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Reoccurring injury, chronic health conditions, and behavioral health: Gender differences in the causes of workers' compensation claims

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Abstract

Objective: To examine how work and non-work health-related factors contribute to workers' compensation (WC) claims by gender.

Methods: Workers (N=16,926) were enrolled in the Pinnacol Assurance Health Risk Management study, a multiyear, longitudinal research program assessing small and medium-sized enterprises in Colorado. Hypotheses were tested using gender stratified logistic regression models.

Results: For both females and males, having incurred a prior WC claim increased the odds of a future claim. The combination of incurring a prior claim and having certain metabolic health

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conditions resulted in lower odds of a future claim. Behavioral health risk factors increased the odds of having a claim more so among females than among males.

Conclusions: This study provides data to support multifactorial injury theories, and the need for injury prevention efforts that consider workplace conditions as well as worker health.

Keywords

Injury prevention; worksite wellness; depression; headache; sleep

Introduction

Many risk factors contribute to the occurrence of work-related injuries, including a worker's job duties, tasks and associated hazards, the organization of work, employer adherence to safety regulations and best practices, as well as personal attributes of employees (1). Research has shown that demographics, such as a worker's age (2), health-specific variables, such as sleep (3), occupation-specific variables, such as job demands (4) and industry type, contribute to filing of workers' compensation (WC) claims. However, these studies have limited generalizability. First, many studies are limited to specific industries and/or types of injuries. Furthermore, studies rarely look at the interaction between these sets of risk factors. Finally, we are unaware of any studies that have compared the relative contributions of these factors to the likelihood that an injury claim will occur. Specifically, while previous studies have documented differences in the type, occurrence and frequency of injury in relation to gender (REF), there is little known about how the occurrence of a WC claim is impacted by the interplay of gender, work-injury risk factors, and personal health risk factors. The purpose of the present study is to examine the multi-factorial nature of work-injury, to identify the factors that contribute most to WC claims, and determine how gender differences may contribute to the prediction of WC incidence.

Past claim

Estimates from prior research indicate that about one-third of workers who are injured at work and who file a WC claim will experience a subsequent injury and WC claim. Galizzi's study of workers participating in the National Longitudinal Survey of Youth found that 33% of previously injured workers have a second injury within a twelve-year period (5). Ruseckaite et al. found a similar re-injury rate of 37% within a five-year period in their sample of workers in a Australian WC database (6). To explore the reasons why past WC claims impact future WC claims, we tested the interaction effects between prior claim, chronic health conditions, and work task difficulty in a large cohort of employees across the spectrum of industries in Colorado.

Health status

In a previous study, we linked de-identified WC claims data to health risk assessment (HRA) data to test a preliminary predictive WC claim model (7). That study was one of the few that linked employees' health and WC claims, and the only one to include a large sample of diverse employees from businesses of all sizes. This previous analysis found that several health risks such as smoking, stress, high body mass index, and having diabetes were more

commonly found among claimants than non-claimants. However, after controlling for demographic and work organization factors, only psychological stress remained a significant predictor of WC incidence. Importantly, even our best models suggested that although there were statistically significant relationships among variables, we could explain only 6% of the variation in responses even when 35 personal health risk factors and 10 demographic variables were included. Those previous findings suggest that the cause of WC claims is multifactorial, and a predictive model should account for the multiple, interactive causes of injury. In the current study, we hypothesized that health status would be predictive of future WC claims, and its effect would be moderated by whether a worker has had a previous WC claim.

Work task difficulty

Several empirically tested theoretical models demonstrate a link between a worker's capabilities and work-related injury. Ergonomics and human factor theories (1), the job demands-resources theory, person-environment fit and conservation of resources theory all state that for work to be productive and safe, the job must be fit to the worker and not vice versa (1, 8). Thus, we hypothesized that work task difficulty where job requirements are not a good fit with the worker's ability would be predictive of future WC claims.

