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Research Article

Non-standard work schedules, gender, and parental stress

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Non-standard work schedules, gender, and parental stress

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Abstract

BACKGROUND
Working non-standard hours changes the temporal structure of family life, constraining the time that family members spend with one another and threatening individuals' well-being. However, the empirical research on the link between stress and non-standard schedules has provided mixed results. Some studies have indicated that working non-standard hours is harmful whereas others have suggested that working atypical hours might facilitate the balance between family and work. Moreover, there is some evidence that the association between stress and non-standard employment has different implications for men and women.

OBJECTIVE
This paper examines the association between non-standard work schedules and stress among dual-earner couples with children. Two research questions are addressed. First, do predictability of the schedule and time flexibility moderate the link between non-standard work hours and stress? Second, do non-standard schedules affect men's and women's perceptions of stress differently?

METHODS
We use a sample of 1,932 working parents from the Canadian 2010 General Social Survey, which includes a time-use diary. A sequential logit regression analysis stratified by gender is employed to model two types of result. First, we estimate the odds of being stressed versus not being stressed. Second, for all respondents feeling stressed, we estimate the odds of experiencing high levels versus moderate levels of stress.

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RESULTS
Our analysis shows that the link between non-standard working hours and perceived stress differs between mothers and fathers. First, fathers with non-standard schedules appear more likely to experience stress than those working standard hours, although the results are not significant. Among mothers, having a non-standard schedule is associated with a significantly lower risk of experiencing stress. Second, the analysis focusing on the mediating role of flexibility and predictability indicates that predictability is more important than flexibility. Workers with non-standard predictable schedules exhibit a lower risk of being stressed than those with non-standard unpredictable hours. Work flexibility does not seem to bring any additional advantage to women. However, it is linked to higher odds of being stressed for fathers, particularly among those having non-standard schedules.

1. Introduction

Previous studies have indicated that the relationship between stress and employment cannot be reduced solely to the number of hours worked, but that work schedules need to be taken into account (Davis et al. 2008; Fenwick and Tausig 2001). In particular, stress appears to be closely related to non-standard working hours (Jamal 2004). Yet, despite the agreement that having non-standard schedules matters, studies have presented an ambiguous picture of whether the effect of atypical hours is beneficial or detrimental to individuals' perception of stress. Much of the literature has emphasized the moderating effect of schedule control and has suggested that non-standard working hours may be associated with different perceptions of stress, depending on the control that workers exert over their work schedule (Carlson, Grywacz, and Kacmar 2010; Hook and Wolfe 2011). Similarly, it is likely that the predictability of the schedule (i.e., the ability to forecast and plan working hours) might also alleviate some of the negative impact of non-standard schedules. Nevertheless, predictability as a moderator of the association between stress and non-standard schedules has not received much attention in the literature.

In order to fill this gap, this study examines to what extent non-standard schedules are associated with the perception of stress and whether this association is influenced by the flexibility and predictability of the work schedule. Moreover, we explore the question of whether the association between stress and non-standard working hours is different for men and women. Mothers and fathers, on average, have different patterns of time constraints and demands, as well as different responses to the same constraints and demands (Hook and Wolfe 2011). Thus, given these large and consistent gender

differences regarding the harmonization of work and family life, we expect non-standard work to have different implications for men's and women's perceptions of time pressures and stress.

In the empirical part, we focus on Canadian mothers and fathers from dual-earning families. Canada is an interesting study case as non-standard work has become more common over the last three decades (Cranford, Vosko, and Zukewich 2003). In 2010 nearly 30% of the workforce was engaged in non-standard employment.

The paper is organized as follows. Section 2 provides background information and an overview of existing research on non-standard schedules, stress, and gender differences. Research hypotheses are presented in Section 3, and Section 4 describes the data and methods used in the analysis. Finally, we report results in Section 5, and conclude with a discussion in Section 6.

2. Background

2.1 Non-standard schedules and stress: Schedule control and flexibility

So far, empirical research has provided an unclear picture regarding the effect of non-standard schedules on individuals' well-being and perceived stress, especially among dual-earner couples with children. On the one hand, non-standard schedules have been shown to reduce family time among parents and to hinder work and family arrangements, and thus to increase the level of stress reported by working parents in the United States (Davis et al. 2008) and Canada (Strazdins et al. 2006; Zuzanek 2000). Bulanda and Lippmann (2009) reviewed the existing literature on parents' time with children in the United States and concluded that mothers who work evening and nights, or at irregular intervals, have little or no access to quality childcare services. As a result they are required to use alternative childcare arrangements, walking a tightrope between parental time, family networks, and public and/or private services, which may contribute to intensifying the perception of daily stress.

On the other hand, there is some evidence suggesting that non-standard hours are positively linked to work and life balance and lower perceived stress. Non-standard working schedules could help to combine childcare and labor force participation (Begall, Mills, and Ganzeboom 2014). Täht and Mills (2012), who studied the Netherlands, found that parents who work non-standard hours, or whose spouses do, tend to take a greater role in caring. This could indicate that parents plan their time strategically, leaving work when their children need care and catching up with work during evenings or weekends. Similarly, in the context of the United States, Han (2004) concluded that mothers with children under three years of age often work non-standard

hours in order to soften conflicts between work and family, and to facilitate childcare. However, Barthe, Messing, and Abbas (2011), using their own data for the service sector in Quebec, suggested that a non-standard schedule might alleviate work-family conflict only if working hours are fixed and shifts are regular.

