

The Influence of Workplace Injuries on Work–Family Conflict: Job and Financial Insecurity as Mechanisms

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Research examining the outcomes of workplace injuries has focused on high costs to the organization. In this study, we utilize conservation of resources theory to develop and test a model that explains how and under what circumstances workplace injuries impact employees' perceptions of how their work interferes with their family. Results from 194 registered nurses (along with 85 of their spouses), using path analytic tests of moderated mediation, provide support for the prediction that the mediated effect of workplace injury severity on work–family conflict (through job and financial insecurity) is weaker when employees perceive high levels of supervisor support. We discuss the implications of these findings for the study of job and financial insecurity and work–family conflict. Limitations of this study and directions for future research are also presented.

Keywords: workplace injuries, job insecurity, work–family conflict, supervisor support

Workplace injuries are a major concern for organizations and employees; thus, understanding how and why injuries impact employees' lives is of both practical and academic importance (Clarke, 2013; Guest & Zijlstra, 2012; Nahrgang, Morgeson, & Hofmann, 2011). The majority of studies in this area have primarily focused on the antecedents of occupational safety and injuries. This research stream has consistently identified safety climate (Chowdhury & Endres, 2010; Clarke, 2006; Neal & Griffin, 2006; Zohar, 2002), work design (Parker & Wall, 1998), and perceived supervisor and organizational support (Hofmann & Morgeson, 1999) as psychosocial predictors of workplace injuries. Other studies have examined individual-level predictors of workplace injuries, including sleepiness (DeArmond & Chen, 2009) and characteristics such as gender, education, and personality (e.g., Hansen, 1989; see also Christian, Bradley, Wallace, & Burke, 2009, for a comprehensive meta-analysis of predictors of workplace safety outcomes).

Although most of the literature examining workplace injuries has focused on antecedents, researchers highlight the potentially detrimental effects injuries can have on employees' work and nonwork outcomes (Dembe, 2001). Yet the little research that has examined outcomes of workplace injuries has primarily studied the negative outcomes for organizations, for example, lost productiv-

ity, increased levels of turnover, and litigation (Malek, El-Safty, El-Safty, & Sorce, 2010; National Safety Council, 2010). A more limited amount of research has examined individual outcomes of workplace injuries. This stream of research suggests that employees who experience workplace injuries experience a lower quality of life (Adams et al., 2002; Keogh, Nuwayhid, Gordon, & Gucer, 2000), depression (Strunin & Boden, 2004), and financial instability (Himmelstein, Warren, Thorne, & Woolhandler, 2005). Although the literature has examined health and financial implications, very little, if any, research has been conducted on the influence workplace injuries may have on employees' perceptions of their family lives through their job insecurity, financial insecurity, and work–family conflict. Dembe (2001) acknowledged that the social consequences of workplace injuries are often difficult to measure because the repercussions of the injury reach far beyond the injured employee and the organization. Given the importance of the work–family interface for employees and organizations (Allen, Herst, Bruck, & Sutton, 2000; Casper, Harris, Taylor-Bianco, & Wayne, 2011; Kossek, Baltes, & Matthews, 2011), we see this as a significant gap in the literature.

The purpose of this study is to extend previous research about outcomes of workplace injuries by examining a model that explains how workplace injuries influence the work–family interface. One particular outcome that has not been examined is work–family conflict. Work–family conflict is “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (Greenhaus & Beutell, 1985, p. 77). The literature has consistently found negative individual and organizational outcomes for individuals who experience high levels of work–family conflict. For instance, these individuals often encounter decreased levels of job satisfaction (Allen et al., 2000), decreased levels of organizational commitment (Netemeyer, Boles, & McMurrian, 1996), and increased

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turnover intentions (Good, Sisler, & Gentry, 1988). These individuals also report having decreased levels of life and family satisfaction (Allen et al., 2000; Parasuraman, Greenhaus, Rabinowitz, Bedeian, & Mossholder, 1989) in addition to increased levels of burnout (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Netemeyer et al., 1996). Therefore, it is important to understand the processes that lead to work–family conflict among injured employees.

This research contributes to the literature in several ways. First, there are some unique challenges associated with studies examining workplace injuries. Much of this literature has used retrospective injury, or accident recall, as the outcome of interest. Additionally, many studies have used cross-sectional designs (e.g., Barling, Kelloway, & Iverson, 2003a, 2003b; Cullen & Hammer, 2007). For example, Christian et al. (2009) reported that only 12 out of 90 (13%) studies in their meta-analysis of safety were longitudinal in nature. Despite the fact that these studies were designed to portray the injuries as the outcome, they may, in fact, implicitly show the injuries as the predictor of individual and psychosocial outcomes for the employee. In the current study, we attempt to resolve some of the challenges in the literature by utilizing a time-lagged design to assess how workplace injuries may act as an antecedent influencing employee perceptions of how work may interfere with their families. Retrospective bias is minimized in this study by collecting the data over a number of intervals and by going back in time to look at a history of injuries.

Second, we examine the role that injuries play in work–family conflict, by extending conservation of resources (COR) theory (Hobfoll, 1989) to derive a model of the outcomes of injury (see Figure 1). According to our model, injured employees experience increased levels of both job and financial insecurity, which translates into increased levels of work–family conflict. In the United States, many organizations provide workers' compensation and short- and long-term disability insurance to provide compensation and medical treatment to employees that experience workplace injuries. However, these programs are administered on a state-by-state basis and only provide compensation of either two-thirds or three-fourths of an employee's regular compensation. Although it is illegal in most states for an employer to terminate an employee for reporting a workplace injury or filing a workers' compensation claim, there are instances in which these practices still occur (Morse, Dillon, Warren, Levenstein, & Warren, 1998; Shannon & Lowe, 2002). Therefore, job and financial insecurity are expected to mediate the relationship between workplace injury and work–family conflict. This is an important contribution to the occupational safety literature, as it helps to quantify the psychological threats that employees experience as a result of injury.