We also hypothesized that this relationship would be modified by whether a worker had a previous WC claim. Jinnett et al. found that workers with cognitive and physical difficulties at work have significantly more absenteeism and presenteeism (9). However, this effect was most pronounced among workers filing a WC claim in the past year. This interaction effect suggests a relationship between work task difficulty and WC claims. Indeed, Nahrgang et al.'s meta-analysis found that high physical work demands were associated with higher rates of accidents and injuries, adverse events, and unsafe behaviors (10).

Gender

A person's gender has been shown to predict different health outcomes. There are some health conditions that are more common among women, such as poor psychosocial health (11); however, it is important to consider contextual factors when studying gender differences in health (12). In the context of work, national injury and fatality data indicate that men are more likely to be injured or killed at work than women (13). Researchers hypothesize that these differences are due to greater occupational hazard exposures among males. However, when women are injured, they are more likely to sustain cumulative injuries or illnesses that have developed over a longer exposure term, such as musculoskeletal disorders (14). Thus, the pathways to work injury among men and women may be different, and gender-specific research may be needed in order to facilitate the development of gender-focused health protection and promotion strategies (15).

Methods

Study Design and Participants

From May 1, 2010 through December 31, 2014, 16,926 workers in Colorado completed a baseline health risk assessment (HRA) as part of a health risk management program offered

to companies by Pinnacol Assurance, their WC insurer. Details of our design are provided in two previous publications (16, 17). In brief, the HRA included validated questions about chronic health conditions and job demands from the World Health Organization's Health and Work Performance Questionnaire (HPQ) (18) and the more abbreviated HPQ Select (19). The HRA data were linked to WC claims data though a robust linkage process whereby both sets of data were sent to an independent third party to be de-identified and then provided to researchers for analysis. The Colorado Multiple Institution Review Board determined this study to be exempt from human subjects research.

Measures

Past and Future Claims—For the purposes of this study, past claims were defined as claims that occurred within 365 days prior to an individual's baseline HRA, that were greater than $0, and were closed within two years. Future claims were defined as claims that occurred within 365 days after an individual's initial HRA that were greater than $0, and closed within two years. We excluded 1,791 future claims with no dollar value, and 56 future claims for still being open after two years. We chose to exclude claims that were open after two years because in this data set 99% of claims were closed within two years. We created a binary variable to represent the existence of a past claim, and another to represent the existence of a future claim.

Health status—The HRA asked 29 questions about various health conditions. In previous research, each health condition was individually included in the statistical model as an independent health risk (7). To reduce the number of variables that would be included in this model, the health risks were categorized into the following groupings: behavioral (depression, anxiety, fatigue, sleeping problems, other emotional problems), metabolic (hypertension, diabetes, obesity, high cholesterol), arthritis and pain (arthritis, chronic pain, back/neck pain, osteoporosis), headaches (migraines or other frequent headaches), respiratory (asthma, bronchitis/emphysema, allergies), digestive (ulcer, gastroesophageal reflux disease, inflammatory bowel syndrome, bladder/urinary conditions), heart and pulmonary (congestive heart failure, coronary heart disease, chronic obstructive pulmonary disease), cancer (skin cancer or any other type of cancer), and substance use disorder (nicotine dependence, alcohol/drug problems). Individuals were considered to have a health condition if they answered "Yes, but I never received professional treatment," "Yes, I previously received (but don't currently receive) professional treatment," or "Yes, and I currently receive professional treatment" to any of the individual conditions that made up the overarching condition. For example, if an individual answered "Yes, but I never received professional treatment" to having sleeping problems, he or she would be rated as having a poor behavioral status.

Work task difficulty—We classified work task difficulty as follows: no work task difficulty, cognitive task difficulty, physical task difficulty, or both cognitive and physical task difficulty. This variable was constructed using questions from the HRA. Individuals were considered to have physical task difficulty if they reported difficulties with the following physical activities at work in the previous four weeks: walking, lifting, sitting, and doing repetitive motions. Individuals were considered to have cognitive difficulty if they

reported difficulty with work tasks like difficulty concentrating or being careful while performing work tasks in the previous four weeks (9).

