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UNINTENDED CONSEQUENCES OF JOB REDESIGN

Psychological contract violations and turnover intentions among full-time and reduced-hours MDs and LPNs

Researchers and practitioners have cited the advantage of such flexible work scheduling options as flex-time, compressed workweeks, job sharing, and reduced hours for employees. The assumption underlying these options has been that more flexible schedules allow employees to meet their family requirements and still work a sufficient number of hours to advance in their careers. In this paper we focus on the unintended consequences of such job-design modifications. In particular, we explore the impact of reduced-hours career options for women in the healthcare sector. One potential consequence of reduced hours concerns the effects of violations of psychological contracts, or the beliefs that employers and employees hold regarding their mutual obligations. We test two hypotheses that state that professionals and reduced-hours employees are more likely to express an intention to turn over when such contracts are violated. We test these hypotheses in a random sample of 178 Boston-area married female healthcare workers who are in dual-earner couples, who have at least one child under high-school age, and who vary in professional status and in work schedule. The results support both hypotheses and suggest that reduced-hours employment can have unintended consequences for employees and their organizations.

Keywords work redesign; psychological contract violations; part-time work; professional and non-professional employees

Investigadores y practicantes han citado las ventajas de horarios de trabajo flexibles como "flex-time", semanas de trabajo comprimidas, trabajos compartidos y jornadas de trabajo disminuidas. Se assume que las jornadas de trabajo flexible, permiten a los empleados cumplir con sus compromisos familiares mientras trabajan un suficiente número de horas para continuar avanzando en sus carreras. En este artículo nos enfocamos en las

consecuencias inesperadas de este tipo de cambios en el diseño de jornadas de trabajo. Exploramos particularmente el impacto de horas reducidas para mujeres en sectores laborales de salud. Una consecuencia de horas reducidas es posiblemente asociada con los efectos de las violaciones de contratos psicológicos, o el credo que los empleados y patronos mantienen con respecto a sus mutuas obligaciones (Rousseau, 1995). Evaluamos dos hipótesis que plantean que los profesionales y empleados trabajando jornadas de horas reducidas están más dispuestos a expresar la intención de renunciar cuando este tipo de contrato es violado. Evaluamos esta hipótesis con una muestra aleatoria de 178 mujeres casadas en Boston quienes trabajan en el sector de salud y en familias donde ambos padres trabajan tiempo completo, quienes tienen por lo menos un niño de menos de 14 años y que varían en estatus profesional y en horarios de trabajo. Los resultados apoyan las dos hipótesis y sugieren que las horas reducidas en la jornada de trabajo pueden tener consecuencias inesperadas para los empleados y sus empresas.

Palabras clave rediseños de trabajo; violaciones de contratos psicológicos; jornada de medio tiempo; profesionales y empleados no-profesionales

Organizations have widely embraced the option of flexible working hours as a way of better meeting the needs of their employees. In 2001, 29 million full-time wage and salary workers had flexible schedules (Applebaum & Golden, 2003). The most common options include flex-time, compressed workweeks, job sharing, and reduced hours. These programmes have been introduced to support workers' attempts to achieve better work–family balance by reducing work–family scheduling conflicts and reducing the overload experienced particularly by women with work and family responsibilities. These programmes also help organizations by increasing workplace flexibility, giving them a competitive advantage in hiring and retention, and, for some options, reducing wages and benefits.

The work redesign perspective encompasses a number of theoretical traditions. Work simplification (Taylor, 1967), job enrichment (Hackman & Oldham, 1980), job enlargement (Kilbridge, 1960), and the sociotechnical approach (Fox, 1995) offered limited possibilities for revising work processes to better bridge work and family needs (Bailyn & Harrington, 2004). The introduction of alternative work schedules provided a redesign option that influenced employees' ability to do their work and simultaneously meet their family responsibilities (Cohen & Gadon, 1978; Pierce, Newstrom, Dunham, & Barber, 1989). Workers' control of the timing and location of work helps them manage potential conflicts between work and personal life (Applebaum, Bailey, Berg, & Kalleberg, 2002; Bailyn, Drago, & Kochan, 2001). Employees who value work–life balance and employers with employees who have significant family responsibilities have considered flex-time, reduced hours, job sharing, other part-time employment, and compressed workweeks as a panacea for the challenges and stresses of juggling work and non-work demands.

Although some researchers and executives have debated the costs of alternative work schedules to organizations (Kossek, Barber, & Winters, 1999), most have viewed the outcomes as confirming the value of such schedules for employee satisfaction, reduced absenteeism, loyalty, stability, and productivity (Elijas, 2001; Harrick, Vanek, & Michlitsch, 1986; xMcGuire & Liro, 1986; Pierce et al., 1989). In addition, specific case examples suggest the positive impact of flexible schedules.

Aetna Health Care in Hartford, Connecticut, for example, has used flexible work arrangements to meet customer demands for 24/7 support and to control turnover (Anonymous, 2001). At John Hancock, flexible hours increased morale and productivity (Greenwald, 1998). These companies assumed that employees were more likely to remain with organizations that offered them the flexibility to design or modify their work schedule. In addition, executives assume that employees will be more attracted to and less likely to leave such an organization, that individual use of flexible schedules will not hinder career advancement, and that productivity will not suffer as a result of such flexibility.

