12,156 observations (or person-years) remained. Our data take the form of

unbalanced panel sample where the number of time periods may differ across individuals.

Focal Measures

 Psychological distress. We use seven well-known items of generalized psychological

distress adapted from the Kessler index (Kessler et al. 2002). These items ask about the

frequency that participants have experienced the following symptoms in the past month:

"anxious or tense," "nervous," "worry a lot about little things," "had trouble keeping your mind on what you were doing," "restless or fidgety," "sad or depressed," and "hopeless." Response choices are "all of the time" (1), "most of the time" (2), "some of the time" (3), "a little of the time" (4), and "none of the time" (5). We reverse-coded responses and averaged them to create the index; higher scores indicate more distress (α_{w1} = .83).

Sleep problems. Respondents were asked how often in the past month they had trouble falling or staying asleep; woke up before [they] wanted to; and, woke up feeling refreshed (reverse-coded) (Maume, Sebastian, and Bardo 2009). Response choices are "none of the time" (1), "a little of the time" (2), "some of the time" (3), "most of the time" (4), and "all of the time" (5). We averaged items to create index; higher scores reflect more sleep problems (α_{w1} = .72).

Physical symptoms. Respondents were asked how often in the past month they had the following symptoms: "headaches," "stomach pain or problems like indigestion or heartburn," "chest pain," "neck or back pain," and "muscle aches, soreness, or stiffness." This scale contains items that have appeared in established measures of physical health (Pennebaker 1982) and in recent studies (Narisada 2018; Schieman and Reid 2009). Response choices are "none of the time" (1), "a little of the time" (2), "some of the time" (3), "most of the time" (4), and "all of the time" (5). We averaged the items to create the index (α_{w1} = .65).

Actual work hours. We coded participants' actual hours as *part-time* (works fewer than 35 hours per week), *full-time* (35-49 hours per week), or *overwork* (50-plus hours per week).

Work hour preference (mismatch). The following question measures work hour preference (mismatch): "Would you prefer to have more hours, fewer hours, or the current hours you work at your [main] job?" Response choices are "more hours" (1), "fewer hours" (2), and "current hours" (3). Based on these responses, we classified workers as *overemployed* (prefers

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fewer hours), *underemployed* (prefers more hours), or *matched* (current hours). Table 2 reports

the percentages of the specific combinations of actual work hours and work hour preferences.

[INSERT TABLE 2 ABOUT HERE]

Job pressure. Three items ask about the frequency that participants experienced the

following in the past three months: "How often did you feel overwhelmed by how much you had

to do at work?" "How often did you have to work on too many tasks at the same time?" "How

often did the demands of your job exceeded the time you have to do the work?" (Schieman

2013). Response choices are coded: "never" (1), "rarely" (2), "sometimes" (3), "often" (4), and

"very often" (5). We averaged items so that higher scores indicate more job pressure ($\alpha_{w1} = .85$).

Work-to-family conflict. We use four items to measure WFC. These are standard items

that have been used in several recent surveys, including the National Survey of the Changing

Workforce and are widely published (Schieman and Glavin 2011; Schieman and Young 2010a,

2010b; Voydanoff 2007). The items ask study participants how often in the last three months

they have experienced the following: "not had enough time for the important people in your life

because of your job," "not have the energy to do things with the important people in your life

because of your job," "work kept you from doing as good a job at home as you could," and "job

kept you from concentrating on important things in your family or personal life." Response

choices are "very often" (1), "often" (2), "sometimes" (3), "rarely" (4), and "never" (5). We

reverse-coded and averaged items such that higher scores indicate more WFC ($\alpha_{w1} = .90$).