Covariates—Other variables used in this study included the potential confounders race/ethnicity, pay scheme (hourly or salaried), employment type (full time or part time), age, educational status, income, company size, industry, and job category (7).

Statistical Analysis

We produced descriptive statistics for all variables and conducted bivariate analyses, specifically chi-square tests and Student's t-tests. These results guided our decisions regarding which covariates to include in the logistic regression model. Our first model included past claims and covariates. Our second model added the health condition and work task difficulty variables. Our final model included all variables from the second model plus the interaction terms between past claims and health condition variables, and past claims and the work task difficulty variable. A likelihood ratio test indicated that one or more of the interaction terms meaningfully added to the fit of the model. After the likelihood ratio test, we used backward elimination to reduce the number of interaction terms to the ones that significantly contributed to the model. In the final model, we used repeated measures to cluster by employer to account for nested data. Due to differences between women and men with respect to occupational exposures and injury outcomes, we stratified all analyses by gender (14, 15, 20). All models were adjusted for age, race/ethnicity, income, employment type, pay scheme, occupation, industry, and company size. SAS Version 9.4 (SAS Institute Inc., Cary, NC, USA.) was used for all analyses.

Results

Sixty percent of the study population with a future claim was female (Table 1). Most women who had a future claim were Caucasian, had some college education, earned more than $25,000 per year, were employed full time, paid hourly, worked in professional, clerical, or service occupations, worked in the public administration industry, and worked for businesses with fewer than 500 employees. Most men who had a future claim were Caucasian, had some college education, earned more than $35,000 per year, were employed full time, paid hourly, worked in precision, chemical or labor occupations, worked in the construction, transportation, wholesale trade, and retail trade industries, and worked for businesses with fewer than 500 employees.

Bivariate analyses highlighted some differences and similarities in the occurrence of future claims between men and women. A higher proportion of men with a future claim were Hispanic (20%) compared to those without a claim (14%). Additionally, among men with a future claim, a higher proportion reported substance abuse (24% vs. 19%), compared to men without a future claim. More women with a future claim reported having behavioral (59% vs. 46%), metabolic (56% vs. 50%), headache (41% vs. 32%), and digestive (36% vs. 30%) health conditions, compared to women without a future claim. Regardless of gender, a higher proportion of those with a past claim also experienced a future claim, compared to those without a past claim.

The final multivariable models for women and men are presented in Table 2. For both women and men, having a past claim was most predictive of incurring a future claim (Women: OR = 2.6, 95% CI = 1.0 – 6.8; Men: OR = 6.7, 95% CI = 4.3 – 10.3).

For women, behavioral health (OR = 1.4, 95% CI = 1.1 – 1.9) and headache conditions (OR = 1.3, 95% CI = 1.0 – 1.7) were associated with greater odds of having a future claim. Women who had both a past claim and reported cognitive difficulty at work had a higher odds of a future claim (OR = 3.0, 95% CI = 1.0 – 8.6). Furthermore, women who had both a past claim and reported cognitive and physical difficulty at work had higher odds of a future claim (OR = 3.1, 95% CI = 0.9 – 10.7). Women with both a past claim and a metabolic condition had lower odds of a future claim (OR = 0.4, 95% CI = 0.1 – 1.0).

Among men, health conditions and work task were not associated with likelihood of a future claim, overall. However, men who had a past claim and either a metabolic health condition (OR = 0.4, 95% CI = 0.2 – 0.8) or a digestive condition (OR = 0.3, 95% CI = 0.1 – 0.8) had lower odds of a future claim.