These results seem to suggest that two factors intervene in the relationship between non-standard hours and the perception of stress: flexibility (the voluntary or involuntary nature of such schedules) and predictability (knowing in advance which hours will be worked). So far, researchers have focused predominantly on the role of flexibility and existing studies demonstrate that it is an important variable mediating the link between non-standard hours and stress (Carlson, Grywacz, and Kacmar 2010). Involuntary non-standard work schedules (i.e., those that are arranged by employers and to which employees must comply as a condition of employment) are usually negatively linked to a variety of family outcomes (Barnett and Gareis 2009; Bulanda and Lippmann 2009). By contrast, the opportunity to choose non-standard working hours when needed might partly alleviate work-family conflicts (Baxter 2010; Hook and Wolfe 2011).

In spite of the general agreement that flexibility matters, some authors have questioned whether it is the flexibility or the predictability of the work schedule that is most relevant when explaining perceived stress (Henly, Shaefer, and Waxman 2006). Whether employers post schedules at the last minute, change working hours at short or no notice, or place their employees 'on call', it tends to negatively affect their personal and family life and inflate work-life conflict. Indeed, there is some evidence that working parents with little control over their schedule and working hours struggle to arrange childcare and are more likely to report higher levels of time stress and work-family conflict, and lower job and life satisfaction (Henly, Shaefer, and Waxman 2006). Yet in the literature predictability has received much less attention than flexibility, and the distinction between flexibility and predictability has not always been explicit.

2.2 Gender differences in work and family roles: Implications for non-standard work and stress

To fully understand whether or not non-standard work schedules may increase or alleviate the perception of stress the gender perspective must be also considered, because men and women have different time constraints. Existing evidence suggests that mothers tend to report higher levels of stress than fathers (Jacobs and Gerson 2004; Mattingly and Sayer 2006; Marshall 2006). To account for these gender differences some authors pointed to women's growing labor force participation in combination with their continued responsibility for childcare and household tasks (Mattingly and Sayer 2006; Marshall 2006). Mothers and fathers have different patterns of paid work

(Presser, Gornick, and Parashar 2008; Connelly and Kimmel 2007; Fortin and Huberman 2002), and they are also differently involved in childcare and housework activities (Hook and Wolfe 2011; Craig and Powell 2011; Bianchi 2011).

There are several reasons why non-standard schedules are likely to affect men and women differently. First, it is possible that the process underlying the motivation for non-standard work varies by gender. Past analyses suggest that women are more likely to schedule their paid work hours around their children's care needs in order to be available during particular periods of the day. Evidence of such timing preferences among mothers has been observed in the U.S. (Connelly and Kimmel 2007), as well as in Australia (Craig and Powell 2011). Jang, Zippay, and Park (2012), who examined the role of gender in the relationship between flexible work schedules and stress using U.S. data, found that women and workers with family responsibilities experienced a more significant decrease of stress than men and workers without family responsibilities, when they had the option of flexible work arrangements.

Australian researchers concluded that non-standard schedules have different effects on mothers' and fathers' abilities to combine employment with caring because they are employed in distinctive industries in the labor market (Hosking and Western 2008). Indeed, occupational sex segregation has to be considered when examining whether non-standard employment benefits mothers and fathers differently. In Canada women are still concentrated in a number of occupations and strata within organizations (Fortin and Huberman 2002; Uppal and LaRochelle-Côté 2014). Therefore, when assessing the extent to which workers are able to choose non-standard work to better balance their work and family lives, the type of occupation needs to be taken into consideration. Indeed, voluntary non-standard schedules are more common among highly skilled workers (Davis and Kalleberg 2006). For these more privileged workers, the ability to choose non-standard working hours is often just another option among a wide variety of organizational policies that facilitate work-family balance (Berg, Kallberg, and Appelbaum 2003). By contrast, irregular and unpredictable schedules disproportionally affect low-wage workers in industries ranging from healthcare to manufacturing and are ubiquitous in some jobs that can be classified among 'pink collar jobs', i.e., service occupations (Ben-Ishai, Hammad, and Warden 2014; Lambert 2008).

However, the reasons why men and women are likely to be affected differently by non-standard hours are not only linked to employment conditions but also to family organization. Mothers and fathers differ in their allocation of time to unpaid work and also in the type of activities they perform. In general, mothers do more of the laborious physical childcare activities, which must often be done routinely at certain times of the day. By contrast, fathers are more involved in 'talk-based' childcare, which is less time-critical and probably more enjoyable (Craig and Powell 2011). This unequal sharing of childcare is likely to yield more stress for mothers than for fathers. The externalization

of unpaid work (i.e., the ability to hire paid services for caring and helping with household tasks) has been invoked as a factor that can mediate the relationship between non-standard work schedules and time stress (Bianchi 2011). However, institutional childcare services generally do not meet the specific needs of parents with non-standard schedules. Therefore, having the ability to hire external help might be more beneficial to mothers than fathers, and to mothers working non-standard schedules.