In spite of generally positive results, there is some indication that impact of alternative work schedules is more complicated. For example, some negative direct effects exist (Barnett & Gareis, 2002; Boston Bar Association Task Force on Professional Challenges and Family Needs, 1999), suggesting that researchers need to look beyond main effects to explain the differences. Research on flexible schedules has ignored the indirect effects of numerous variables related to organizational design, task structure, and characteristics of managers and employees (Rainey & Wolf, 1981). Inconsistencies in results may be explained in part by the interaction of these variables with particular work redesign features, such as specific work schedules. For example, a variety of individual, job content, work group, and organizational factors can facilitate the success of reduced-hours arrangements (Lee, MacDermid, Williams, Buck, & Leiba-O'Sullivan, 2002). In this paper, we look beyond main effects. We examine the interaction of occupation and work schedule on the relationship between psychological contract violations (PCVs) and intention to turn over; specifically, we study physicians (MDs) vs. licensed practical nurses (LPNs) with full-time and reduced-hours schedules.

Shortages of nurses and predicted shortages of physicians have caused the healthcare industry to look for new ways of attracting and retaining employees. In particular, hospitals have introduced reduced-hours options as a way of better integrating individual and organizational needs. Yet, differences in the availability of such schedules have existed for healthcare workers who vary in professional status. For example, reduced-hours schedules for MDs have been particularly rare and are usually negotiated on an individual basis. LPNs, in contrast, more likely have reduced-hours options that are part of standard employment contracts. The expectations of MDs and LPNs about what their job involves and what their employer requires from them likely differ significantly. The expectation among MDs and their employing organizations is that medicine is a calling, and, therefore, 'real' MDs work long hours (Lundgren & Barnett, 2000). LPNs, in contrast, may view their jobs as stepping stones to becoming registered nurses and so they see their responsibilities more as a job than a calling. In addition, their expectations are typically formalized in their employee contracts.

The research presented here compares the impact of reduced hours for these two groups of healthcare professionals. It examines the unintended consequences of job-design modifications for a group of MDs and LPNs. In particular, it looks at the effects of violations of psychological contracts, i.e. the beliefs that employers and employees hold regarding their reciprocal obligations (Rousseau, 1995), on women's intention to change jobs. Because work-life balance remains a gendered issue, where the integration of the two domains seems primarily a concern for women with

childcare or eldercare responsibilities, our sample includes only women. However, the results likely and increasingly apply to men, suggesting that they, too, face the increasing challenge of integrating their personal needs with the demands of their workplace (Kush & Stroh, 1994).

Because most research on PCVs involves samples of full-time professional employees, we know relatively little about the impact of PCVs on intention to turn over among non-professional workers or among reduced-hours employees. The likelihood of PCVs may be higher among reduced-hours professionals than among both reduced-hours non-professionals and full-time employees, whether professional or not. Alternatively, it may be that when such contracts are violated, professionals (regardless of work schedule) or reduced-hours employees (regardless of professional status) are more likely to express an intention to turn over. In this paper, we examine these issues in a random sample of 178 Boston-area married female healthcare workers who vary in professional status, in work schedule, and who are in dual-earner couples with at least one child under high-school age.

Literature review

Several factors drive the use of reduced hours in job design. US workers put in many more hours per week (or per year) than workers in other countries (Padavic & Reskin, 2002). US workers, especially highly educated professionals and managers who work long hours, are very dissatisfied with their work schedules and express a desire to work fewer hours (Bond, Galinsky, & Swanberg, 1998; Jacobs & Gerson, 1997). The inference, supported by some (if not all) research and reinforced by popular belief, is that long work hours is a major stressor (Hochschild, 1997; Perlow, 1997). The same reasoning holds that shorter hours afford employees flexibility, thereby increasing quality of life (QOL), reducing work-related stress, and improving job performance. However, the existing assumptions about the positive value of reduced hours have not been generally challenged. Do reduced hours have significant unintended and negative consequences, and what are the implications for organizations and their employees?

Consequences of reduced-hours careers

Overall, research both in the USA and in Europe on the main-effects relationship between the number of hours worked and distress and QOL outcomes is inconclusive (Herold & Waldron, 1985; Nordenmark, 2002; Wethington & Kessler, 1989; see Barnett, 1998 for a review). Some studies find either no relationship or a positive relationship between number of hours worked and outcomes. For example, in the present sample, those MDs who worked longer hours reported better marital-role quality than those who worked fewer hours (Barnett & Gareis, 2002). Moreover, dissatisfaction and turnover were higher among reduced-hours law associates than those working full-time (Boston Bar Association Task Force on Professional Challenges and Family Needs, 1999). Thus, at least among professionals, reduced hours may have negative personal and organizational consequences.