Discussion

In addition to confirming the earlier observation that WC claims are more likely to occur in workers who have had a previous WC claim, this study establishes an important interplay between workers' chronic health conditions and the likelihood of filing a future WC claim. For both men and women, workers with both a past claim and hypertension, diabetes, obesity, and/or high cholesterol predicted a lower probability of reporting a future claim. Importantly, our study also identifies a potentially important gender difference related to behavioral health. Women, and not men, were more likely to file a future claim if they reported suffering from depression, anxiety, fatigue, sleeping problems, and/or other emotional problems and migraines or other frequent headaches. Additionally, women workers who had a prior claim and who reported difficulty concentrating or being careful had higher odds of a future claim. Our findings support the need for integrated injury prevention and return to work interventions that consider work-related, as well as personal risk factors, and that attend to gender differences in behavioral health. Our results confirmed the hypothesis that past claims are significantly associated with future claims (REFS). The hypothesized reasons for incurring multiple work-related injuries range from worker-specific factors to poor work environments. There has been relatively little research on why workers, in general, have multiple claims (6, 23–25). Much of the research has specifically focused on reoccurring back injuries (26, 27).

Two lines of thought can found in the research literature on this subject, either attributing the risk of recurrent injury to the employer or to the worker. The research that has been done supports the systematic, work environment focused hypotheses, rather than the accident proneness hypotheses (5). Indeed, decades of research demonstrates that systematic, work environment factors continue to play the most pivotal role in injury prevention (1). For example, Marras found that some worker-related factors, such as physical functioning, were related to reoccurring back pain, but employer-related factors were also related, such as supervisor support and hours worked (30). Nonetheless, in some instances workers' inherent

characteristics may predispose them to injury (28). It is also possible that the injury reporting culture within their business encourages claim filing. The predictive model in our study attempted to account for this by including an employer-level random intercept.

There is debate about whether health risks alone increase the risk of work-related injuries (7). Our findings suggest that health status is associated with claims, but this relationship is modified by whether the worker had a prior claim. For men and women, those with a past claim and metabolic conditions related to hypertension, diabetes, obesity, and high cholesterol had lower odds of a future claim. Previously, researchers hypothesized that these kinds of chronic health conditions would increase, not decrease, injury risk (31). However, after accounting for a prior claim, they decreased the likelihood of filing a future WC claim. This could be due to the injury recovery process. Workers with these chronic health conditions may have more difficulty recovering from their initial work injury, and thus may be either on modified duty or away from work and not exposed to hazards that might lead to a future claim (32). It is important to recognize that a large proportion of work-related injuries are never reported to WC (REF). We speculate that one reason why previously injured workers who have chronic health conditions may be less likely to file a future claim even if they have been reinjured is due to fear of job loss and the associated loss of health insurance (REF). Future research is needed to understand why chronic health conditions appear to be protective.

Among women, headache and poor behavioral health had an independent association with future claims. This suggests that there is an additive effect for women of past claims and behavioral health and headaches on the occurrence of future claims. Previous research has demonstrated a significant relationship between work-related injury and headaches (33), sleep (34, 35), depression (36), and psychological distress (7, 35). One reason for this finding may be that, in general, women are more likely to have psychosocially-related health conditions than men (12). In the context of work, women may have different experiences than men that may contribute to psychological distress. Indeed, Hooftman et al. found that even within the same job, men and women report different job strain exposures (37). This may be especially apparent around work/life stress (38). The effect observed in the present study may also be due to the relationship between stress and musculoskeletal injury (39). Future research is warranted to better understand the relationships between the type of injury, type of re-injury, job hazards, gender, and health status.

An additional psychosocial issue, cognitive work task difficulty, was also associated with higher odds of a claim. Specifically, women who had a prior claim and who reported difficulty concentrating or being careful at work also had increased odds of a future claim. This may be due to gender differences in the social consequences of injury (29). Post-injury, women may experience more fatigue or stress from managing home life, a lack of opportunity to adjust work demands, and unfavorable interactions with the WC system (15). Future research should investigate the psychological, social, and behavioral consequences of work-related injury among women and how they impact return to work and re-injury (29).