2.3 Confounding factors and control variables

To understand the link between non-standard employment and stress, the analyses must consider a range of possible confounding factors. We have already mentioned the importance of taking the type of occupation into account. Other dimensions of employment are also likely to affect mothers' and fathers' perceptions of stress, such as being self-employed or a paid-worker, and working long or short hours.

The analysis also needs to consider the family characteristics of the parents. Apart from childcare responsibilities and the ability to hire services at home, living in a stepfamily or with a cohabiting rather than married partner may also influence parental stress. Stepfamily couples, compared to those families with only biological or adopted children, have been found at higher risk of reporting work and family imbalances, possibly due to the lower involvement of the non-biological parent in childcare (Papernow 2013). Similarly, some studies have shown that in contrast to married parents, cohabiting parents are more likely to experience a negative relationship between non-standard work schedules and parental well-being (Liu et al. 2011). Several factors might contribute to the observed differences. For example, cohabiting parents are more likely to experience economic hardship (Bumpass and Lu 2000) and less likely to have access to family support (Eggebeen 2005). Consequently, they might be more pressured to enter the labor market and might not have the luxury of forgoing employment that does not fit their scheduling preferences for coping with family needs.

2.4 The Canadian context

Finally, this study relies on Canadian data. In this country, there has been a growing diversification, decentralization, and individualization of working time (Fudge 2011). In addition, the increasing labour force participation of women has been accompanied by the diversification of working schedules. Nowadays, men and women have different work arrangements (Williams 2008), and the proportion of women working part-time is twice as high as the proportion of men (Ferrao 2010).

According to the Canada Labour Code, 8 hours in a day and 40 hours in a week are considered the standard hours of work, with a maximum of 48 hours that employees may work in a week, and the typical regular schedule is defined as 9am to 5pm, Monday through Friday. The definition of non-standard schedules comprises regular and evening work, rotating and split shifts, casual or on-call jobs, as well as irregular shifts. Between 1989 and 1994 the share of the workforce engaged in some type of non-standard employment grew from 28% to 34% (Vosko, Zukewich, and Cranford 2003), and in 2001 about 38% of all employed Canadians worked in non-standard jobs (Kapsalis and Tourigny 2004). In 2005 the proportion of employed Canadians who worked other than during regular daytime was approximately 28% (Williams, 2008), and it has hovered around this level ever since then. In 2010, according to our own calculations, the percentage of non-standard workers was around 30% (Statistics Canada, General Social Survey 2010). The vast majority (82%) of workers with non-standard schedules worked full-time (30 hours or more per week). Women made up approximately 37% of all full-time non-standard workers, with nearly 7 in 10 of those working part-time (Williams 2008).

3. Hypotheses

Based on the existing research reviewed above, five research hypotheses are formulated:

H_1: Parents with standard schedules feel less stressed than those with non-standard schedules.

H_2: Predictability mitigates some of the negative association between stress and non-standard employment. Non-standard work schedules are particularly harmful if they are unpredictable.

H_3: Flexibility also alleviates some of the negative association between stress and non-standard employment. Those with non-standard but flexible schedules are less stressed than those with non-standard but fixed schedules.

H_4: Non-standard schedules have different implications for mothers' and fathers' perceived stress. They are more important for mothers than for fathers.

H_5: Mothers' stress levels are likely to be more closely influenced by family-related variables (e.g., ability to hire some domestic help, age of children). By contrast, work-related control variables are more important for fathers (e.g., occupation).

4. Data and methods

4.1 Data

The analysis used the 2010 Canadian General Social Survey (hereafter GSS), which collected information on time allocation. Respondents (aged 15 years and older) were asked to describe how they use their time during a given 24-hour period. In total, 15,390 respondents participated in the survey. Interviews were conducted on a weekday or during the weekend and throughout a complete year, so that every day and month is equally represented. Although the GSS diary data were collected from interviews more or less equally across the seven days of the week, we applied a day-of-the-week weight to ensure equal representation of all days of the week and to correct for any differential response rate across the seven days of the week. Survey respondents recounted the day of the interview's activities in sequence, and their daily time activities summed to exactly 24 hours. This is a major advantage of using the time-diary format over other types of survey, in which respondents often provide time estimates that add up to more than 24 hours a day. The reliability and validity of time-diary estimates compared with survey data has been well documented (Schulz and Grunow 2011).

The analytical sample is limited to dual-earner couples, either married or cohabiting, aged 25–54, with at least one child between 0–17 years old living in the household. Statistics Canada distinguishes four types of employment: paid workers, self-employed individuals, seasonal workers, and unpaid family workers. We restricted our sample to paid workers and self-employed individuals[4]. Respondents who reported having worked during the week prior to the interview and whose partner also worked during that week were selected. Our analytical sample comprised 1,974 respondents but was restricted to 1,932 individuals who had no missing information on the dependent or any of the explanatory or control variables.

4.1.1 Dependent variable

The dependent variable, perceived level of stress[5], is derived from the GSS question: "Thinking about the amount of stress in your life, would you say that most days are: not very stressful; a bit stressful; quite a bit stressful; or extremely stressful?" Working

[4] We are aware that, in terms of work schedule, these two groups are heterogeneous, since self-employed workers may have more control over their schedules. Nonetheless, this might vary depending on the industry and the economic activity that they carry out. For this reason, we kept both groups and controlled for type of employment in the analysis.