Third, as a practical matter for organizations, it is important to examine which resources reduce the perceived threats individuals encounter when they are injured. Previous research has identified the role that supervisor support plays in reducing strain when workplace stressors are presented (Halbesleben, 2006; Kossek, Pichler, Bodner, & Hammer, 2011). Specifically, we examine the role of supervisor support as a resource that reduces the level of job and financial insecurity an injured employee perceives. In addition to offering a test of the manner in which resources help employees address threats as outlined in COR theory, it offers a clear mechanism that organizations can employ to reduce the negative impact of injury for employees and adds to the mounting evidence suggesting that organizations develop supportive supervisors (Paustian-Underdahl et al., in press).

Workplace Injury and Work–Family Conflict

The impact that workplace injuries can have on the family can be explained by COR theory, which suggests that individuals strive to acquire and maintain a balance of resources (Hobfoll, 1989). Resources are defined as “those objects, personal characteristics, conditions, or energies that are valued by the individual” (Hobfoll, 1989, p. 516). Examples of resources are energies (e.g., feeling of a sense of control of one's life, self-pride), valued conditions (e.g., employment status), and personal characteristics (e.g., health). COR theory also posits that individuals experience stress when they perceive threats to their current resources (Hobfoll, 1988, 1998). To cope with the stress they experience in the work domain due to threatened resources, individuals often utilize resources from other life domains (Hobfoll, 2001). By using resources from the family domain to address a resource threat in the work domain, injured employees are more likely to experience work–family conflict (Grandey & Cropanzano, 1999).

Work–family conflict occurs when individuals face competing demands regarding work and family. These competing demands often cause individuals to sacrifice rewards in one of the domains to obtain rewards in the other (Zedeck, 1992). When individuals are injured in the workplace, they often encounter a period of uncertainty that can be perceived as a threat to valued resources (Himmelstein et al., 2005). Specifically, these individuals are faced with following organizational procedures for filing claims, reduced workloads, and periods of increased medical treatment and reduced compensation depending on the severity of the injury. The changes that injured employees encounter in their work roles (i.e., reduced work hours and compensation) translate into perceived threats to resources, such as their social network at work and status as a financial contributor to the household. In order to

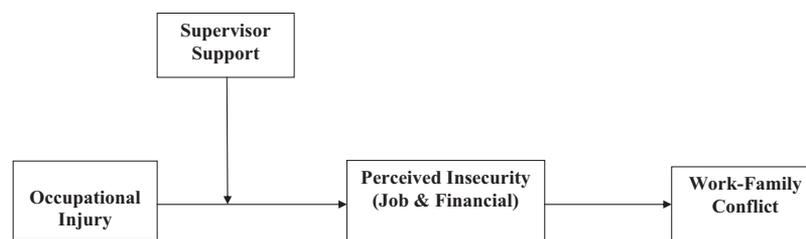


Figure 1. Hypothesized model.

address the changes resulting from the injury, they may have to rely more heavily on resources from the family domain (support from family, financial resources of spouses or dependents); this leads to increased perceptions that the work role is interfering with the family role. Therefore, we hypothesize the following:

Hypothesis 1: There is a positive relationship between workplace injury (Time 1) and work-family conflict (Time 3).

Mediating Effects of Job and Financial Insecurity

Individuals who are injured in the workplace often experience job instability (Keogh et al., 2000) and financial strain (Himmelstein et al., 2005). These employees experience reduced levels of productivity or lost time at work as a result of their injury. Previous research suggests that reduced work hours result in decreased levels of work-family conflict (Eby et al., 2005). However, one would assume that the reduction in hours due to a concern with well-being yields a different response from the involuntary reduction in work hours due to injury. The reduction in productivity and reduced time at work that results from an occupational injury can lead to a perception that one or several of their valued resources (e.g., their job or salary) are threatened (Selenko, Mäkikangas, Mauno, & Kinnunen, in press). As this relates to financial insecurity, many organizations provide workers' compensation and short and long-term disability insurance to reduce the feelings of financial insecurity that might arise when a workplace injury occurs. However, these programs only provide a percentage of the employee's regular compensation. Additionally, feelings of financial insecurity arise as the costs related to the injury (i.e., limited medical coverage and high out-of-pocket costs) may exceed the employee's reduced income.

COR theory suggests that these outcomes serve as a mediating step, whereby injured employees will have increased levels of both job and financial insecurity, and therefore have higher levels of work-family conflict. Job insecurity is a perceptual phenomenon that focuses on the potential threat to the stability of an individual's current job (Greenhalgh & Rosenblatt, 1984). The literature has characterized job insecurity as either objective (Pearce, 1998) or subjective (De Witte, 1999). Objective insecurity focuses on nonconventional employment such as underemployment and non-standard work agreements, whereas subjective insecurity highlights an individual's perceived fear or worry about the future of their job. Previous research has found that subjective job insecurity is more consistently related to psychological well-being than objective job security (Ferrie, 2001; Sverke, Hellgren, & Naswall, 2002). Therefore, this study will focus on subjective job insecurity.

Previous research also suggests that there is a positive relationship between job insecurity and work-family conflict (Richter, Naswall, & Sverke, 2010). The perception of job insecurity creates a threat to several types of resources (Staufenbiel & König, 2010). Initial reactions to workplace injuries may include an impaired mood. However, in the long-term, valued resources such as stable employment, social networks, and a feeling of control over the employee's life are under threat. This threat to resources creates a conflict between work and family due to an increase in uncertainty regarding the individual's employment future. The injured employee's perceived threat to employment stability is a strain that is experienced in the workplace that will impact his or her family role, resulting in the experience of work-family conflict.

As this relates to financial insecurity, injured employees will experience a threat to valued conditions such as salary, savings, and retirement funds. As this threat increases, these employees may experience some apprehension, because their role within their family may change if they are no longer able to contribute financially to their family (Voydanoff, 2004). Additionally, these employees may feel that they are draining the family's financial resources, leading them to experience work-family conflict as a result of their injuries. Because job and financial insecurity focus on the reduction or loss of valuable resources (i.e., their job or salary) for injured individuals, we hypothesize the following:

Hypothesis 2a: Job insecurity (Time 2) will mediate the relationship between workplace injury (Time 1) and work-family conflict (Time 3).