Other studies find that subjective indicators of work schedules are better

predictors of QOL outcomes than is the objective number of hours worked. For example, in the present sample, among the MDs, schedule fit was a significant predictor of five QOL outcomes (psychological distress, life satisfaction, burnout, job-role quality, and marital quality), whereas number of hours worked was significantly related to none (Gareis & Barnett, 2001). Further, Hartwell (2003) found that in a sample of full-time and reduced-hours physicians, psychological contract fulfilment was a strong predictor of four work-related outcomes (intention to leave one's job, intention to leave the field of medicine, burnout, and career satisfaction), whereas the number of hours worked was significantly related to only work-family interference. This body of literature suggests strongly that subjective indicators of work schedules need to be the focus of research on unintended consequences of schedule-driven job design, especially where substantive norms influence schedule expectations.

Psychological contract violation and work-related outcomes

One subjective indicator — psychological contracts — has received scant attention in the job stress-illness literature. 'Psychological contracts consist of the beliefs employees hold regarding the terms of the informal exchange agreement between themselves and their organizations' (Turnley & Feldman, 1999, p. 897; see also Rousseau, 1989, 1990). Psychological contracts are based on perceived promises of future intent. This intent can be conveyed via written documents, oral discussion, organizational practices or policies, and so on. PCVs occur when an employee perceives that the organization has failed to fulfil one or more of its obligations under the psychological contract (Rousseau & Parks, 1993) and has a strong emotional response (Morrison & Robinson, 1997) to the perception. PCVs '[do] not necessarily correspond to "objective reality," because psychological contracts, by definition, are in the minds of employees' (Morrison & Robinson, 1997, p. 227, fn. 1).

Interest in psychological contracts has been growing within the management literature. Researchers have found that PCVs decrease employees' trust in their employers, job satisfaction, satisfaction with their organizations, perceived obligation to their organizations, and intention to remain (Larwood, Wright, Desrochers, & Dahir, 1998; Robinson, 1996; Robinson & Rousseau, 1994). PCVs can cause employees to reduce their contributions and even leave the organization (Robinson & Rousseau, 1994).

Indirect effects: professional status

The research to date has focused primarily on the direct effects of PCVs on job-related outcomes (Robinson, Kroatz, & Rousseau, 1994; see Conway & Briner, 2002 and Turnley & Feldman, 1999 for exceptions). However, as Bronfenbrenner and Crouter (1982) note, the study of main effects alone: 'involve(s) a leap from the very start of the causal process directly to the outcome, leaving everything in between to the imagination' (p. 71). The study of indirect effects can illuminate the process by which PCVs affect employees, allowing us to delineate the specific conditions under which PCVs will lead to particular outcomes. As noted above, most previous studies of PCVs were done on samples of professionals (Bunderson, 2001)

because it is assumed that they are more likely than non-professional employees to experience PCVs.

Reduced-hours careers in the healthcare sector

In the USA, the healthcare sector has undergone dramatic transformations in recent years. HMOs have forced changes in the practice of medicine. Widely publicized shortages of nurses and nursing professionals have led to complaints about overwork, understaffing, and increased risk of medical errors. The mean age of nurses is increasing, and fewer are choosing to enter nursing. MDs also face bleak forecasts about the stability of their profession. Currently, there is a decrease in demand for specialists and predictions of a future oversupply of MDs. 'Considerable concern is being expressed that the new managed-care climate will have serious negative consequences for the future of the medical profession' (Lundgren & Barnett, 2000). Between 2001 and 2002, the number of medical school applicants dropped by four per cent (Association of American Medical Colleges, 2002). Employers have begun to offer reduced-hours career options in response to these concerns and trends.

In this paper we look at two professions in the healthcare sector: MDs and LPNs. MDs are more likely to experience PCVs based on the conflict between the expectations MDs develop during their socialization into the medical profession and the expectations of their employing organizations, which are increasingly bottom-line oriented and bureaucratized (Bunderson, 2001). For example, MDs are trained to expect that in return for their hard-won expertise, long work hours, and devotion to their patients, they will be treated with respect, their medical decisions will be accepted without question, and they will have job security. Given the bureaucratic nature of today's medical settings (Bunderson, 2001) and their concomitant decrease in autonomy, MDs' expectations about mutual obligations may be frustrated. The nature of MDs' work today may conflict with their beliefs about the way medicine should be practised. Moreover, because of their intense professional socialization, MDs may be less tolerant of high levels of PCVs than LPNs and may be less willing to stay in a job that violates their psychological contracts. Bunderson (2001), in a study of full-time clinicians (MDs, physician assistants, nurse practitioners, and registered nurses), reported that perceived breaches were associated with thoughts of quitting. However, Bunderson did not estimate the moderating effect of specific occupations on these relationships.

According to Morrison and Robinson (1997), more powerful employees, such as professionals, may be more likely to perceive psychological contract breaches because they may have a greater sense of entitlement than less powerful employees. In contrast to MDs, LPNs are less powerful employees and are not expected to be as strongly identified with their work as MDs. Entry into the LPN workforce requires far less rigorous training. Moreover, as discussed above, LPNs may see their profession less as an end in itself than as a rung on the ladder to becoming a registered nurse. However, LPNs also form psychological contracts. It is likely that these contracts concern such issues as staffing levels, patient counts, and appropriate duties. Like MDs, LPNs may experience PCVs if they are unable to meet their own standards of good patient care. LPNs' beliefs about mutual obligations on the job may be violated due to the drastic cost-cutting measures that have plagued the medical

community at large at the time that the data for this study were collected (1999–2001). One consequence of this belt tightening has been cuts in nursing staff, resulting in heavier workloads for those who remain on the job.