Limitations

This study has several limitations. First, the HRA data were self-reported, which could lead to biases in the data and analyses. For example, self-reported diabetes is not as reliable of a measure as clinically diagnosed diabetes. Second, only businesses enrolled in the health risk management program at Pinnacol were included in this study, which could potentially bias the data and analyses since participation in this program was voluntary. Thus, businesses that were already interested and engaged in promoting worker health and well-being may be over-represented in this data. Third, even though we used clustering to attempt to control for the variation in claims by employers, there could still be employer level factors that affect the occurrence of claims that we are not capturing in this study. This includes accounting for whether a business adjusts its safety procedures or polices after an incident, and whether job accommodation is offered. Fourth, we do not know if the WC claim in the year prior to the baseline HRA was the first WC claim that a worker ever experienced. Finally, only a small percentage of people in this cohort reported physical work task difficulty, which might have limited our ability to detect a significant relationship.

Conclusions

When comparing the relative contribution of each of the significant risk factors in our models, it is easy to see that employers should first attend to the hazards and exposures that caused the initial WC claim. If a WC claim occurs, employers should complete a root cause analysis to prevent other workers from injury and prevent injuries from re-occurring. When workers are ready to return to work after an injury, employers should apply strategies that minimize the risk of re-injury and future WC claim in any previously injured worker, regardless of the employee's personal health status. Workers, as well as employers, should be educated on ways to address work task difficulty so that returning workers can be both productive and protected from future injury. While our data suggest that gender differences in headaches and behavioral health contribute to the risk of a future WC claim, employers would be well-advised to identify and mitigate the contribution of working conditions to poor behavioral health for all employees, potentially including behavioral health promotion as part of safety and return to work programs.

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Clinical significance:

Prior claims was the most significant risk factor for future claims, regardless of gender. However, among women, behavioral health also played a significant role in injury and future claims. Behavioral health promotion policies and practices should be integrated into safety programs to help prevent injuries and promote well-being.

Table 1.

Individual and organizational characteristics of employees who took an HRA by whether or not they had a future WC claim, N = 16,926.

	Women N = 10,182		Men N = 6,744	
	No Future Claim N = 9,910	Future Claim N = 272	No Future Claim N = 6,453	Future Claim N = 291
Characteristic	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Age †				
18 – 24	746 (8%)	21 (8%)	549 (8%)	32 (11%)
25 – 34	2,517 (25%)	58 (21%)	1742 (27%)	88 (30%)
35 – 44	2,261 (23%)	67 (25%)	1665 (26%)	65 (22%)
45 – 54	2,462 (25%)	72 (26%)	1429 (22%)	54 (19%)
55 – 64	1,684 (17%)	46 (17%)	888 (14%)	48 (17%)
65+	240 (2%)	8 (3%)	180 (3%)	4 (1%)
Race/Ethnicity ††				
Caucasian	8,319 (85%)	234 (86%)	5189 (81%)	213 (75%)
African-American	150 (2%)	1 (<1%)	88 (1%)	3 (1%)
Hispanic/Latino	982 (10%)	29 (11%)	866 (14%)	58 (20%)
Other	333 (3%)	7 (3%)	231 (4%)	10 (4%)
Education *** †††				
Some High School or Less	583 (6%)	11 (4%)	515 (8%)	34 (12%)
High School Graduate	1,260 (13%)	33 (12%)	1,317 (20%)	79 (27%)
Some College/2 Year College	2,927 (29%)	109 (40%)	2,031 (32%)	110 (38%)
4 Year College or More	5,140 (52%)	119 (44%)	2,590 (40%)	68 (23%)
Annual Income *** †††				
Less than $10,000	731 (8%)	20 (8%)	299 (5%)	22 (8%)
$10,000 – 14,999	589 (6%)	22 (8%)	155 (2%)	6 (2%)
$15,000 – 19,999	529 (6%)	25 (10%)	181 (3%)	12 (4%)
$20,000 – 24,999	853 (9%)	38 (14%)	353 (6%)	25 (9%)
$25,000 – 34,999	1,855 (20%)	59 (23%)	879 (14%)	52 (19%)
$35,000 – 49,999	2,479 (27%)	54 (21%)	1,486 (25%)	78 (28%)
$50,000 – 74,999	1,540 (17%)	35 (13%)	1,441 (24%)	53 (19%)
$75,000 or more	633 (7%)	9 (3%)	1,254 (21%)	27 (10%)
Employment Type ††				
Full Time	8,727 (88%)	237 (87%)	6,173 (96%)	285 (98%)
Part Time	1,183 (12%)	35 (13%)	280 (4%)	6 (2%)
Pay Scheme *** †††				
Salary	4,652 (49%)	90 (34%)	3,035 (49%)	68 (24%)
Hourly	4,764 (51%)	177 (66%)	3,142 (51%)	210 (76%)
Occupation *** †††				
Executive	1,206 (13%)	28 (11%)	1,050 (17%)	19 (7%)