[5] Statistics Canada did not provide a definition of stress in the questionnaire and participants thus responded according to their own interpretation of stress.

parents who reported that most days were "quite a bit" or "extremely" stressful were classified as being highly stressed. Those who reported that most days were "a bit" stressful were categorized as moderately stressed, and those who reported that most days were "not very stressful" were classified as not being stressed.

4.1.2 Explanatory and control variables

As some of the respondents filled in the time-use diary on a day when they were not working, the work schedule is identified from the GSS question "Which of the following best describes your usual work schedule at your main job?" Both self-employed and employed answered this question. Respondents could choose from nine answers: 1) a regular daytime schedule or shift, 2) a regular evening shift, 3) a regular night shift, 4) a rotating shift (one that changes periodically from days to evenings or to nights), 5) a split shift (one consisting of two or more distinct periods each day), 6) a compressed work week, 7) on call or casual, 8) an irregular schedule, and 9) other. Two variables were created based on this question. The first variable distinguishes respondents who work standard schedules (response category 1) and those with non-standard working hours (categories 2–8). The second variable divides non-standard schedules between predictable (responses 2, 3, 4, 5) and unpredictable (on call, casual, or irregular, i.e., responses 7 and 8). We used the same criteria to measure partners'/spouses' work schedules. Respondents in category 9 (other) were dropped from the analysis as it was not possible to classify them.

Flexible time was measured based on the following question, "Do you have a flexible schedule that allows you to choose the time you begin and end your work day?" Positive answers were coded as 1. We also included controls for number of hours worked and occupational categories. Working hours were classified into "less than 15 hours a week", "between 15 to 29", "between 30 and 40", and "more than 40 hours a week". In addition, we classified occupations into "white-collar jobs", which comprised management and professional occupations, technologists, technicians, and technical occupations; "pink-collar jobs", which covered clerical and sales and service occupations; and "blue-collar jobs", which involved trades, transport, and equipment operators and related occupations, occupations unique to primary industries, and occupations unique to processing, manufacturing, and utilities. A dummy for self-employment was included.

In order to measure the availability of paid home services, we added a categorical variable measuring whether or not the respondent regularly hired paid household help, such as childcare, house cleaning, and outdoor work. In addition, we included controls for children's age range. We distinguished between couples that had all their children in

preschool (0–4), primary school (5–12), and high school ages (13–17). We also included categories comprising multiple age groups, one comprising couples with all their children between ages 5–12 and 13–17, and another of couples having at least one child between 0 and 4 and other children in any of the other age groups. Furthermore, information on respondents' time spent on childcare and housework time was also included in all models. This information was derived from the time diaries. The pre-coding of activities into housework and childcare categories was done by Statistics Canada. Childcare included the following activities: helping children, reprimanding, reading with children, talking/conversation, playing with children, food preparation for children, feeding, putting them to bed, getting them ready for school, personal care for children, medical care, other non-educational help, and commuting to/from school or day-care. Housework included: meal preparation, indoor and outdoor cleaning, laundry, ironing, folding laundry, interior and exterior maintenance and repairs, and other domestic/household work. Original variables were expressed in minutes: we converted these into hours, and classified responses into four categories: none, 1 to 3 hours, 4 to 6 hours, and 7 hours or more a day. Partners/spouses' participation in housework was also measured to address the gender division of household labor. The information was reported by respondents, who were asked to estimate the number of hours their partners spent on housework in the week before the interview[6]. Respondents could choose from the following categories: 0 hour, 1–14 hours, 15–29 hours, 30 hours or more.

Marital status and family structure were also taken into account. For marital status we differentiate married couples from those living in common-law unions (marriage was used as a reference category). In addition, we identified families with only biological and adopted children and stepfamilies with or without children common to the couple. We also included a series of dummy variables to capture the household annual income and the respondent's level of education. Finally, we added a flag variable to control for whether the interview took place on a weekday or during a weekend, with Saturday and Sunday coded as 0 and the other days coded as 1.

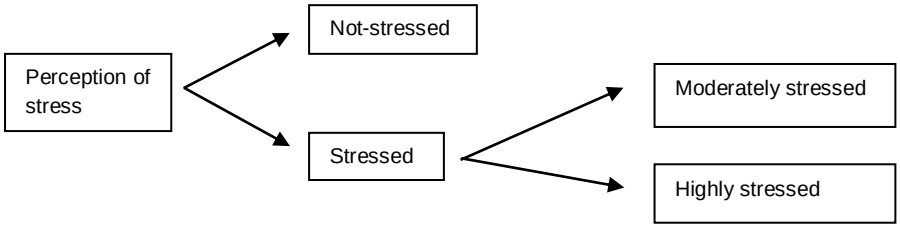
4.2 Method

Two logit regressions were run in a sequential manner to estimate the effect of the explanatory variables. We first estimated the odds of being stressed rather than not

[6] We recognize that differences in measures between respondents and spouses' housework time make the comparison difficult; however, we decided to keep time-diary responses for respondents since they provide more precise information on time use. In addition, our aim was not to compare the amount of time spent on childcare, but rather to control for partners' total participation in housework to estimate its effects on respondents' perceived time stress.

experiencing any stress. However, we also acknowledge that it makes a difference whether an individual experiences moderate or severe levels of stress. Thus, in a second step, we focused only on those who reported some stress and distinguished between individuals who were highly stressed and those who were only moderately stressed (see Figure 1). Using sequential logit models had several advantages. First, it provided a clearer picture of differences between the stressed and non-stressed individuals than multinomial logit, as it compares these two groups directly in the first step. Second, the two-step modeling process offered a clearer picture of how various control variables intervened in different processes.