Morrison and Robinson's (1997) conclusion that less powerful employees would be less likely to perceive PCVs may be less applicable today. Current upheavals affecting the entire healthcare sector may mean that PCVs are high for all employees (Morrison & Robinson, 1997). Although the MDs and LPNs in the present sample work in a variety of settings, these settings share important features. They are all healthcare providers based in the Boston area. Thus, they are all affected by the pervasive downsizings and mergers in this area — conditions that have been associated with PCVs (Morrison & Robinson, 1997). Therefore, we do not expect that MDs and LPNs will differ in the level of PCVs. Based on the literature we hypothesize the following:

H1: Under conditions of PCV, MDs will be more likely than LPNs to report high intention to leave their job within a year.

Indirect effects: work schedules

Conway and Briner (2002) estimated the moderating effect of work schedules on the relationship between PCVs and work-related outcomes. Results did not support moderation, leading the researchers to conclude that part-time employees will respond as do full-time employees to adjustments in their psychological contract. Employees in a banking and a supermarket chain who participated in that study varied in professional status; yet status was not considered in the analysis, potentially affecting the interpretability of the results. Our belief is that professional status is critical to understanding the linkages between PCVs and intention to turn over.

With respect to full-time vs. reduced-hours work schedules, the MD and LPN cultures are very different. As discussed above, MDs, but not LPNs, and their employing organizations see medicine as a calling requiring extremely long work hours (Lundgren & Barnett, 2000). When employees hold matching beliefs about what they owe their employer and what they are owed in turn, these normative contracts become part of the social norms of the workplace (Rousseau, 1995). According to Rousseau and Parks (1993), personnel actions that are consistent with history and tradition will more often result in consensus among the parties about their contractual obligations than will inconsistent actions. Thus, the likelihood of matched expectations is higher among full-time than reduced-hours MDs. The expectation of very long work hours, in contrast, is not prevalent in the LPN culture.

Because of these expectations, reduced-hours schedules in medicine (and in the other professions) are relatively rare and are often negotiated by individual employees. Organizations may perceive reduced-hours MDs as less committed to their work than their full-time peers and may treat them accordingly. Support for this interpretation comes from studies indicating that reduced-hours professionals often feel exploited and marginalized at work (Barnett & Lundgren, 1998; Women's Bar Association of Massachusetts Employment Issues Committee, 2000). Other difficulties reported by reduced-hours professionals include problems with timely promotion (Levinson, Kaufman, & Bickel, 1993), assumptions that they are not

serious about their careers (Fein & Garfield, 1991), and the design of benefit programmes. Health insurance, for example, is less available to part-time workers (McGinnis & Morrow, 1990). Salaries are frequently not proportional to the amount of work required of part-time MDs (Fritz & Lantos, 1991), and on-call time is rarely adjusted for part-time status (Carr, Gareis, & Barnett, 2003). Compared to full-time MDs, reduced-hours MDs spend a greater proportion of their time on patient care and less time on research (Carr et al., 2003).

Despite these organizational responses, it is likely that MDs working reduced hours have the same beliefs about mutual obligations as do full-time MDs (P. Carr, personal communication, 15 December 2001): in exchange for hard work, dedication, and excellent patient care, they will receive respect, authority, and job security from their employers. Because personnel actions consistent with tradition and history more often produce consensus about contractual obligations than inconsistent actions (Rousseau & Parks, 1993), reduced-hours MDs may experience a mismatch between their own and their employing organization's expectations. When these differences become manifest, i.e. when they experience PCVs, MDs are likely to leave because they are uncomfortable holding unusual values and behaving differently (Schneider, 1987).

Reduced-hours schedules among LPNs are much more common. Employers' expectations are often formalized in employee contracts, and there are many role models within the medical setting that an LPN can use to develop her beliefs about mutual obligations. Because of these normative differences between LPNs and MDs, there is no stigma attached to working reduced hours among LPNs. Nor are there reports that reduced-hours LPNs feel marginalized on the job. Further, our data indicate that there are no differences between full-time and reduced-hours LPNs in the proportion of time spent on various professional activities. Yet in this period of cost-cutting, reduced-hours LPNs may be asked to pick up some of the slack caused by the overall shortage of nurses. If employers' expectations are more unrealistic for reduced-hours workers than for full-time workers, reduced-hours employees may be less willing to stay in their jobs in the face of PCVs. Based on this research, we hypothesize the following:

H2: Under conditions of PCV, reduced-hours MDs and LPNs will be more likely than their full-time counterparts to report high intention to leave their job within a year.

Covariates

Employees may vary in their sensitivity to PCVs. One source of this sensitivity is the tendency to see the world negatively. Sometimes this tendency is referred to as vigilance (Robinson & Morrison, 2000), but more often as negative affectivity (NA). This persistent, pervasive tendency toward negative emotionality can lead to spurious findings, especially in cross-sectional analyses relying on self-report measures to assess both predictors and outcomes. Therefore, we control for negative affectivity.