Hypothesis 2b: Financial insecurity (Time 2) will mediate the relationship between workplace injury (Time 1) and work-family conflict (Time 3).

Moderating Effect of Supervisor Support

According to COR theory, a threat to resources can be mitigated by other resources that positively address the threat (Hobfoll, 2001). A resource that should diminish work-family conflict among employees who are injured is supervisor support (Adams et al., 2002). Supervisor support is a subordinates' perception of the degree to which supervisors value their contributions and care about their personal and professional needs and well-being (Kottke & Sharafinski, 1988; Rhoades & Eisenberger, 2002). Supervisor support can be exhibited as both emotional and instrumental support. Emotional support includes providing care and empathy. Instrumental support refers to tangible help that supervisors may provide to their subordinates (House, 1981). For this study, we propose that overall perceptions of supervisor emotional and instrumental support could mitigate the threat posed by the injury by signaling to the injured employee that he or she is valued and supported despite the injury. We focus on supervisor support because of the strong role that this resource plays in reducing strain in the face of workplace stressors (Halbesleben, 2006).

Research examining the importance that supervisor support plays in reducing work-family conflict is plentiful (Carlson & Perrewé, 1999; Frye & Breugh, 2004). Consistent with COR theory, supervisor support will add to the pool of resources that will assist the employee in coping with the stressful work situation (Hobfoll, 2001; Hobfoll & Freedy, 1993). Specifically, supervisors often have discretionary power regarding resource allocation, along with a voice in representing an employee's interests to the appropriate organizational members. For example, as supervisors provide injured employees with assistance regarding organizational procedures for reporting injuries and reassurance about their return to work after recovery, their levels of job insecurity and subsequent work-family conflict are reduced. Supervisors can also provide emotional support to injured employees by trying to reassure employees of their job and financial security following the injury (Loi, Ngo, Zhang, & Lau, 2011). Additionally, supervisors could assist employees with the procedures for filing workers' compensation claims and other information that contributes to the unimpeded processing of financial claims, reducing employee levels of financial insecurity and subsequent work-family conflict.

Therefore, we suggest that the mediated relationships between sustaining a workplace injury and increasing work–family conflict through perceptions of job and financial insecurity will be weaker when supervisor support is high.

Hypothesis 3a: Supervisor support (Time 2) will moderate the strength of the relationship between workplace injury and job insecurity, such that the mediated relationship will be weaker when supervisor support is high compared with when supervisor support is low.

Hypothesis 3b: Supervisor support (Time 2) will moderate the strength of the relationship between workplace injury and financial insecurity, such that the mediated relationship will be weaker when supervisor support is high compared with when supervisor support is low.

Method

Participants and Procedures

Data were collected from 194 nurses from a Level II trauma center in the upper Midwest United States, over five time periods across a 2-year period, and includes a subsample of other-source data from employees' spouses. The sample included 178 women and 16 men. At the final data collection period, the participants had an average organizational tenure of 10.97 years ($SD = 8.15$) and had an average age of 34.02 years ($SD = 7.68$). One hundred sixty-one (83%) were married. Eighty-nine percent of the married participants had a spouse that also worked outside the home. One hundred twenty-six (65%) reported having at least one child at home; this may be an underestimation, because we treated a nonresponse to this variable ($n = 38$) as the same as having zero children at home. The average number of reported children at home was 1.68 among those that reported they had children.

We collected the data via an online survey hosted by one of the author's universities. For each data collection, we provided a link to the survey to the facility's Director of Nursing, who sent it along with a note encouraging her staff to participate. In an effort to maximize response to the final survey and retention across the surveys, we also offered the last survey in a paper format and distributed it to the nurses' work mailboxes. Those surveys were collected in a locked ballot box outside the human

resources office (which is in a different part of the facility than the Director of Nursing's office) and were mailed unopened to one of the authors.

We outline our data collections in Table 1. The data collection spanned 2 years total and included five independent surveys distributed at 6-month intervals. For the first four data collections, we asked the participants about their injuries over the preceding 6-month period. During the second-to-last data collection, we collected financial and job insecurity data, supervisor support, along with the injury data. Finally, in the last data collection, we collected work–family conflict data and data from spouses of those participants that indicated they were married. We maintained the anonymity of the participants by asking the participants to provide a user-generated code at the end of each survey.

As indicated in Table 1, our overall response rate was 61%, using a starting figure of 318 nurses working for the organization during the first data collection. This is likely attenuated somewhat by turnover, because not all 318 nurses worked for the company 2 years later. Over the course of the study, we were able to match up data from 73% of the participants from the first data collection (194 participants out of a possible of 265 from the first data collection). This compares quite favorably with the 2-year retention rate of the nurses in the organization of 65%.

Our final sample was very similar, in demographic terms, to the general population of nurses in the organization. In addition to checking the demographic characteristics of the sample against those of their organization, we further tested for non-response bias by testing for differences in study variables between respondents on the first survey and respondents on each subsequent survey. The only significant difference we found was that respondents in the final sample reported significantly less job insecurity and work–family conflict than those who responded only to the first survey. Given that job insecurity (Ashford, Lee, & Bobko, 1989) and work–family conflict (Good et al., 1988) are associated with turnover intentions, it might have been expected that those who stayed in the study had lower levels on these two variables. If anything, such a finding restricts the range on these variables, and thus makes our study a more conservative test than if we had used only the data from the first data collection.

