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Workplace improvements to support safe and sustained return to work: Suggestions from a survey of workers with permanent impairments

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Abstract

Background: Roughly 10% of occupational injuries result in permanent impairment. After initial return to work (RTW), many workers with permanent impairments face RTW interruption due to reinjury, unstable health, disability, and layoff. This study used open-ended survey data to: (1) explore workplace factors identified by workers as important levers for change, some of which may previously have been unrecognized; and (2) summarize workers' suggestions for workplace improvements to promote sustained RTW and prevent reinjury.

Methods: This study included data from workers' compensation claims and telephone surveys of 582 Washington State workers who had RTW after a work-related injury involving permanent impairment. The survey was conducted in 2019, about a year after claim closure. We used qualitative content analysis methods to inductively code open-ended survey responses.

Results: The most frequent themes were: safety precautions/safer workplace (18.1%), adequate staffing/appropriate task distribution (16.2%), and safety climate (14.1%). Other frequent themes included ergonomics, rest breaks, job strain, predictability and flexibility in work scheduling

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practices, employer response to injury, social support, communication, and respect. Many workers reported that they were not listened to, or that their input was not sought or valued. Workers often linked communication deficiencies to preventable deficiencies in safety practices, safety climate, and RTW practices, and also to lack of respect or distrust. In counterpoint, nearly one-third of respondents reported that no change was needed to their workplace.

Conclusions: Policies and interventions targeting worker-suggested workplace improvements may promote safe and sustained RTW, which is essential for worker health and economic stability.

Keywords

workplace; return to work; occupational injuries; workers' compensation; permanent partial disability; permanent impairment; safety climate; social support; job strain; unemployment

1 INTRODUCTION

Employment is a critical social determinant of health.^{1,2} Sustained return to work (RTW) after occupational injury or illness is important for workers' health and economic stability, as well as for workplace productivity. Although primary prevention is key, efforts to sustain RTW and prevent reinjury may reduce the considerable health, economic, and social burden of occupational injury/illness.³⁻⁵

Every year in the U.S., about 300,000 workers—roughly 10% of all workers injured at work—experience serious work injuries that result in a permanent impairment and a workers' compensation (WC)-based permanent partial disability (PPD) award.⁶ WC-based PPD awards provide limited compensation for certain work-related permanent impairments—those that do not entirely preclude RTW, but that do prevent working at full physical capacity (e.g., vision or hearing loss, amputation, spinal impairment). These injuries are associated with substantial subsequent wage and wealth losses relative to both uninjured workers^{7,8} and injured workers without permanent impairments.⁹⁻¹¹

Work-related permanent impairment is associated with long-term functional disability, pain, and poor health, all of which may interfere with RTW.¹²⁻¹⁷ Moreover, initial RTW does not necessarily indicate sustained RTW; many workers with a permanent impairment face RTW interruption (i.e., breaks in ongoing employment after initial RTW). Numerous factors contribute to RTW interruption, including unstable health, disability, layoff, early retirement, negative treatment by managers and coworkers, lack of accommodation, and discrimination.^{11-13,15,17-21} In particular, workers with a permanent impairment are at substantially higher risk of reinjury.^{18,22} In a previous related study, we found that at least 22% of Washington State injured workers with a permanent impairment did not RTW, even briefly, during the year after their WC claim closed.²² Among those who did RTW, 47% reported that their permanent impairment made it difficult to get a job, 58% reported that their permanent impairment made it difficult to keep their job, and over half reported being at higher risk of reinjury compared to their own pre-injury risk and compared to other workers doing the same job.²²

There is accumulating evidence that modifiable workplace organizational and psychosocial factors can impact successful RTW, injury/reinjury, disability, and work absence.^{23–34} Modifiable environmental factors (e.g., workplace, WC system, health care) were the most commonly described employment barriers in a study of RTW experiences among 150 injured workers who had used vocational rehabilitation services in the Massachusetts WC system.³⁵ Furthermore, a recent study ranked organizational and psychosocial exposures as among the most prevalent workplace exposure hazards in the northwestern U.S.³⁶