Control Measures

All analyses adjust for the following variables. *Age* is coded in years. *Marital status*

indicates whether the respondent was married, cohabiting, previously married, or never married

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(single). *The presence of children* is coded as the number of children younger than age 18 residing in the household. *Education* is coded as follows: less than high school, high school, some college, college, and post-graduate degree. *Occupation* was coded in the following categories: managers, professionals, technical, sales, administrative support, service, and production. *Personal income* is coded as the natural log to help normalize the distribution. *Financial strain* is measured by three items. Two items asked how often in the past year study participants had "trouble paying the bills" and "not have enough money to buy food, clothes or things household needed." Response choices were "very often" (1), "often" (2), "sometimes" (3), "rarely" (4), and "never" (5). The third item asked: "how do your finances usually work out by the end of the month?" Response choices were "a lot of money left over" (1), "a little money left over" (2), "just enough to make ends meet" (3), and "not enough to make ends meet" (4). We reverse-coded the first two items, then created an index after standardizing all three items (because of different response choices). Higher scores reflected more financial strain (α_{w1} = .77). Finally, we included the *survey-year* variable with four categories where the reference group was the first wave (2011). Appendix A presents descriptive statistics of all variables in the analyses.

Analytical Models

Unobserved characteristics, such as personality traits, can affect actual work hours, preferences, and health outcomes. That is, a correlation between work hour mismatches and health might be attributable to a correlation between each component with unobserved personality traits, rather than to each other. If so, estimates might be biased due to the omitted variables. To address this, we test fixed effects models to account for unobserved heterogeneity by focusing on within-individual changes over time (Hsiao 2003; Wooldridge 2009).

Equation 1 represents the general fixed effects model for liner panel data (Inanc 2018):

$$y_{it} - \bar{y}_i = \beta(x_{it} - \bar{x}_i) + u_{it} - \bar{u}_i, t = 1, 2, \ldots, T \tag{1}$$

where y_{it} represents the dependent variable for individual i at time t where $t = 1, 2, \ldots, T$; $\bar{y}_i$ represents the individual mean of the independent variable. β is the vector of the independent variables (x) at time t; and $\bar{x}_i$ represents the individual mean of these variables. Fixed effects models are based on the assumption that the unobserved heterogeneity is time-invariant; thus, fixed effects models do not provide estimates for variables such as gender or race. However, another approach of random effects models does provide estimates for time-invariant variables, but the models are based on the assumption that individual-specific error is uncorrelated with the independent variables, and this allows time-invariant variables to be influential for our outcomes. We conducted a series of Hausman tests to determine whether fixed- or random effects models are more appropriate, with the null hypothesis being that individual effects are not correlated with other independent variables in the models. Hausman tests were performed for each dependent variable, with the results indicating that random effects models would produce biased estimates and that fixed effect models are the more appropriate analytical approach.

RESULTS

Stressors: Job Pressure and Work-to-Family Conflict (WFC)

For all analyses reported below, individuals who work full-time and prefer to work those hours (matched/full-time) are the reference group. The first column in Table 3 shows the model for job pressure. Beginning with the top three rows, we observe that overemployed individuals who work full-time (b = .276, p < .001) or overwork (b = .727, p < .001) report increased job pressure; however, the part-time/overemployed do not report more job pressure. In the next set of

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rows, we show that among those who work their preferred hours (matched), part-timers report decreased pressure (b = -.250, p < .001), while individuals who report overwork experience increased pressure (b = .242, p < .001). Examining the subsequent next three rows, among the under-employed we observe that only individuals who work part-time report decreased levels of job pressure relative to matched/full-time workers (b = -.269, p < .001).

The second column in Table 3 reports the results for the predications of work-to-family conflict (WFC). We first observe that overemployed individuals who work part-time (b = .152, p < .01), full-time (b = .268, p < .001), or overwork (b = .606, p < .001) report increased levels of WFC. Examining the subsequent set of rows, we find that among individuals who work their preferred hours, only the part-timers report decreased WFC (b = -.179, p < .001), while individuals who report overwork experience increased WFC (b = .242, p < .001). And finally, among the under-employed, only part-timers report decreased levels of WFC relative to full-time/matched workers (b = -.239, p < .001). Collectively, these patterns suggest that both overemployment and underemployment have implications for levels of job pressure and WFC— but those patterns depend on configurations with part-time, full-time, or overwork arrangements.