Table 1
Data Collection Timeline

Time frame	Variables collected	<i>N</i>	Response rate	Cumulative retention rate
Summer 2009	Injury data from previous 6 months	265	83%	n/a
Winter 2009–2010	Injury data from previous 6 months	249	78%	94%
Summer 2010	Injury data from previous 6 months	235	74%	89%
Winter 2010–2011	Injury data from previous 6 months, financial insecurity, job insecurity, and supervisor support	226	71%	85%
Summer 2011	Work–family conflict	194	61%	73%
	Spouse financial insecurity and work–family conflict	85	78%	n/a

Note. After the first data collection, *N* represents the number of surveys that could be matched to previous responses (the actual number of responses was always higher due to new hires or people who had not responded to the previous surveys). The response rates after the first data collection are attenuated by turnover (a potential sample of 318 was used each time, though some of those 318 had left the organization).

Measures

Injuries. Over the course of 2 years, we asked the participants to report the injuries they experienced during the previous 6 months. Each 6 months, we asked the participants to indicate how often they had experienced each of nine injuries derived from a list of common nursing injuries (needle sticks, cuts/bruises, allergic skin reactions, difficulty breathing, hearing loss, traumatic injury, chemical splashes, body fluid splashes, and trips/falls) from the Centers for Disease Control and Prevention (2004; see also Halbesleben, 2010; Hemingway & Smith, 1999). For each type of injury, the participants were asked to indicate how often it had occurred over the previous 6 months, how many days total were missed as a result of the injuries in that category, and whether the injury had been reported for each incident. The injuries were summed across the 2 years of data collection to create an injury frequency composite (Barling et al., 2003a). We used the full 2 years of data in order to increase the likelihood of injury by increasing the time of exposure to occupational hazards; however, using only the most recent 6 months of data led to very similar findings.

Although self-report injury indices are common in the literature and have demonstrated strong relationships with observations of injuries (Probst & Brubaker, 2001), we also obtained injury data from the organization for the 2 years during which the data were collected in order to improve the validity of our findings. We found that the number of injuries reported to the organization was generally consistent with the injuries reported in the study (e.g., the sample mean injury frequency was 1.78 over the 2 years; the organization's data showed an average of 1.39 injuries across the organization). When we account for self-reporting of the injury, the numbers come much closer: The sample frequency of reported injuries was 1.42. The numbers between the sample and organization are also very similar if we examine the percentage of individuals reporting injuries. In our sample, 45 nurses reported an injury to their organization (23% of the sample). In the organization's population, 21% of the nurses in the organization had reported an injury. Given the closeness of the reported injury data in the sample to the organizational population, we believed the self-reports of injury frequency were valid indicators of the number of injuries experienced in the sample.

We found that of the 345 injuries experienced by 104 nurses in our sample, 45% were injuries that led to time lost from work. This is consistent with rates found in other studies (e.g., Barling et al., 2003a). Consistent with previous work (Barling et al., 2003a), we analyzed the data for both lost time and non-lost-time injuries. However, because a lost-time injury may lead to greater job insecurity, financial insecurity, and work-family conflict, we focused on injury severity in our data set, using number of days missed due to injury as the predictor in our models (Halbesleben, 2010).

Job insecurity. We used the seven-item job insecurity scale of Hellgren, Sverke, and Isaksson (1999) to measure job insecurity. A sample item is "I feel uneasy about losing my job in the near future." Responses were recorded on a 5-point scale which ranged from (1) *strongly disagree* to (5) *strongly agree*. Cronbach's alpha for this scale was .87.

Financial insecurity. To assess financial security, we used the six-item financial security scale of Munyon (2008). Sample

items include "I have enough savings for an emergency" and "I have financial stability." Responses were recorded on a 7-point scale, which ranged from (1) *strongly disagree* to (7) *strongly agree*. In order to maintain consistency between the two insecurity measures, we reversed all of the items on the scale to create a measure of financial *insecurity*. Cronbach's alpha for this scale was .86.

Supervisor support. To measure supervisor support, we utilized the six-item scale used by Shanock and Eisenberger (2006). A sample item is "My supervisor really cares about my well-being." We used a five-point scale from (1) *strongly disagree* to (5) *strongly agree*. Cronbach's alpha for this scale was .90.

Work-family conflict. We used nine items from the work-family conflict measure of Carlson, Kacmar, and Williams (2000) to measure work-family conflict. The measure includes six, three-item subscales to measure different forms of interference (time-, strain-, and behavior-based) from both the work to family and family to work views. Our study utilized the three work interference with family subscales, using nine of the 18 total items. Responses were recorded on a 5-point scale, which ranged from (1) *strongly disagree* to (5) *strongly agree*. A sample item is "Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy." Cronbach's alpha for this scale was .97.

Spouse financial insecurity and work-family conflict. In order to address concerns about common method variance, social desirability associated with entirely self-report scales, and to provide a more complete view of how injuries impact families (in line with family systems theory; see Baskerville Watkins et al., 2012), we asked the married participants to provide the contact information for their spouses. From that contact information, we emailed spouses of 109 of the participants, providing them with a link to an online survey, and received responses from 85 (78% response rate). We asked them to complete the same financial insecurity scale as the employee. Cronbach's alpha for this scale was .90. The work-family conflict items were adapted to refer to the impact of the participant's (not the spouses') job on the family domain. Cronbach's alpha for this scale was .94. For example, "Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy" was adapted to "Due to all the pressures at work, sometimes when my spouse comes home he or she is too stressed to do the things he or she enjoys." We were able to match the spouse data to the employee data by creating a unique survey link based on the e-mail address and code provided by the original participant; we then could track which spouses completed the survey (though we could only track them back to the participant's anonymous code; we did not have their names).