Also, because we focus on the relationship between PCVs and intention to turn over, it is important to control for demographic factors that might be associated with turnover. These include number of children in the home, years as an MD or LPN,

and job security. Specifically, the greater one's financial burden (e.g. the more dependent children one has), the less likely one might be to consider leaving one's job. Tenure in a job is another consideration; longevity might mitigate intent to leave. Finally, employees with low job security might be more likely to leave their jobs than those with high job security. We control for these demographic covariates in all analyses.

Method

Sample

The sample was drawn randomly from the databases of the Boards of Registration in Medicine and Nursing, which license all MDs and LPNs practising in the Commonwealth of Massachusetts. The 178 participants were Boston-area married female MDs ($N = 93$) and LPNs ($N = 85$) between 25 and 50 years of age who were in dual-earner couples, had at least one child under high-school age, and worked at least 20 hours per week.

The participants were stratified on full-time vs. reduced-hours work schedule, as defined by the participant's employer. In order to ensure that we had sufficient power to detect race/ethnicity effects, if any, we oversampled from among minority MDs and LPNs. Data for the MDs were collected between September 1999 and March 2001, whereas data for the LPNs were collected between March 2000 and October 2001.

The completion rate among the MDs obtained via random sampling was 49.2 per cent, whereas the completion rate among the LPNs was 29.6 per cent. However, the cooperation rate statistic is somewhat misleading because contacted LPNs were much less likely to be eligible (18.2 per cent) than were contacted MDs (43.9 per cent). Therefore, we had to contact many more LPNs in order to end up with an eligible sample of similar size to the MD sample and thus had a larger absolute number of refusers among the contacted LPNs, although the *rate* of refusals among the LPNs was quite a bit lower (12.8 per cent) than it was among the MDs (22.3 per cent). In both occupations, because refusers were generally unwilling to provide us with demographic data, we are not able to determine whether there was any response bias. An additional six MD respondents were volunteers or were nominated by other MDs as eligible.

The final sample consisted of 48 full-time MDs (24 white and 24 minority) and 45 reduced-hours MDs (31 white and 14 minority), for a total N of 93 MDs, and 41 full-time LPNs (30 white and 11 minority) and 43 reduced-hours LPNs (39 white and 4 minority), for a total N of 85 LPNs. (We dropped 10 participants [five MDs and three LPNs] who described themselves as solo private practitioners because by definition, self-employed workers cannot experience PCVs.)

Procedures

From the professional licensing boards described above, we drew random subsamples of MDs and LPNs and mailed them letters describing the study; shortly thereafter,

trained screeners contacted them to determine whether they were eligible and willing to participate. Next, trained interviewers mailed recruitment packages containing a letter describing the time commitment and remuneration entailed in study participation, copies of two articles on our previous project with reduced-hours MDs, and endorsements from occupation-relevant professional organizations.

Interviewers scheduled and conducted 60-minute face-to-face interviews at a time and place convenient to each participant. Participants also completed a brief mailed questionnaire and returned it at the time of the interview. The interview and mailed survey covered various objective and subjective aspects of participants' jobs, including PCVs and intention to turn over. The data for the present analysis were gathered during the face-to-face interview. Each MD received \$25 and each LPN received \$50 for her participation.

Measures

Psychological contract violations (PCVs). A measure of PCVs should consist of the extent to which a contract breach is experienced as problematic, but no such measure is available (Turnley & Feldman, 1999). Recently, Robinson and Morrison (2000) operationalized PCVs with a two-item measure of which the first reflects an emotional reaction, but the second does not. Conway and Briner (2002) also focused on the cognitive but not the affective component of PCVs.

Improving on this measure, Turnley and Feldman (1999) developed a 16-item measure asking respondents to indicate the degree of importance of each aspect (e.g. salary, job security). Participants compared the amount of each aspect they had received to the amount the organization had committed to provide. The degree of PCV was calculated by multiplying the magnitude of the violation on each job factor by the importance of that same factor and summing across all 16 items. However, it is not clear that importance is an adequate measure of emotion, or 'strong emotion', as described by Rousseau and Parks (1993, p. 19) in their seminal definition of PCVs.

We have developed a 13-item measure of PCVs. Twelve of the items are taken from a well-researched and well-validated 28-item measure of job-role quality (see Barnett & Brennan, 1995) asking participants to think about their job as it is right now and to indicate on a four-point scale from 1 (not at all) to 4 (extremely) to what extent each of the items was currently rewarding or of concern. The authors reviewed the definition of PCVs adopted for this analysis and selected the items that best matched the definition; four were reward items (e.g. 'supervisor's respect for my abilities' and 'having the authority to get the job done'), which were reverse scored, and eight were concern items (e.g. 'having to do things against my better judgment' and 'not able to do my job because of red tape'). The thirteenth item (i.e. 'the extent to which this practice has met your expectations', which was reverse scored) was used previously in a study of full-time academic MDs (Carr et al., 1998). It was included because it captured an aspect of PCVs not reflected in the other 12 items. Internal consistency is high, with a Cronbach's alpha of 0.85 in the present sample.