	Women N = 10,182		Men N = 6,744	
	No Future Claim N = 9,910	Future Claim N = 272	No Future Claim N = 6,453	Future Claim N = 291
Characteristic	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Professional	3,918 (41%)	78 (29%)	1,718 (28%)	56 (19%)
Technical Support	177 (2%)	6 (2%)	222 (3%)	6 (2%)
Sales	510 (5%)	12 (5%)	558 (9%)	12 (4%)
Clerical	2,203 (23%)	53 (20%)	155 (2%)	3 (1%)
Service	1,055 (11%)	57 (22%)	812 (13%)	56 (20%)
Precision	40 (<1%)	2 (<1%)	364 (6%)	17 (6%)
Chemical	15 (<1%)	1 (<1%)	68 (1%)	6 (2%)
Laborer	344 (4%)	28 (11%)	1,282 (21%)	111 (39%)
Industry *** †††				
Agriculture	33 (<1%)	1 (<1%)	29 (<1%)	6 (2%)
Mining/Construction	306 (3%)	1 (1%)	1477 (23%)	77 (26%)
Transport/Communication/Electric/Gas/Sanitation	295 (3%)	4 (1%)	489 (8%)	25 (9%)
Wholesale Trade	217 (2%)	8 (3%)	315 (5%)	20 (7%)
Retail Trade	190 (2%)	1 (<1%)	342 (5%)	16 (6%)
Finance	868 (9%)	25 (9%)	754 (12%)	20 (7%)
Services	694 (7%)	6 (2%)	260 (4%)	1 (<1%)
Public Administration	6,576 (66%)	192 (71%)	1,855 (29%)	65 (22%)
Company Size **				
< 99 Employees	3,155 (32%)	68 (25%)	2,602 (40%)	126 (43%)
100 – 499 Employees	3,986 (40%)	128 (47%)	2,689 (42%)	121 (42%)
500+ Employees	2,769 (28%)	76 (28%)	1,162 (18%)	44 (15%)
Past Claim *** †††	245 (2%)	27 (10%)	256 (4%)	53 (18%)
No Past Claim *** †††	9,665 (98%)	245 (90%)	6,197 (96%)	238 (82%)
Health Status				
Behavioral ***	4,583 (46%)	160 (59%)	1,992 (31%)	95 (33%)
Metabolic ***	4,931 (50%)	153 (56%)	2751 (43%)	112 (38%)
Arthritis and Pain	3,712 (37%)	113 (42%)	1,882 (29%)	94 (32%)
Headache ***	3,128 (32%)	111 (41%)	938 (15%)	49 (17%)
Respiratory	4,959 (50%)	146 (54%)	2,562 (40%)	108 (37%)
Digestive **	2,937 (30%)	98 (36%)	1,334 (21%)	63 (22%)
Heart and Pulmonary	174 (2%)	8 (3%)	192 (3%)	11 (4%)
Cancer	786 (8%)	21 (8%)	351 (5%)	13 (5%)
Substance Abuse ††	1,092 (11%)	33 (12%)	1,212 (19%)	71 (24%)
Difficulty at work				
No Difficulty	4,122 (41%)	118 (43%)	2,846 (44%)	133 (46%)
Cognitive Difficulty	4,040 (41%)	101 (37%)	2,748 (42%)	119 (41%)
Physical Difficulty	385 (4%)	12 (5%)	169 (3%)	4 (1%)