Figure 1: Modeling strategy in the sequential logit models



We estimate four models for each outcome. Model 1 estimates the overall difference between respondents working standard and non-standard schedules after adjusting for all control variables (i.e., occupation, employment status, paid home services, time spent on childcare and domestic chores, age of children, marital status, family structure, household income, education, and the day of data collection). Model 2 adds predictability to the equation and explores the question of whether non-standard schedules are less stressful if they are predictable. Model 3 tests whether non-standard schedules are less stressful if they are flexible and the worker can choose when to start and end his/her work. Finally, Model 4 considers both flexibility and predictability simultaneously. All models are estimated separately for mothers and fathers.

5. Results

Table 1 reports descriptive statistics. It shows that men tend to work longer hours than women. In our sample, more than 80% of fathers worked more than 40 hours per week whereas only two-fifths of mothers did. By contrast, there were three times as many women who worked less than 30 hours per week than men. Fathers not only worked

longer hours but were also slightly more likely to have flexible and non-standard schedules. In our data, 46% of fathers reported having flexible working hours and 26% non-standard schedules, compared to 42% and 25% of mothers respectively. By contrast, women devoted significantly more time to childcare and domestic work. Over 58% of male respondents did not report doing any domestic chores and 54% did not spend any time on childcare in the observed day (compared to 29.1% and 43.7% of women). Finally, mothers appeared to be more stressed than fathers (78.5% versus 75.9%) but fathers were slightly more likely to experience very high levels of stress.

Table 1: Descriptive statistics

		Fathers	Mothers
Level of stress	Not stressed	24.1	21.4
	Moderately stressed	47.2	53.0
	Highly stressed	28.7	25.5
Work schedule	Standard & Predictable	74.1	75.1
	Non-standard & Predictable	16.4	14.0
	Non-standard & Unpredictable	9.5	10.9
Partner's work schedule	Standard hours	74.4	76.4
Flexible time	Yes	46.0	42
*Hours worked per week	Less than 15 or Between 15 and 29	2.2	21.7
	Between 30 and 40	13.5	30.8
	More than 40	84.3	47.5
Occupation	White-collar job	44.6	53.8
	Pink-collar job	24.4	42.1
	Blue-collar job	30.9	4.1
Employment	Employee	81.5	83.7
	Self-employed	18.4	16.2
Paid home services	Yes	44.2	43.2
	None	58.5	43.7
Childcare time. Hours per day	1–4 hours	31.6	34.8
	More than 4 hours	9.9	21.5
	None	54.2	29.1
Housework time. Hours per day	1–4 hours	35.2	46.8
	More than 4 hours	10.6	24.1
	None	6.3	16.1

Table 1: (Continued)

		Fathers	Mothers
*Partner's housework time	1–14 hours	4.8	72.5
	15-29 hours	33.0	9.0
	More than 30	12.7	2.3
Children age group	Only 0–4	22.6	21.5
	Only 5–12	26.4	28.7
	Only 13–17	20.2	17.9
	Between 5–12 and 13–17	13.3	15.8
	At least one child in 0–4 and others in other age groups	17.5	16.2
Marital status	Married	85.8	86.8
	Cohabiting	14.2	13.2
	Couple with only biological or adopted children	90.7	92.7
Family structure	Step-family with common children	4.4	3.6
	Step-family without common children	5.0	3.8
	Less than $39,000 CAD	3.3	5.1
	$40,000–$79,999 CAD	23.1	25.0
Household income	$80,000–$149,999 CAD	44.2	45.2
	$150,000 or more CAD	22.0	16.2
	Not stated	7.5	8.5
	Elementary/No schooling	5.5	2.4
Education	High school diploma	11.2	8.0
	College certificate/diploma	46.5	46.5
	University level	36.8	43.1
Day of the time diary	Weekdays	75.7	75.5
Unweighted N		867	1065

Source: GSS 2010, Statistics Canada. *Note: Given strict disclosure rules set by Statistics Canada, we are not able to show percentages for all the categories of these covariates.

Table 2 shows the proportion of stressed individuals according to type of work schedule. It suggests that the percentage of fathers with standard and non-standard schedules who reported being stressed is similar. Hence, 75.8% of fathers with standard work hours and 76.3% of those with non-standard schedules reported being stressed. Contrary to our first hypothesis, descriptive statistics suggest that non-standard schedules are linked to decreased levels of stress among mothers. Hence, 82% of mothers with standard schedules reported some stress compared to only 68% of those with non-standard schedules. Moreover, among mothers who felt highly stressed, a higher percentage worked standard (27.2%) rather than non-standard schedules

(20.4%). Nevertheless, the table reports only crude differences and the statistical significance of the observed differences was not tested.