Control variables. We asked the participants when the injury occurred and controlled for time since the injury in our analysis. The goal of collecting this information was to address the possibility that job insecurity, financial insecurity, and work-family conflict may have subsided as time passed and the level of threat to resources from the injury was clearer. This variable did not have a significant bearing on the results and we proceeded without controlling for it based on the recommendations of Becker (2005). We also examined the number of hours typically worked in a week and whether the participants typically worked during day, night, or weekend shifts. We also found that those did not have a significant

Table 2
Descriptive Statistics and Intercorrelations Among Study Variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Time since last injury (days)	69.16	41.08	—								
2. Time missed from injury (days)	5.72	2.63	.02	—							
4. Job insecurity	3.01	0.95	-.03	.25**	(.87)						
5. Financial insecurity	3.87	1.61	-.01	.31**	.65**	(.86)					
6. Supervisor support	3.14	0.84	.05	-.14*	-.30**	-.17*	(.90)				
7. Work–family conflict	3.01	1.02	-.04	.20**	.52**	.48**	-.39**	(.97)			
8. Spouse financial insecurity	3.55	1.29	.03	.25**	.39**	.51**	-.10	.26**	(.90)		
9. Spouse work–family conflict	3.09	0.98	.06	.29**	.37**	.32**	-.25**	.49**	.37**	(.94)	

Note. $N = 194$ ($n = 85$ for spouse variables). Internal consistency estimates (Cronbach's alpha) appear in parentheses along the diagonal.

* $p < .05$. ** $p < .01$.

bearing on the results and we proceeded without controlling for them (Becker, 2005).

Analysis

We used the analytic procedures suggested by Edwards and Lambert (2007) for moderated mediation models. In their approach, one tests a series of nested models.¹ Model 1 is the basic mediated model (Time 1 injury severity to Time 2 financial/job insecurity to Time 3 work–family conflict), Model 2 is the predicted moderated mediation model with first-stage moderation (Time 2 supervisor support interacting with Time 1 injury severity to predict Time 2 financial/job insecurity), and Models 3 and 4 are alternative models. Model 3 examines second-stage moderation (Time 2 supervisor support interacting with Time 2 financial/job insecurity to predict Time 3 work–family conflict), and Model 4 examines both first and second-stage moderation. The added value of each step is assessed via changes in generalized R^2 values using Q and W statistics. A significant W value means that models differ; the model with a greater generalized R^2 value offers significantly more variance explained (see Tepper, Henle, Lambert, Giacalone, & Duffy, 2008). In our hypothesized model, we would expect Model 2 to have a higher generalized R^2 value than Model 1. Further, we would expect that the generalized R^2 values of Models 3 and 4 would not exceed that of Model 2.

Results

The descriptive and reliability statistics and correlations for all study variables are displayed in Table 2. We examined the factor structure of the data finding that a single-factor work–family conflict scale provided adequate fit to the data ($\chi^2 = 172.62$, $df = 135$, RMSEA = .038, CFI = .97, TLI = .97) and was not significantly different from a three-factor model ($\chi^2 = 166.88$, $df = 132$, RMSEA = .037, CFI = .97, TLI = .97). As a result, we proceeded using the more parsimonious one-factor work–family conflict operationalization. Similarly, using selected two-item parcels (with one three-item parcel in cases in which there were odd numbers of items), we found that a four-factor overall measurement model (including the items from job insecurity, financial insecurity, supervisor support, and work–family conflict) provided an acceptable fit to the data ($\chi^2 = 190.70$, $df = 129$, RMSEA = .048, CFI = .95, TLI =

.96) and was superior to the fit of a one-factor model ($\chi^2 = 1896.32$, $df = 132$, RMSEA = .26, CFI = .70, TLI = .63). We used item parceling to test the overall measurement model because of concerns regarding the sample size relative to the number of items that were included in the model.

Job Insecurity

With the measurement model supported, we proceeded with the moderated mediation analysis. The results from each model are displayed in Table 3. As noted, support for our hypotheses begins with the finding that Model 2 (the first-stage mediation model) offers the best explanation for the findings. When comparing their generalized R^2 values, Model 2 was significantly different from the generalized R^2 for Model 1 ($Q = .90$, $W = 8.69$, $df = 1$, $p < .05$). This suggests that adding the interaction between injury severity and supervisor support significantly increases the explained variance in work–family conflict.² We also found that Models 3 and 4 did not offer significantly higher generalized R^2 values than Model 2, suggesting these alternative models were not as good a fit as the predicted first-stage moderation model. Examination of the path estimates from Model 2 (see Table 3) confirmed the predicted relationships, in which severity was associated with higher job insecurity, job insecurity was associated with higher work–family conflict, and the interaction between injury severity and supervisor support was significant.

Based on the results from the hypothesized model, we calculated the simple effects for those high and low in supervisor support (see Table 4). Analysis of these simple effects suggests that for those high in supervisor support, the path from injury to job insecurity was significant, but the path from job insecurity to work–family conflict was not significant. The indirect effect of injury on work–family conflict was also not significant. For those low in supervisor support, the path from injury to job insecurity was significant,

¹ To conserve page space, we do not report how we derived each regression equation (for an example, see Tepper et al., 2008). These are available from the authors.

² We also ran the analyses using existence of an injury (1 = had been injured in the past 2 years; 0 = had not been injured in the past 2 years), and found the same pattern of results, though with lower R^2 values. Because one would theoretically expect someone who has been frequently injured to have greater job insecurity, financial insecurity, and work–family conflict, we report the summed injury frequency results here. The results for injury existence are available from the authors.

Table 3
Path Analytic Tests of Hypothesized Moderated Mediation Model and Alternative Models for Job Insecurity

Path estimated	Job insecurity models				Financial insecurity models			
	1	2	3	4	1	2	3	4
Injury Severity → Job Insecurity	.22**	.16**	.19**	.16**	.38**	.31**	.35**	.32**
Injury Severity → WFC	.19*	.28**	.21**	.31**	.31**	.32**	.32**	.35**
Job Insecurity → WFC	.35**	.42**	.41**	.40**	.34**	.32**	.35**	.29**
Supervisor Support → WFC	-.35**	-.35**	-.35**	-.39**	-.45**	-.48*	-.36**	-.42**
Injury Severity × Supervisor Support → WFC	-.28**	-.22**	-.32**	-.35**				
Job Insecurity × Supervisor Support → WFC	-.09*	-.35**	-.10*	-.11*				
R ² _{job insecurity}	.28**	.28**	.28**	.28**	.18**	.18**	.18**	.18**
R ² _{work-family conflict}	.29**	.36**	.29**	.37**	.28**	.38**	.29**	.38**
R ² _{generalized}	.49**	.54**	.49**	.55**	.41**	.49**	.42**	.49**

Note. N = 194. With the exception of the R² values, table values are path estimates for each respective model test. Model 1 is the simple mediation model (where job insecurity is the mediator). Model 2 is the hypothesized moderated mediation model with first-stage moderation. Model 3 examines whether the moderation occurs at the second stage of the moderation. Model 4 includes the indirect moderating effect of supervisor support (first-stage and second-stage moderation). WFC = work-family conflict.