[INSERT TABLE 3 HERE]

Health-Related Outcomes: Distress, Sleep Problems, and Physical Symptoms

Distress. The first column of results predicting distress in Table 3 shows that overemployed status is associated with increased distress for part-timers (b = .098, p < .05), full-timers (b = .065, p < .001), and the overworked (b = .155, p < .001). Examining the next set of subsequent rows, we find no initial differences among the matched contrasts. However, underemployed/part-timers report increased distress (b = .080, p < .01). Next, in model 2

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predictions for distress, the inclusion of job pressure and WFC—both of which increase distress—reduce the overemployed/full-time and overemployed/overworked coefficients to statistical non-significance. These reductions are due to the predictions of job pressure and WFC reported in columns 1 and 2 of Table 3, respectively. By contrast, the overemployed/part-time coefficient holds net of job pressure and WFC (b = .078, p < .05). Moreover, we also observe slight suppression effects for the underemployed/part-time once we include job pressure and WFC in the model (b = .080, p < .01 to b = .134, p < .001 across models 1 and 2).

Sleep problems. The first column of results for sleep problems in Table 3 shows that overemployed status predicts increased sleep problems among full-timers (b = .070, p < .001) and the overworked (b = .172, p < .001), but not for overemployed/part-timers. Examining subsequent rows, we find that the overemployed who prefer those hours experience increased sleep problems (b = .111, p < .01). In addition, the underemployed/part-timers do not report increased sleep problems. Collectively, these patterns represent further differences between the models for distress versus sleep problems. Moving across the columns, model 2 shows that the adjustments for job pressure and WFC—both of which increase sleep problems—reduces the overemployed/full-time and overemployed/overworked coefficients to non-significance. Likewise, we observe that the matched/overworked coefficient also decreases to statistical non-significance with the adjustment for job pressure and WFC across models 1 and 2. On the other hand, we also notice suppression effects with the matched/part-time coefficient increasing and becoming statistically significant (from b = .028, ns. in model 1 to b = .070, p < .05 in model 2).

Physical symptoms. In the final set of columns in Table 3, we observe that overemployed status is associated with increased physical symptoms among full-timers (b = .050, p < .001) and the overworked (b = .104, p < .001), but not for overemployed/part-timers. Moving down

subsequent rows, we find that none of the matched comparisons are significantly different, nor are those for the underemployed. In model 2 predictions of physical symptoms, we find that the adjustments for job pressure and WFC—both of which increase physical symptoms—reduces the overemployed/full-time and overemployed/overworked coefficients to non-significance. Among the matched comparisons, we also find suppression effects with the matched/part-time coefficient increasing to significance (b = .018, ns. in model 1 to b = .041, p < .05 in model 2).

Summary of Hypotheses Tests

First and foremost, we find the strongest support for the *Overemployed-Mismatch Strain Hypothesis*, with the overemployed individuals who overwork or work full-time in their increased levels of distress, sleep problems, and physical symptoms. Moreover, we find strong and consistent support for the *Stress Exposure Hypothesis*—that is, overemployed/overworked individuals report elevated distress, sleep problems, and physical symptoms because of their exposure to increased job pressure and WFC. In each case, these coefficients are reduced substantially and become statistically insignificant; these patterns are similar for both full-timers and the overworked. We also find support for the *Overemployed-Mismatch Strain Hypothesis* in terms of part-time status, but only for distress—and that effect holds net of stressors.

Second, we find partial support for the *Underemployed-Mismatch Strain Hypothesis* in two ways: (1) Individuals who desire more work hours and work part-time experience increased distress, and that effect holds net of stressors; and (2) underemployed/part-timers report increased sleep problems, but that effect only emerges when we adjust for job pressure and WFC (these function as suppressors).