Table 2: Levels of stress and working schedules

		Fathers	Mothers
Standard schedules	Not stressed	24.3	18.0
	Moderately stressed	46.8	54.7
	Highly stressed	29.0	27.2
Non-standard schedules	Not stressed	23.7	31.7
	Moderately stressed	48.2	47.9
	Highly stressed	28.1	20.4
Unweighted N		867	1065

Source: GSS 2010, Statistics Canada

5.1 Multivariate models – Who is stressed?

In the first step, we estimate the odds of being generally stressed most days after controlling for socio-demographic characteristics and work- and family-related confounding factors (Table 3). Model 1 tests whether individuals with non-standard schedules experience more stress than those with standard schedules, as was predicted in Hypothesis 1. In the male sample, the association between non-standard schedules and stress is positive even though the difference between fathers with standard and non-standard schedules is not significant. However, contrary to our prediction, mothers with non-standard schedules are found to be significantly less stressed. Model 1 indicates that women with non-standard working hours have approximately 40% lower odds of being stressed than those in standard jobs. Thus the finding observed in the descriptive statistics is confirmed even in the model that removed the effect of possible confounding factors. This model also suggests that the link between non-standard hours and stress is very different for fathers and mothers, as was predicted in Hypothesis 4. Yet Model 1 does not consider possible differences between various types of non-standard schedule.

Model 2 distinguishes between predictable and unpredictable non-standard schedules. Hypothesis 2 suggested that non-standard work hours are particularly harmful if they are unpredictable and that predictability should mitigate some of the negative effects of having non-standard schedules. Our analysis corroborates this thesis. Among fathers, the differences are again not statistically significant but the size of the estimated odds ratios goes in the predicted direction. Among mothers, non-standard

schedules appear to be particularly beneficial if they are predictable. Mothers with non-standard and predictable working hours have approximately 50% lower odds of being stressed than those with standard jobs. Even though it seems that non-standard hours are beneficial for mothers even if they are unpredictable, the difference between standard and non-standard unpredictable hours is not statistically significant.

Table 3: Estimated odds ratios for sequential logit models of perceived levels of stress among working parents. Canada, 2010

	Fathers								Mothers							
	Stressed vs. Non-stressed				Highly vs. Moderately				Stressed vs. Non-stressed				Highly vs. Moderately			
Variables	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4
Work schedules (standard)																
Non-standard	1.26				1.02				0.61*				0.94			
Work schedule & Predictability (Standard & Predictable)																
Non-standard & Predictable		1.11		1.17		1.16		1.13		0.52*		0.52*		0.98		0.97
Non-standard & Unpredic-table		1.81		1.82		1.30		0.67		0.78		0.77		0.88		0.89
Flexible hours (No) *Yes*				1.29				0.90				1.07				0.89
Schedule & Flexibility (Standard & Non-flexible)																
Standard & Flexible			1.14				1.10				1.09				0.92	
Non-standard & Non-flexible			1.08				1.31				0.61				1.00	
Non-standard & Flexible			2.49*				0.58				0.68				0.76	
Unweighted N	867								1065							

Source: GSS 2010, Statistics Canada. Note: The models control for all the covariates included in Table 4.

Model 3 tests Hypothesis 3 and explores the question of whether flexibility mediates some of the negative implications of non-standard schedules. In contrast to our hypothesis, flexibility does not seem to matter for women. Mothers with flexible and non-flexible hours experience a very similar risk of being stressed. This conclusion holds for mothers with both standard and non-standard hours (see Model 3). Among fathers, flexibility is only weakly linked to stress except for those who have flexible non-standard schedules. Contrary to our hypothesis, these men face 2.5 times higher odds of being stressed than those in standard non-flexible jobs and 2.3 times higher odds than those in non-standard non-flexible jobs (2.49/1.08 = 2.3). This result might be surprising at first sight. However, flexibility might not always be beneficial. The

opportunity to choose when to work might lead to blurred boundaries between work and other domains of life and to an inability to free oneself from work requirements (Peters, den Dulk, and Van der Lippe 2009). It is possible that this problem is particularly pressing among men with non-standard schedules.

Finally, Model 4 includes both predictability and flexibility. As it was not possible to include both sets of interactions into the model due to collinearity, Model 4 uses only a single measure of flexibility. The conclusion that it is the predictability, not flexibility, which matters for mothers is confirmed even when both predictability and flexibility are entered into the model. In the male sample the estimated size of odds ratios for predictability practically does not change when flexibility is added to the model. Thus the overall effect of flexibility is also relatively weak and non-significant in the male sample. Flexibility seemed to matter only for a specific sub-group of men (i.e., those with flexible non-standard schedules) and, contrary to our prediction, it was associated with an elevated risk of stress.

Table 4 reports the Model 4 odds ratios of all covariates. This table suggests that there is no link between partners' work schedules and respondents' perceptions of stress. To fully understand the household dynamic of non-standard schedules we estimated an additional model that interacted respondents' and their partners' schedules (results available upon request). Even though none of the differences were significant, there was some indication that fathers with non-standard schedules are more likely to report being stressed if their partners work standard hours. In the female sample, non-standard schedules remained associated with lower reports of stress, irrespective of the partner's schedule.