* p < .05. ** p < .01.

and the path from job insecurity to work-family conflict was also significant, as was the indirect effect of injury on work-family conflict. These findings suggest that the indirect effect of injuries on work-family conflict through job insecurity is not significant for employees that experience high supervisor support, while it is significant for employees that do not experience high support. This supports our argument that the resource of supervisor support can significantly reduce the negative impact of injuries on work-family conflict.

Financial Insecurity

We found similar results for financial insecurity (see Table 3). We found that Model 2 was significantly different from the generalized R² for Model 1 (Q = .86, W = 8.47, df = 1, p < .05). Further, we found that Models 3 and 4 were not plausible alternatives to Model 2, supporting the predicted model. The path estimates (see Table 5) confirmed the predicted relationships, in which severity was associated with higher job insecurity, job insecurity was associated with higher work-family conflict, and the interaction between injury severity and supervisor support was

significant. The indirect effects tests suggest differences in the indirect effect of financial insecurity based on level of supervisor slope (see Table 4).

Spouse Financial Insecurity and Work-Family Conflict

In order to provide a verification test of the model using data that were not exclusively self-report, we replicated the analyses using financial insecurity and work-family conflict data provided by the employees' spouses, when available. As we had found with the employee data, we found the predicted model (Model 2) explained more variance than a simple mediation model (Q = .91, W = 8.03, df = 1, p < .05). Further, Model 2 was better than the two other alternative models. Examination of the path estimates (see Table 5) confirmed the predicted relationships, in which severity was associated with higher job insecurity, job insecurity was associated with higher work-family conflict, and the interaction between injury severity and supervisor support was significant. Likewise, the indirect effects analysis suggests differences in the indirect effect of financial insecurity based on level of super-

Table 4
Direct and Indirect Effects of Injury Severity on Work-Family Conflict by Level of Supervisor Support

Path	Direct effects			Indirect effects (P _{YM} P _{MX})	Total effects (P _{YX} + P _{YM} P _{MX})
	P _{MX}	P _{YM}	(P _{YX})		
For Job Insecurity – Injury Severity					
Simple paths for those high in supervisor support	.15**	.33**	.07	.05	.12*
Simple paths for those low in supervisor support	.17**	.51**	.49**	.09*	.58**
For Financial Insecurity – Injury Severity					
Simple paths for those high in supervisor support	.24**	.19**	.13*	.05	.18*
Simple paths for those low in supervisor support	.38**	.45**	.51**	.17*	.68**
For Spouse Financial Insecurity and Work-Family Conflict – Injury Severity					
Simple paths for those high in supervisor support	.38**	.08	.18*	.03	.21*
Simple paths for those low in supervisor support	.46**	.50**	.48**	.23*	.71**

Note. N = 194 for job insecurity and financial insecurity; N = 85 for spouse financial insecurity. P_{MX} = path from injury frequency to job/financial insecurity; P_{YM} = path from job/financial insecurity to work-family conflict; P_{YX} = path from injury frequency to work-family conflict.

* p < .05. ** p < .01.

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Table 5
Path Analytic Tests of Hypothesized Moderated Mediation Model and Alternative Models for Spouse Financial Insecurity and Work–Family Conflict

Path estimated	Injury severity models			
	1	2	3	4
Injury Severity → Financial Insecurity	.45**	.42**	.45**	.43**
Injury Severity → WFC	.32**	.33**	.33**	.35**
Financial Insecurity → WFC	.28**	.29**	.31**	.30**
Supervisor Support → WFC	-.41**	-.45**	-.39**	-.45**
Injury Severity × Supervisor Support → WFC			-.29**	-.26**
Financial Insecurity × Supervisor Support → WFC			-.01	-.05
$R^2_{\text{financial insecurity}}$	.16*	.16*	.16*	.16*
$R^2_{\text{work–family Conflict}}$	.35**	.40**	.35**	.40**
$R^2_{\text{generalized}}$	.45**	.50**	.45**	.50**

Note. $N = 85$. With the exception of the R^2 values, table values are path estimates for each respective model test. Model 1 is the simple mediation model (where financial insecurity is the mediator). Model 2 is the hypothesized moderated mediation model with first-stage moderation. Model 3 examines whether the moderation occurs at the second stage of the moderation. Model 4 includes the indirect moderating effect of supervisor support (first-stage and second-stage moderation). WFC = work–family conflict.

* $p < .05$. ** $p < .01$.

visor slope (see Table 4). Once more, the analyses support the predicted first-stage moderation model for financial insecurity when we used data from the participants' spouses.

Discussion

The purpose of this study was to extend the literature on outcomes of workplace injuries. In this study, we developed and tested a model that explains how and under what circumstances workplace injuries are related to work–family conflict. First, we found that workplace injuries were directly related to work–family conflict and indirectly related to work–family conflict through both job and financial insecurity, supporting Hypotheses 1, 2a, and 2b. Second, our findings indicate that supervisor support mitigates the level of insecurity and work–family conflict experienced by injured employees, supporting Hypotheses 3a and 3b. These findings are consistent with conservation of resource theory regarding the nature of work–family resources.

Implications for Theory, Research, and Practice

Existing research has identified several negative organizational and individual outcomes of workplace injuries. Our study makes several contributions to this literature. One contribution is that we examined how injuries may spillover to employees' home domains through work–family conflict. A second, related contribution of our study is that it suggests a process concerning how workplace injuries influence work–family conflict, which extends COR theory. We found that both job and financial insecurity mediated the relationship between workplace injury and work–family conflict. Although we did not test for this relationship for various family characteristics (i.e., a single nurse with no dependents vs. a married nurse with young children), we assume that this relationship holds for all individuals experiencing workplace injury because of the consistent threat to the loss of employment and financial resources.