Intention to turn over. This variable was operationalized by asking each respondent to rate on a scale from 1 (extremely unlikely) to 7 (extremely likely) how likely she

was to voluntarily terminate employment with her organization within the next 12 months.

Control variables. *Occupation* was operationalized as a dichotomous variable (1 = MD, 2 = LPN). *Work schedule* was operationalized as a dichotomous variable (1 = full-time schedule, 2 = reduced-hours schedule) as defined by the participant's employer. *Negative affectivity (NA)* was assessed using the Trait Anxiety Scale (Spielberger, 1983), a 10-item frequency of feelings scale that is a recognized measure of the NA construct (Watson & Clark, 1984). Internal consistency is high, with a Cronbach's alpha of 0.77 in the present sample. *Number of children* and *years in occupation* are self-explanatory. *Job security* was assessed by asking participants to rate on a scale from 1 (strongly disagree) to 4 (strongly agree) the extent to which 'My job security is good.' (It should be noted that we did not control for household income because it was so highly collinear with occupation, one of our main moderators.)

Results

Descriptive findings

On average, the reduced-hours MDs worked 32.2 hours per week (SD = 7.9) and the full-time MDs worked 49.0 hours per week (SD = 9.4); on average, they had been working these schedules for almost six years (mean = 68.9 months), although there was a great deal of variability (SD = 60.1 months). LPNs worked significantly fewer hours than MDs, whether they were on reduced-hours schedules, averaging 26.1 hours per week (SD = 4.1), $t(65.9) = 4.56$, $p < 0.001$, or full-time schedules, averaging 41.5 hours per week (SD = 9.7), $t(87) = 3.69$, $p < 0.001$. On average, they had been working these schedules for just over six years (mean = 74.7 months, SD = 68.2 months), which was not significantly longer than the MDs. On average, LPNs had been working in the field for significantly longer (14.8 years vs. 10.4 years), $t(162.9) = 4.29$, $p < 0.001$, but were about the same age as the MDs (39.9 years vs. 40.2 years). LPNs had significantly more children, $t(176) = 2.02$, $p < 0.05$, but the magnitude of the difference was not large (2.3 vs. 2.1). Not surprisingly, the MDs had significantly higher annual household incomes than the LPNs, $t(95.1) = 10.48$, $p < 0.001$ (\$239,121 vs. \$74,621).

Examination of the intercorrelations between variables (not shown) revealed that negative affectivity and job security were each significantly correlated with the predictor (PCVs), several other controls, and with the outcome (intention to turn over), confirming the necessity of controlling for NA and job security in further analyses.

Hypothesis testing

We started by estimating a main-effects simultaneous regression model regressing intention to turn over on three predictors: PCVs, occupation (MD vs. LPN), and work schedule (full-time vs. reduced-hours). The model also included four controls: negative affectivity, number of children, job security, and years in occupation. As shown in table 1, PCVs were the only significant predictor of intention to turn over

TABLE 1 Psychological contract violations as a predictor of intention to turn over

	main effects model			hypothesis 1			hypothesis 2		
	B	β	(SE)	B	β	(SE)	B	β	(SE)
PCVs	0.94***	0.35	(0.21)	1.03***	0.39	(0.21)	0.96***	0.36	(0.21)
Occupation	0.30	0.10	(0.24)	0.31	0.10	(0.23)	0.32	0.10	(0.23)
Work schedule	-0.30	-0.10	(0.22)	-0.31	-0.10	(0.22)	-0.032	-0.10	(0.22)
Negative affectivity	0.21	0.05	(0.31)	0.07	0.02	(0.31)	0.14	0.03	(0.31)
Children	-0.10	-0.05	(0.14)	-0.11	-0.06	(0.13)	-0.13	-0.07	(0.13)
Job security	0.02	0.01	(0.15)	0.03	0.01	(0.15)	0.04	0.02	(0.15)
Years in occupation	-0.03	-0.12	(0.02)	-0.03	-0.13	(0.02)	-0.03	-0.14	(0.02)
PCVs × occupation	—	—	—	-1.01*	-0.18	(0.40)	—	—	—
PCVs × work schedule	—	—	—	—	—	—	0.97*	0.17	(0.40)
R^2		0.175			0.206			0.204	
Adjusted R^2		0.140			0.167			0.166	

Note: $N = 178$. For occupation, 1 = MD, 2 = LPN; for work schedule, 1 = full-time, 2 = reduced hours.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

in the main-effects model, with those participants who experienced higher levels of PCVs reporting that they were more likely to leave their jobs within the next 12 months. There were no main effects of occupation or of work schedule, nor did any of the four covariates predict intention to turn over.

To test the hypotheses that MDs and reduced-hours employees would be more sensitive to PCVs in terms of intention to turn over, we conducted moderator regression analyses. To minimize the problems of multicollinearity associated with such analyses, we centred each predictor on its sample mean and computed interaction terms using the centred values (Aiken & West, 1991).