None of the work-related covariates appear to significantly influence the likelihood of feeling stressed, except for occupation. Table 4 shows that women working in pink-collar occupations are significantly less stressed than those in white-collar jobs. However, a separate analysis showed that men with blue-collar jobs are less stressed only if they work standard schedules (results available upon request). By contrast, blue-collar workers with non-standard schedules face higher risks of stress. Among women, pink-collar occupations are less stressful for both women working standard and non-standard schedules. Nevertheless, the benefits of pink-collar occupations appear to be stronger among women with non-standard schedules.

As for other covariates, only access to paid domestic services, children's age, and family structure are significantly associated with stress, and these only among women. This result supports Hypothesis 5, predicting that family-related covariates will be more important for mothers than for fathers. Mothers are found to be more stressed if they live with teenagers and in a stepfamily. Moreover, living with teenagers appears particularly stressful for mothers with standard schedules, suggesting that the stress might be partly linked to the lack of opportunity to monitor children's behavior (model

not reported in the table but available upon request). Indeed, there is some previous empirical evidence that parents with non-standard working schedules monitor their adolescent children more (Han and Waldfogel 2007). Furthermore, mothers who cannot rely on any paid domestic services are 2.4 times more likely to be stressed than those who are using paid help. We also tested whether the availability of paid domestic help is more important for mothers with non-standard schedules because they cannot rely on standard childcare services (not reported in the table, available upon request). The data indicated that having a domestic help decreases maternal stress, but the effect is nearly identical between women with standard and non-standard jobs.

Table 4: Estimated odds ratios for sequential logit models of perceived levels of stress among working parents. Canada, 2010. (Model 4)

		Fathers		Mothers	
Variables		Feeling stressed (Ref.: Not stressed)	Highly stressed (Ref.: Moderately)	Feeling stressed (Ref.: Not stressed)	Highly stressed (Ref.: Moderately)
Work schedule (Standard & Predictable)					
	Non-standard & Predictable	1.17	1.13	0.52*	0.97
	Non-standard & Unpredictable	1.82	0.67	0.77	0.89
Flexible hours (No)	*Yes*	1.29	0.90	1.07	0.89
Partner/Spouse work schedule (Standard & Predictable)					
	Non-standard & Predictable	1.06	1.39	1.25	1.29
	Non-standard & Unpredictable	1.14	0.54*	0.99	1.23
Hours worked per week *(Less than 15)*					
	15-29	0.18	3.73	0.52	2.02
	30-40	0.40	1.65	0.94	3.15*
	More than 40	1.00	2.82	0.99	3.62**
Occupation (White-collar jobs)					
	Pink-collar jobs	0.77	0.91	0.52**	0.67
	Blue-collar jobs	0.75*	0.72	0.72	0.95
Employment (Employee)	*Self-employed*	1.33	1.35*	0.70	1.04
Paid home services (yes)	*No*	1.12	1.28	2.38***	1.24
Childcare. Hours/day (None)	*1-3 hours*	0.73	1.65	1.46	0.94
	4 hours or more	0.95	1.87	0.90	1.27
Housework. Hours/day (None)	*1-3 hours*	0.94	0.87	1.07	1.09
	4 hours or more	1.14	1.50	0.90	0.76
Partner/Spouse housework. Hours/week (None)					
	1-14 hours	0.92	0.57	1.45	0.15
	15-29 hours	1.55	0.87	0.74	1.44
	30 hours or more	2.37	1.55	1.55	0.22*
Children age groups (Only 0-4)					
	Only 5-12	1.03	0.80	1.36	1.24
	Only 13-17	0.63	1.39	2.95**	1.06
	5-12 & 13-17	1.15	1.69	2.55**	1.18
At least one in 0-4 and other children in the rest of groups		1.04	1.23	1.39	1.16
Marital status (Married)	*Cohabiting*	1.10	1.69*	1.13	1.90*

Table 4: (Continued)

Variables		Fathers		Mothers	
		Feeling stressed (Ref.: Not stressed)	Highly stressed (Ref.: Moderately)	Feeling stressed (Ref.: Not stressed)	Highly stressed (Ref.: Moderately)
Family structure (Only biological or adopted children)					
Step-families with common child		0.57	0.55	4.18*	1.64
Step-families without common child		1.10	0.66	1.02	1.58
Household income (Less than $39,999)					
$40,000-$79,999		0.72	0.67	0.58	0.95
$80,000-$149,000		0.71	0.69	0.52	0.72
Education (Elementary)					
$150,000 or more		0.91	0.45	0.54	0.86
University degree		1.48	1.14	0.79	0.69
College diploma/certificate		1.32	0.80	0.61	0.80
High school diploma		2.02	0.73	0.50	0.83
Day of the time diary	*Weekdays*	0.87	1.14	0.59	0.88
Constant		2.84	0.46	0.61	0.19
Unweighted N		867		1065	

Source: GSS 2010, Statistics Canada

5.2 Multivariate models – How much are parents stressed?

Models in the previous section demonstrate that mothers with non-standard schedules are less likely to feel stressed most days but that fathers tend to find non-standard schedules more stressful than having standard 9am to 5pm jobs. These results indicate that there is a link between schedule and the overall risk of being stressed, but do not say anything about how much stress mothers and fathers experience. Therefore in the next step we tested the difference between feeling moderate and high levels of stress. Table 3 shows that when we compare respondents who report being "quite a bit" or "extremely" stressed to those being just "a bit stressed", there is generally no difference between workers with non-standard and standard hours. Fathers and mothers with non-standard schedules have practically the same odds of being highly stressed than their vis-à-vis in standard jobs (odds ratios of 1.02 for fathers and 0.94 for mothers). There is also no clear tendency with respect to flexibility and predictability.