These findings align with COR theory because these sources of insecurity may act as threats to the injured employee's resources

(i.e., employment and salary) contributing to their experience of work–family conflict. Extending current research, which suggests that workplace injury is related to job insecurity (Probst, 2004), our results suggest that supervisor support moderates that relationship. Our data suggest that injured employees are likely to experience lower levels of job and financial insecurity when they have supervisor support. These findings are consistent with the argument that injured employees often experience job instability (Keogh et al., 2000) and financial strain (Himmelstein et al., 2005). In this regard, we extend the realm of COR theory to understand how events at work can translate to perceived threats in the family domain. Examining work–family conflict in the context of COR theory is not itself new (cf., Grandey & Cropanzano, 1999; Halbesleben, Harvey, & Bolino, 2009); however, our study contributes to the dearth of research that applies COR theory to understand how workplace threats and losses—such as injuries—lead to perceived threats to the family/home domain.

Our research also extends the literature that suggests that social support plays a moderating role in the degree to which job insecurity influences individual outcomes (Sverke & Hellgren, 2002). One of the most important, but often overlooked, assumptions of COR theory is that the resources valued by individuals are only valued to the extent that they fit the situation (Hobfoll, 2001). Our study provides an interesting test of this assumption. When faced with a demand, such as a workplace injury, COR theory suggests that supervisor support should be a relevant resource because it can provide guidance in the face of an uncertain situation and, as a result, can shape resulting perceptions (Rosen, Harris, & Kacmar, 2011). However, once those perceptions have already formed (e.g., job insecurity or financial insecurity), the role of supervisor support as a resource diminishes significantly. This is supported in our relatively consistent finding that first-stage moderation is supported, whereas second-stage moderation is not. In this way, our study makes a significant contribution to the COR theory literature by suggesting a mechanism for examining the relevance (and, thus, relative value) of resources and the boundary conditions regarding

when support might be most beneficial (Zeni, MacDougall, Chauhan, Brock, & Buckley, in press).

To extend this line of research further, researchers could consider another aspect of COR theory: resource loss and gain spirals. In a loss spiral context, the loss of resources puts one in a position that makes future losses more likely, leading to a downward spiral of well-being (Hobfoll, 2011). When we embed our research into the larger literature on this topic, we find that there are studies that support the reverse of the causal chain that we have suggested. Specifically, it is possible that employees who experience work-family conflict experience more job insecurity and injuries, and that those with job or financial insecurity are more likely to get injured (Cullen & Hammer, 2007; Probst, 2004). Our research does not contradict these studies³—it merely adds to a more complete understanding of the dynamics of injury. What seems most likely is a resource loss spiral: Those experiencing work-family conflict and job insecurity are more susceptible to injury, and the greater likelihood of injury increases the likelihood of insecurity and work-family conflict. Such studies are demanding, as they require truly longitudinal designs over relatively long periods of time and sophisticated modeling, but would provide a significant step forward in this area of research.

This study also has several practical implications. As previously mentioned, occupational injuries are costly for organizations and individuals. Therefore, research that leads to the development of a comprehensive understanding of the outcomes of workplace injuries and that enhances our ability to form meaningful interventions is necessary. Our study suggests two ways in which managers can reduce the levels of work-family conflict of injured employees. First, organizations should take steps to decrease the level of job and financial insecurity of injured employees. For instance, many organizations provide paid sick days, workers' compensation, and short- and long-term disability insurance to their employees to help ease perceptions of financial insecurity. Yet many employees are hesitant to file workers' compensation claims or use sick days for workplace injuries (Morse et al., 1998; Shannon & Lowe, 2002). Organizations can do more to publicize these benefits and reduce barriers (real and perceived) to their utilization (Azaroff, Levenstein, & Wegman, 2002). In order to reduce perceptions of job insecurity, depending on the severity of the injury, employees could be encouraged to complete training and/or online continuing education credits while they are recovering from their injury (assuming it is an injury that requires time away from the employee's normal position). For nursing staff, injuries could be an opportunity to provide management training in order to support the career progression of the employee and increase the managerial capacity of the staff (Spetz & Adams, 2006).

The second means of reducing work-family conflict is by improving perceptions of supervisor and organizational support. This study is consistent with previous research and suggests that organizations can decrease levels of job insecurity and work-family conflict by improving perceptions of supervisor and organizational support (Büssing, 1999; Eby et al., 2005). Therefore, the organization should seek to provide an environment that supports, not excludes, employees that experience a workplace injury. In particular, in our moderated mediation models, we found support for our first stage moderation—that supervisor support moderated the relationship between injury and insecurity. Thus, supervisors should make an effort to discuss employees' injuries with them in

order to reassure employees regarding their worries about perceived job and financial insecurities.

Finally, although our study shows that it is beneficial for organizations and managers to minimize negative consequences associated with workplace injuries, it is also critical to consider preventative measures that can help reduce the likelihood of injuries, particularly given the very high injury rates found in health care, as suggested by our studies. For instance, lifting teams and mechanical devices have been shown to help reduce the likelihood of musculoskeletal injuries in nurses (Collins & Owen, 1996). Additionally, recent meta-analyses that examined the influence of organizational and psychological safety climate on injuries suggests that employees' perceptions regarding management commitment to safety is among the most robust predictors of occupational injuries (Beus, Payne, Bergman, & Arthur, 2010; Clarke, 2010, 2013). Thus, organizations should consider improving the safety of their workplaces through training, mechanical devices, and managerial and organizational influences to help reduce the prevalence of workplace injuries.