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Third, we find limited support for the *Overworked-Matched Strain Hypothesis*:

Individuals who overwork and characterize this as their preferred hours report increased sleep problems, but not increased distress or physical symptoms. But here again, we find support for the *Stress Exposure Hypothesis*—overworked/matched individuals report elevated sleep problems because of their exposure to increased job pressure and WFC; the effect is reduced substantially and become statistically insignificant. On the other hand, when distress and physical symptoms are the measured outcome, we find support for the *Overworked-Matched Devotion Hypothesis*: Individuals who overwork and characterize this as their preferred hours do not experience elevated levels of distress or physical symptoms.

DISCUSSION

Using data from a large national sample of Canadian workers interviewed over a 6-year period, our study documents and described the ways that actual and preferred work hours combine to shape different health-related outcomes, with a new focus on changes in potent stressors as explanatory mechanisms. Work hour mismatch took two forms: *overemployment* in which workers prefer to work fewer hours versus *underemployment* in which workers prefer more hours. P-E Fit Theory predicts elevated levels of unfavorable health among individuals who find themselves in undesired structural arrangements. We document that the most problematic direction involves overemployment—that is, the preference for fewer weekly work hours. These individuals experienced increased levels of all three outcomes over time: distress, sleep problems, and physical symptoms. Importantly, we also demonstrated that the combination of overemployment and full-time status increased distress, sleep problems, and physical symptoms; however, only for distress did these same patterns reflect part-timers' experience.

Taken together, our observations were most consistent with the predictions of the *Overemployed-Mismatch Strain Hypothesis*. While the findings somewhat parallel prior studies (e.g., Angrave and Charlwood 2015; De Moortel et al. 2017), our discoveries make three novel contributions to the literature by (1) discovering effects for three health-related outcomes; (2) demonstrating the effects among the overworked and individuals working full-time; and (3) articulating the ways increased levels of both job pressure and WFC contribute to these patterns. The findings therefore further insights about the ways that role-specific stressors are both linked to work hour mismatch and, in turn, help to explain why workers with those arrangements experience poorer health outcomes over time.

In contrast to overemployment, we also discovered unique patterns about the underemployed—that is, individuals who would prefer to work *more* hours. We showed that the underemployed who work part-time reported increased distress, but not physical symptoms. The patterns for sleep problems were more complicated due to the ways that job pressure and WFC functioned as suppressors. Holding those stressors constant revealed that underemployed part-timers do indeed report increased sleep problems as well. Collectively, these findings provide only partial and somewhat nuanced support for the *Underemployed-Mismatch Strain Hypothesis*—with the important caveat that the clearest patterns are most evident among (a) part-time workers only and (b) when we consider distress as the health outcome.

We also considered another less common but equally compelling scenario: the overworked who reported that their current hours aligned with their work hour preferences. We situated our discussion of this group in the "workaholic" literature because the most basic assumption is that long work hours or overwork must be undesirable and, by extension, not an ideal preference. And yet, for overworked individuals who claimed this as their preferred

arrangement, we demonstrated a deviation from normative expectations. We found that the overworked who preferred this arrangement did not have elevated levels of distress or physical health symptoms—however, they did experience increased sleep problems. Moreover, job pressure and WFC once again functioned as explanatory mechanisms in this process. We interpret these findings as mostly supporting the *Matched-Overwork Devotion Hypothesis*, but the findings for sleep problems are also suggestive of the *Matched-Overwork Strain Hypothesis*.

In sum, our findings underscore that it is the combination of actual and preferred work hours that matters for changes in health over time—but the patterns depend on the health outcome being evaluated and the particular nature of the interaction between actual and preferred hours. The most consistent pattern was documented for the overemployed who reported overwork or full-time status. The combination of long hours with the desire for fewer hours appears to generate the most problems for workers, and we emphasized the relevance of job pressure and WFC in those dynamics. Future research might focus on other nuances in these processes and map out more carefully the causal linkages. We have situated job pressure and WFC as explanatory variables, but it is possible that workers adjust their actual or preferred hours in ways that correspond to elevated job pressure and WFC. In our analysis, this represents a less compelling possibility because of the strong patterns whereby the overworked and full-time who prefer to work fewer hours reported elevated levels of job pressure and WFC. Nonetheless, as individuals experience changes in the quality and intensity of work roles it is possible that these processes influence changes in both their actual hours and their preferences.