	Women N = 10,182		Men N = 6,744	
	No Future Claim N = 9,910	Future Claim N = 272	No Future Claim N = 6,453	Future Claim N = 291
Characteristic	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Both Cognitive and Physical Difficulty	1,363 (14%)	41 (15%)	690 (11%)	35 (12%)

*Indicates $p < 0.10$,

**Indicates $p < 0.05$,

***Indicates $p < 0.01$ among women

†Indicates $p < 0.10$,

††Indicates $p < 0.05$,

†††Indicates $p < 0.01$ among men

Table 2.

Multivariable logistic regression on the occurrence of future workers' compensation claims by workers' compensation claim history, chronic health conditions, and work task difficulty, N = 16,926.

	Women N = 10,182		Men N = 6,744	
	OR	**95% CI**	**OR**	**95% CI**
Past Claim(s) ** ††† *[ref = no past claim(s)]*	2.6	1.0 – 6.8	6.7	4.3 – 10.3
Type of Health Condition *[ref = no specific health condition]*				
Behavioral **	1.4	1.1 – 1.9	1.0	0.7 – 1.4
Metabolic	1.1	0.7 – 1.6	1.0	0.7 – 1.3
Arthritis and Pain	0.8	0.6 – 1.1	1.1	0.8 – 1.6
Headache **	1.3	1.0 – 1.7	1.1	0.8 – 1.5
Respiratory	1.0	0.8 – 1.3	1.0	0.8 – 1.3
Digestive	1.1	0.8 – 1.4	1.2	0.8 – 1.7
Heart and Pulmonary	1.2	0.5 – 2.7	1.5	0.8 – 2.8
Cancer	0.8	0.5 – 1.3	1.0	0.6 – 1.9
Substance Abuse	0.8	0.5 – 1.3	1.1	0.7 – 1.5
Work Task Difficulty *[ref = no work task difficulty]*				
Cognitive task difficulty	0.8	0.6 – 1.1	1.1	0.8 – 1.4
Physical task difficulty	0.8	0.4 – 1.6	0.4	0.2 – 1.1
Both cognitive and physical task difficulty	1.1	0.7 – 1.7	0.9	0.5 – 1.6
Past Claim x Metabolic * ††† *[ref = no past claim and no metabolic health condition]*	0.4	0.1 – 1.1	0.4	0.2 – 0.8
Past Claim x Digestive †† *[ref = no past claim and no digestive health condition]*	-	-	0.3	0.1 – 0.8
Interaction term between past claim and work task difficulty *[ref = no past claim and no task difficulty]*				
Past Claim × Cognitive task difficulty **	3.0	1.0 – 8.6	-	-
Past Claim × Physical task difficulty	3.0	0.6 – 14.7	-	-
Past Claim × Both cognitive and physical task difficulty *	3.1	0.9 – 10.7	-	-

*Indicates p < 0.10,

**Indicates p < 0.05,

***Indicates p <0.01 among women

†Indicates p < 0.10,

††Indicates p < 0.05,

†††Indicates p < 0.01 among men

-interaction term was not included

Note: Models were adjusted for age, race/ethnicity, income, employment type, pay scheme, occupation, industry, and company size.