Limitations and Future Research

There are a number of limitations to our research that are worth noting. First, although single-occupation samples are very common in workplace injury studies (largely because of the occupation-specific nature of injury exposure), we do acknowledge that some of the types of injuries studied here (e.g., needlesticks, allergic reactions, chemical splashes) will not generalize to other samples, and thus the impact of work-family conflict may not be the same. Future research should attempt to replicate our findings using a different sample of employees who may receive more severe injuries (i.e., construction workers). On a related note, our sample is predominantly female. Gender differences in work-family conflict and job insecurity have long been understood (Duxbury & Higgins, 1991; Rosenblatt, Talmud, & Ruvlo, 1999); replication in a more gender-balanced occupation may yield different findings.

On the surface, our injury rates appear to be very high. We note that our rates may not be comparable with other studies because (a) self-reports may make the rates appear higher than other studies, and (b) our criteria for injuries are not as stringent as those used in some studies, especially studies relying on secondary data (which often use criteria such as Occupational Safety and Health Administration [OSHA] recordable injury criteria). We used less stringent criteria because injuries are already a low base-rate phenomenon; using highly stringent criteria, such as OSHA recordable injury criteria, may have made it very difficult to obtain enough variability in injuries to test for effects (Chowdhury & Endres, 2010). Indeed, a number of recent studies (e.g., Christian et al., 2009; Wallace & Chen, 2006; Zohar, 2002) have advocated studying "microaccidents," or accidents leading to minor injuries, because they are a more common occurrence in organizations. One may question whether minor injuries like bruises could lead to concerns about financial insecurity. To the extent that employees perceive

³ However, we note that when we did test the reverse of our model using the data we have, work-family conflict was associated with higher injuries, but there was not a mediating effect of job or financial security. These results are available from the authors.

injuries to be a reflection of their performance, we believe that even minor injuries may draw into question one's job and financial security. In fact, this may be particularly true in the case of many minor injuries because, particularly in health care, there are so many safety protocols meant to protect workers from minor injuries (cf., Wilburn & Eijkemans, 2004, for a description of universal precautions to reduce needlestick injuries). As a result, reporting a minor injury may be more likely to highlight that the employee did not follow simple safety protocols (Zhao & Olivera, 2006). Empirically, if we run the analysis leaving out more minor injury categories (e.g., cuts/bruises, allergic skin reactions, and trips/falls) the results were essentially the same. Further, if we excluded injuries that led to one day missed or less, we still found the same pattern of results. It is noteworthy that, despite using lower criteria, our study shows that seemingly less severe injuries still have an impact on work–family conflict and job and financial insecurity. We note as well the results also hold if we only analyze the major injuries; however, because they are so less common, the effect sizes are not quite as strong.

We answer the call from Christian et al. (2009) for more theoretically driven, longitudinal research designs that are better equipped to test the appropriate causal ordering of safety-related variables. A strength of our study is that we were able to gather injury reports every 6 months for 2 years. This is an improvement over other studies, which have typically asked for employees to recall their injuries from the previous year (Barling et al., 2003a, 2003b). However, we acknowledge that employees may have poor memories for workplace injuries, and thus we recommend that future research should shorter time periods whenever possible (Landen & Hendricks, 1995) or alternative techniques (Mazzetti & Blenkinsopp, 2012).

Researchers could further extend our findings by examining the relationship between job and financial insecurity and other outcomes and reactions to workplace injury. For example, job insecurity may predict injury reporting; those who have greater job insecurity may be less inclined to report their injury for fear of repercussions. Probst, Brubaker, and Barsotti (2008) found that safety climate also plays a role in this process, such that organizations with poorer safety climate had significantly higher rates of injury underreporting. Future research should expand upon these findings in order to better understand how and why job insecurity and safety climate may influence employees' reporting of injuries.

Finally, we did not control for job demands, which could be related to work–family conflict and injury (Bakker, Demerouti, & Dollard, 2008; Christian et al., 2009; Hall, Dollard, Tuckey, Winefield, & Thompson, 2010; Nahrgang et al., 2011). In this study, we were considering an injury to be a job demand, and other studies have considered insecurity and work–family conflict as job demands (cf., Allen et al., 2000; Gilboa, Shirom, Fried, & Cooper, 2008). However, future researchers should consider controlling for specific demands (or other constructs) that could increase the exposure to injury as well as increase work–family conflict (e.g., fatigue from working long hours).

Conclusions

Although organizations have sought to promote safety practices in the workplace, occupational injuries are still common phenomena that have negative costs for employees and employers. This

study extends previous work by examining family-related implications for injured employees. In addition to identifying a link between workplace injuries and work–family conflict, this research found that the lack of supervisor support is an explanation for increased levels of work–family conflict. Our findings are significant because they highlight the importance of supervisor support to injured employees as a resource that alleviates the strain related to the potential negative economic and family consequences that injured employees may encounter.

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Call for Nominations: *Journal of Occupational Health Psychology*

The Publications and Communications (P&C) Board of the American Psychological Association has opened nominations for the Editorship of *Journal of Occupational Health Psychology* for the years 2016–2021. Joseph Hurrell, Jr., PhD, is the incumbent editor. The Editor search committee is co-chaired by Suzanne Corkin, PhD and Gary VandenBos, PhD.

The *Journal of Occupational Health Psychology* publishes research, theory, and public policy articles in occupational health psychology, an interdisciplinary field representing a broad range of backgrounds, interests, and specializations. Occupational health psychology concerns the application of psychology to improving the quality of work life and to protecting and promoting the safety, health, and well-being of workers. The *Journal* has a threefold focus on the work environment, the individual, and the work-family interface. Each article should represent an addition to knowledge and understanding of occupational health psychology.

Candidates should be available to start receiving manuscripts in early 2015 to prepare for issues published in 2016. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Candidates should be nominated by accessing APA's EditorQuest site on the Web. Using your Web browser, go to <http://editorquest.apa.org>. On the Home menu on the left, find "Guests." Next, click on the link "Submit a Nomination," enter your nominee's information, and click "Submit."

Questions and prepared statements of one page or less in support of a nominee can also be submitted by e-mail to Sarah Wiederkehr, P&C Board Search Liaison, at swiederkehr@apa.org.

Deadline for accepting nominations is January 11, 2014, when reviews will begin.