One additional direction to expand this line of inquiry would involve the ways that these patterns differ as individuals transition into parenthood roles. New mothers and fathers might modify their actual work hours and their preferred hours because of family leave policies, but

also because of personal desires to shift—even if only temporarily—the balance of time in social roles toward the family and household. As this occurs, it would be valuable to understand how these processes shape the particular combinations of actual and preferred hours and their subsequent effects on stress exposures. At the same time, some parents might have less agency over the degree and kind of changes they can make to work-time arrangements. One possibility is that some parents might prefer to reduce hours in the short- to medium-term, but then increase their hours as children age. These kinds of questions require much greater focus on couples and households, including financial arrangements in the household, with an emphasis on the division of earning contributions and different kinds of household labor (e.g., childcare, housework).

CONCLUSION

Work hours matter for well-being—but so too work hour preferences. And the narrative is complicated by the ways that these two conditions intersect. One might work too few hours or too many; one might also prefer to work fewer hours or prefer to work more hours. Collectively, the divergent pathways that these set up for individual workers over time represent important considerations in the evaluation of roles and their potential stress burden. There is little doubt that work hour preferences are complex matters that might be shaped by a host of personal and household conditions; likewise, actual work hours are often intricately intertwined with the demands and pressures of work, or differences in structural opportunities for workers as they move through various systems of stratification and the roles and events that emerge across the life course (e.g., education, parenthood, illness). Situating preferences within complex role arrangements and documenting their concurrent stressors (or resources) can further illuminate the ways that health disparities emerge and change over time.

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TABLE 1. Scenarios of the Combinations between Actual and Preferred Work Hours

	Underemployed	Matched	Overemployed
Part-time (< 35 hours)	Underemployed-Mismatch Strain Hypothesis	Ideal	Overemployed-Mismatch Strain Hypothesis
Full-time (35-49 hours)	Too few cases to establish credible estimates and interpretations	Most Ideal (The lowest levels of distress, physical symptoms, and sleep problems)	Overemployed-Mismatch Strain Hypothesis
Overwork (50-plus hours)	Too few cases to establish credible estimates and interpretations	Matched-Overwork Strain vs. Matched-Overwork Devotion Hypothesis	Overemployed-Mismatch Strain Hypothesis

TABLE 2. Cross-Tabulation of Actual Work Hours and Work Hour Preferences

Actual Work Hours	Work Hour Preferences (%)		
	Underemployed	Matched	Overemployed
Full sample			
Part-time	22.93	65.43	11.63
Full-time	5.30	57.98	36.73
Overwork	2.62	31.68	65.70
Sub-total	8.71	55.08	36.21
Men			
Part-time	23.82	64.11	12.07
Full-time	7.40	60.16	32.45
Overwork	3.12	36.93	59.95
Sub-total	8.37	54.50	37.13
Women			
Part-time	22.65	65.85	11.50
Full-time	3.86	56.48	39.66
Overwork	1.79	22.86	75.35
Sub-total	8.94	55.47	35.58