We tested the first hypothesis by adding the interaction term PCVs × OCCUPATION to the main-effects model described above. There was a significant interaction effect of occupation on the relationship between PCVs and intention to turn over (see table 1, Hypothesis 1). The inclusion of this interaction term in the model explained a significant proportion of the variance over and above that explained by the main-effects model, $F(1,169) = 6.60$, $p < 0.05$. Specifically, as shown in figure 1, MDs were more reactive to perceived PCVs in terms of their intention to leave their jobs. Thus, Hypothesis 1 was supported.

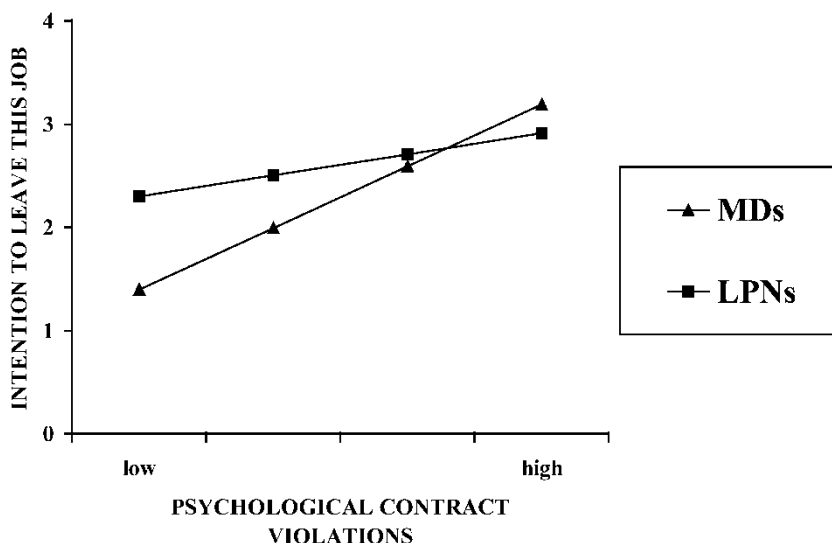


FIGURE 1 Occupation and the relationship between psychological contract violations and intention to turn over.

We tested the second hypothesis by adding the interaction term PCVs × WORK SCHEDULE to the main-effects model described above. As with occupation, there was a significant interaction effect of work schedule on the relationship between PCVs and intention to turn over (see table 1, Hypothesis 2). The inclusion of this interaction term in the model explained a significant proportion of the variance over and above that explained by the main-effects model, $F(1,169) = 6.16, p < 0.05$. Specifically, as shown in figure 2, reduced-hours employees were more reactive to

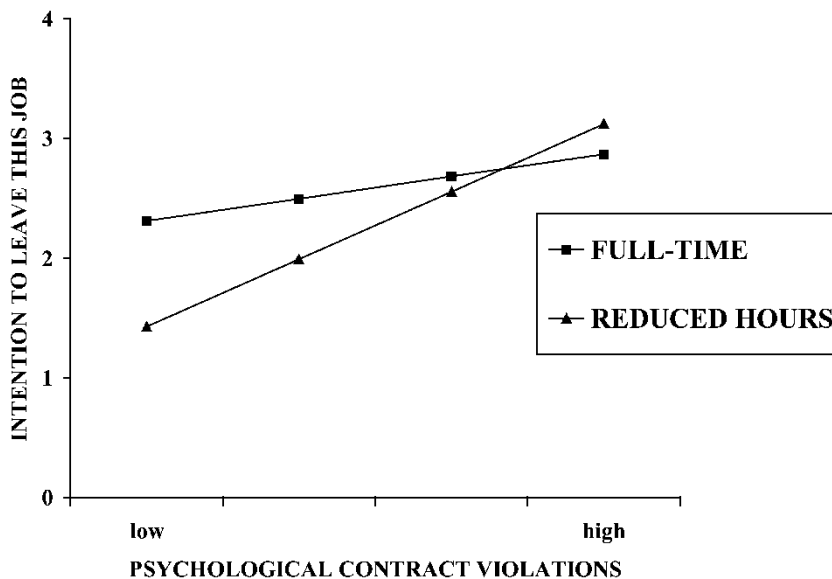


FIGURE 2 Work schedule and the relationship between psychological contract violations and intention to turn over.

PCVs than their full-time counterparts in terms of their intention to leave their jobs. Thus, Hypothesis 2 was also supported.

Finally, we tested whether there was a three-way interaction by adding the interaction term $PCVs \times OCCUPATION \times WORK\ SCHEDULE$, along with all three possible two-way interaction terms involving these three variables, to the main-effects model described above. The three-way interaction term was not significant. Thus, reduced-hours MDs were no more reactive to PCVs than were reduced-hours LPNs in terms of intention to turn over. In other words, there was no additive effect above and beyond the two separate effects of being an MD and being a reduced-hours worker on the relationship between PCVs and intention to turn over.

Discussion

There are two main findings of this study. First, as hypothesized, the relationship between PCVs and intention to turn over varies by occupation, with MDs' intentions to leave being more reactive than those of LPNs to the degree of PCVs they are experiencing. Second, also as hypothesized, the relationship between PCVs and intention to turn over varies by work schedule, with reduced-hours MDs' and LPNs' intentions to leave being more reactive than those of their full-time counterparts to the degree of PCVs they are experiencing. Importantly, level of PCVs does not vary by occupation or by work schedule.