As for other covariates, Table 4 suggests that men are much less likely to experience very high levels of stress if their wife/partner works non-standard and unpredictable hours. It is possible that these women work in some relatively casual or semi-regular jobs that give them an opportunity to take the bulk of domestic responsibilities. In turn, this releases men from the necessity of being intensively involved in running the household and decreases their stress. Furthermore, men in blue-

collar jobs generally face lower risk of extreme stress. By contrast, self-employment puts fathers at risk of experiencing very high levels of stress. None of these factors matters for mothers. In their case, the risk of experiencing very high levels of stress is linked primarily to the number of hours worked per week. Only one factor seems to alleviate the risk of high levels of stress among mothers: having a partner who actively participates in domestic chores. Finally, stress levels appear to be particularly high among cohabiting couples. This finding holds for both mothers and fathers. This might be surprising, given the increasing functional similarity between married and cohabiting unions. However, a growing body of literature demonstrates that marital and cohabiting unions are not identical even in societies where cohabitation is highly institutionalized (Hamplova, Le Bourdais, and Lapierre-Adamcyk 2014). For instance, cohabitors, on average, have lower incomes than married couples and lower access to family support. All these factors might contribute to higher levels of stress among cohabitors.

6. Discussion and conclusion

Non-standard work schedules are often viewed as an important life stressor and many authors argue that non-standard working hours are associated with the risk of burnout, emotional exhaustion, stress, and health problems. However, empirical studies do not univocally support the idea that such work arrangements are indeed harmful. The ambiguity of empirical evidence suggests that non-standard schedules are present in diverse work and life situations and might not always have negative consequences for workers and their families.

This paper tested the hypothesis that the association between non-standard hours and stress is mediated by the flexibility and predictability of the work schedule. Specifically, we expected individuals working non-standard hours to be more stressed than those working standard hours, but that the predictability of the schedules would mitigate some of the negative consequences associated with non-standard schedules. Similarly, we predicted that flexibility, i.e., the opportunity to choose when to start and when to finish work, would alleviate part of the harmful effect of non-standard schedules. Furthermore, we argued that non-standard schedules have different implications for men's and women's well-being because both genders face different time constraints.

Our analysis of the Canadian 2010 GSS confirms that the link between non-standard working hours and perceived stress differs between mothers and fathers. Although the results were not statistically significant in the male sample the estimated odds ratios went in the predicted direction, suggesting that fathers with non-standard schedules are more stressed than those with standard working hours. However, we

found that the opposite holds for mothers. In their case, having a non-standard schedule was associated with a significantly lower risk of experiencing stress. This result suggests that women use non-standard forms of employment as a means to achieve better life-work balance. However, the benefits of non-standard schedules appeared to be limited to situations where the working hours were predictable. We could not confirm that unpredictable non-standard work hours were significantly different from standard schedules.

Even though the empirical analysis confirmed the existence of a link between schedule and stress, especially among women, our data did not reveal a significant association between non-standard schedule and the experienced level of stress. In other words, non-standard schedules predict whether workers are stressed but not whether they experience high or low levels of stress.

As for the mediating role of flexibility and predictability, the GSS data indicated that predictability is more important than flexibility. Thus those with non-standard predictable schedules were less stressed than those with non-standard unpredictable hours (and in the female sample also less stressed than those with standard employment arrangements). Yet work flexibility did not seem to bring any additional advantage to women. Among fathers, flexibility even seemed to increase stress, particularly for those having non-standard schedules. The relatively weak and even negative implications of flexibility might be surprising. However, there is some evidence that flexibility might not always be good for workers. For example, time-spatial flexibility might increase stress because it leads to blurred boundaries between work and private life and makes it more difficult to be free from work (Peters et al. 2009).

In general, our results concerning the negative association between non-standard work schedules and stress raise questions about the selection of mothers into the various categories of work schedule. Our analysis is based on cross-sectional data and cannot address individuals' movements into and from jobs with non-standard schedules. It is likely that women who find these work arrangements particularly stressful might either leave these jobs or even drop out of the labor market. Consequently, the pool of mothers working non-standard schedules that are observed at a given point of time might consist of particularly resilient women or of women whose situations make the balance of family and work easier.

Our analysis also suffers from other limitations. For instance, we were not able to fully examine joint decision-making among two-parent households, given that only one adult per household provided the time-use information collected in the 2010 GSS on both partners. Our results regarding the impact of both parents' work schedules and housework time on the experience of stress thus need to be regarded with caution. Finally, additional research examining the moderating effects of occupations is needed

in order to fully understand the relationship observed between non-standard schedules and the perception of stress among employed parents.

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