TABLE 3. Fixed Effects Models Predicting Stressors and Health-Related Outcomes

	Job Pressure	WFC	Psychological Distress		Sleep Problems		Physical Symptoms	
			1	2	1	2	1	2
Overemployed X…								
Part-time	-.032	.152**	.098**	.078*	.058	.040	.025	.015
	(.059)	(.051)	(.034)	(.033)	(.050)	(.049)	(.031)	(.031)
Full-time	.276***	.268***	.065***	.007	.070***	.014	.050***	.019
	(.026)	(.022)	(.015)	(.015)	(.022)	(.022)	(.014)	(.014)
Overwork	.727***	.606***	.155***	.016	.172***	.037	.104***	.031
	(.037)	(.032)	(.022)	(.021)	(.031)	(.032)	(.020)	(.020)
Matched X…								
Part-time	-.250***	-.179***	.009	.053**	.028	.070*	.018	.041*
	(.035)	(.030)	(.020)	(.019)	(.029)	(.029)	(.018)	(.018)
Full-time (REF)								
Overwork	.242***	.209***	.039	-.009	.111**	.065	.016	-.009
	(.045)	(.039)	(.026)	(.025)	(.038)	(.037)	(.024)	(.024)
Underemployed X…								
Part-time	-.269***	-.239***	.080**	.134***	.045	.097*	.019	.048
	(.047)	(.040)	(.027)	(.026)	(.039)	(.039)	(.025)	(.025)
Full-time	.024	-.041	.034	.038	.049	.052	-.007	-.005
	(.052)	(.045)	(.030)	(.029)	(.044)	(.043)	(.027)	(.027)
Overwork	.248	.066	.114	.086	-.056	-.083	.017	.003
	(.127)	(.109)	(.074)	(.071)	(.107)	(.105)	(.067)	(.066)
Job pressure				.076***		.076***		.038***
				(.007)		(.010)		(.006)
WFC				.138***		.131***		.076***
				(.008)		(.011)		(.007)
Intercept	3.266	2.569	2.151	2.124	2.676	2.649	1.986	1.972
	(.074)	(.063)	(.043)	(.041)	(.062)	(.061)	(.039)	(.038)
Within R^2	.079	.080	.033	.111	.020	.055	.014	.041
Between R^2	.040	.052	.000	.121	.024	.152	.005	.107
Overall R^2	.046	.058	.001	.119	.023	.122	.007	.094
Rho	.626	.645	.699	.649	.636	.614	.662	.640
N (person-years)	12,156	12,156	12,156	12,156	12,156	12,156	12,156	12,156

***p<.001; **p<.01; *p<.05

Note: All models include age, marital status, children, education, occupation, income, financial strains, and survey years.

Standard errors are in parentheses. WFC = work-to-family conflict.

APPENDIX A. Descriptive Statistics of all Study Variables

	Total		Men		Women	
	Mean/%	SD	Mean/%	SD	Mean/%	SD
Focal variables						
Job pressure	3.05	1.07	2.93	1.05	3.13	1.08
Work-family conflict	2.50	.97	2.45	.93	2.53	1.00
Psychological distress	2.12	.65	2.02	.62	2.19	.67
Sleep problems	2.78	.93	2.64	.89	2.87	.94
Physical symptoms	2.02	.60	1.91	.56	2.09	.61
Control variables						
Age	47.32	11.17	47.22	11.49	47.39	10.95
Marital status						
Married	55.77%	—	60.82%	—	52.29%	—
Cohabiting	14.35%	—	14.93%	—	13.94%	—
Previously married	15.09%	—	10.35%	—	18.35%	—
Never married (single)	14.80%	—	13.90%	—	15.42%	—
The presence of children	.77	1.06	.86	1.12	.71	1.02
Education						
Less than high school	5.04%	—	6.38%	—	4.12%	—
High school	14.59%	—	15.76%	—	13.79%	—
Some college	25.52%	—	25.69%	—	25.40%	—
College	37.27%	—	33.60%	—	39.81%	—
Post-graduate	17.57%	—	18.58%	—	16.88%	—
Occupation						
Managers	16.07%	—	19.81%	—	13.49%	—
Professionals	29.52%	—	27.20%	—	31.11%	—
Technical	18.29%	—	12.63%	—	22.18%	—
Sales	5.88%	—	5.95%	—	5.83%	—
Administrative support	7.34%	—	3.37%	—	10.07%	—
Service	10.83%	—	6.90%	—	13.53%	—
Production	12.08%	—	24.13%	—	3.79%	—
Personal income	63750.63	40649.04	77871.22	45776.95	54030.95	33403.33
Financial strains	-.005	.84	-.102	.77	.061	.87
N (person-years)	12,156		4,956		7,200	