These findings indicate that reduced hours can have unintended consequences. But research needs to go beyond the direct effects relationship between variables to uncover these consequences. This study demonstrates the importance of estimating indirect effects. Neither the main effect of occupation nor the main effect of work schedule was a significant predictor of intention to turn over. However, both job factors, occupation and work schedule, moderated the relationship between PCVs and contemplated exit behaviours.

The unintended consequences of reduced hours become more apparent after examining different occupations separately because there are important occupational differences in reactions to PCVs. Previous studies (e.g. Bunderson, 2001) that grouped all participants together regardless of professional status or that failed to differentiate participants by professional status within an occupation (e.g. Conway & Briner, 2002) may have obscured or masked important differences.

Limitations and future research

There are several limitations to this study. First, because the data are cross-sectional, we cannot determine the direction of effects. It is possible, for example, that intention to leave one's job leads to perceptions of PCVs as a rationalization for the decision to change jobs. Longitudinal studies would allow the direction of causality to be specified.

Second, we are also unable to test the separate effects of breaches of administrative role obligations and breaches of professional role obligations, following Bunderson's (2001) distinction. Future research might examine whether the relationships we found are limited to one or another of these two types of violations.

Third, the research included only women. While we expect that a similar pattern likely exists for men, this study furthers the notion that work–life balance is a gendered issue. Managers have been more willing to give reduced-hours schedules to non-managerial employees, women, and employees with childcare responsibilities (Barham, Gottlieb, & Kelloway, 1998). In addition, this study was limited to women in the USA. Countries that encourage women to reduce their working hours as a way of helping them balance work and family, should also consider the significance for their career advancement. Research has suggested that similar challenges exist for women in Hong Kong (Lo, 2003) and the Netherlands (DeLange, 1998), among other countries.

Fourth, the study focused on a limited set of variables, in part because it relied on an existing data-set. Future research might include collection of data about other relevant variables, such as manager's style, job content, and organizational context. This more comprehensive analysis should provide further insight into the complexities of how work schedule affects intent to turn over and other work-related outcomes.

Implications

Our findings have important implications for employees and their organizations. Individuals have accepted reduced hours as a viable solution for the overload and conflict they experience in balancing work and family. However, it is necessary to revisit the assumption that this type of flexible work schedule offers only positive outcomes. For example, some direct effects are negative. These counterintuitive findings led us to focus on interaction effects. In fact, examining the indirect effects suggests that subtleties influence the impact of such flexibility. For example, reduced hours may be successful only for particular combinations of profession and schedule. Or, additional variables, such as managers' support, the employee's view of career, or the organizational context, may be critical to the effectiveness of such schedules. Executives need to carefully examine the situation faced by their employees and structure work accordingly. Still, such options can provide a powerful recruiting and retention tool in many situations.

Organizations have adopted reduced hours without careful consideration of their unintended consequences. Although organizations are redesigning full-time into reduced-hours options in part to meet the needs of their employees, especially women with young children, this strategy appears to need rethinking. If organizations fail to create and articulate meaningful career paths for their reduced-hours staff, then the goal of retaining these employees will be thwarted (MacDermid, Lee, Buck, & Williams, 2001). To lessen the likelihood that reduced-hours employees will react to PCVs by entertaining exit behaviours, more needs to be done to provide them with other coping strategies. For example, empowering reduced-hours workers to confront their complaints might decrease their intention to leave.

To make these changes, professional organizations will have to challenge the well-entrenched notion that these professions are callings requiring single-minded devotion. For physicians, these changes may begin with medical schools, where students are socialized to view their profession as a calling. The new economic reality may exaggerate the gap between this view of medicine and that held by medical organizations, which may in turn lead to the possibility of PCVs for physicians. This

situation extends beyond medicine to the legal profession and perhaps others, where employees are expected to devote endless hours to their job and disregard other non-work demands and responsibilities.

This study looked at two professions in the healthcare sector. Lessons in healthcare, which can be characterized as a dynamic and unpredictable industry, can be extrapolated to other industries undergoing similar changes. Just as the number of women physicians has increased significantly in the past decades, so has the number of female attorneys and accountants. The legal and accounting industries face similar challenges, as women and increasingly men strive to balance work and family demands. Understanding the unintended consequences of reduced-hours employment is critical for the ultimate success of such programmes in these industries. Managers and organizations need to take steps to ensure that PCVs are minimized and job-design efforts are successful. We can no longer take the positive consequences of reduced hours for granted.

Conclusion

This study suggests that programmes designed to improve the workplace by creating better work–life balance may have unintended negative consequences for some groups of employees. In particular, employers and employees can no longer take the positive consequences of such job redesign for granted. The assumption of good outcomes is challenged when we look beyond the main effects of job redesign to the interaction of specific options with occupation in a particular industry. Lessons from comparing two occupations of different status within a dynamic, unpredictable industry can be generalized to similar industries and occupational groups.

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