There remain substantial knowledge gaps regarding the full constellation of salient workplace factors that may be amenable to intervention, particularly with respect to injured workers who have RTW with a work-related permanent impairment. For example, in our own survey of workers with work-related permanent impairments, several modifiable workplace factors were found to be associated with safe and sustained RTW, including safety climate, supervisor support, coworker support, absence of stigmatization by supervisors or coworkers, health and safety committees, ability to take time off work for personal or family matters, adequate employer/health care provider communication, comfort reporting unsafe situations at work, and low job strain.³⁴ However, the set of workplace factors that we selected for that study was based on existing literature and a priori hypotheses, and measured using validated instruments and closed-ended survey questions. In order to further explore salient workplace factors from the standpoint of the worker,³⁷ this study uses data from open-ended questions contained in the same survey to: (1) explore workplace factors identified by workers themselves as important levers for change, some of which may previously have been unrecognized; and (2) summarize workers' suggestions for workplace improvements to promote sustained RTW and prevent reinjury.

2 METHODS

2.1 Study population and data sources

The Washington State Department of Labor and Industries (L&I) administers the WC system, which includes the State Fund (covering about 70% of workers specified by Washington's Industrial Insurance Act⁴⁵), and self-insured employers (covering the remaining 30%). Private WC insurers do not operate in Washington State. Washington State is one of only four states with no private WC insurers, which facilitates population-based research.^{38,39}

We surveyed Washington State workers who had RTW—for the same or a different employer—after incurring a work-related permanent impairment. In Washington State, impairment is defined as permanent anatomic or functional abnormality or loss of function, once maximum medical improvement has been achieved.⁴⁰ If, after completing treatment, workers have suffered permanent loss of function but are able to work, their degree of impairment may be rated for a PPD award. The survey was conducted about a year after PPD rating and claim closure. Several months before the survey, we obtained L&I WC administrative data and contact information associated with closed claims for potentially eligible workers.

Washington State workers were potentially eligible for this study if they met inclusion criteria by having an accepted State Fund or self-insured WC claim that closed with a PPD award between January 1, 2018 and April 30, 2018. Prior to delivering data to the research team, L&I staff applied six exclusion criteria: (1) no valid phone number on record; (2) under age 18 when injured; (3) permanent total disability (pension)—these workers are deemed unable to RTW; (4) residence outside Washington State; (5) L&I employees and other confidentiality exclusions imposed by L&I; and (6) fatality claims and deceased workers. L&I staff identified 2,541 workers who were potentially eligible for the survey. Two additional exclusion criteria were applied by interviewers during eligibility screening: (1) language or comprehension barrier; and (2) no RTW, as determined by a worker's response to the question, "Have you returned to work since the injury that caused your impairment or disability, even if only very briefly?" Of workers contacted and otherwise eligible for the survey, 22.2% (171 of 770) were ineligible specifically because they had not returned to work even briefly during the first year after claim closure.²²

Trained interviewers conducted live telephone interviews using computer-assisted telephone interviewing technology (i.e., automated dialing, software-managed interview script, responses typed into the computer interface by interviewers). Interviews were conducted between February 6 and April 20, 2019, 11 to 15 months after claim closure (mean: 12.8 months). In total, 582 complete and 17 partial interviews were conducted, with a response rate of 53.8%. Respondents did not notably differ from nonrespondents with regard to age, gender, State Fund vs. self-insured WC coverage, or the closed claim being their first Washington State WC claim. Further details regarding survey development, survey administration, numbers of ineligible workers excluded for specific criteria, response rate calculation, and response bias assessment are available in a previous publication.²² This study was approved by the University of Washington Institutional Review Board. All survey participants gave informed consent.

2.2 Worker, injury, and claim characteristics

Descriptive characteristics obtained or constructed from administrative data included gender, age when interviewed, primary body part for the PPD award (i.e., contributing most to the permanent impairment rating), and WC coverage type for the closed claim (State Fund versus self-insured employer). Descriptive characteristics obtained from the survey included educational level, pre-tax earnings during past year, race/ethnicity, whether born in the U.S., and union membership. The amount of missing data was negligible. Data were tabulated using Stata/MP 15.1 for Windows.⁴¹

2.3 Worker-suggested workplace improvements

We used qualitative content analysis methods to inductively code responses to the open-ended telephone survey question, "If you could suggest one change to the structure, environment, or culture of your current (or most recent) workplace that would help (or would have helped) you to continue working or prevent reinjury, what would it be?" Response options included: open-ended narrative, no change needed, don't know, or refused. Trained interviewers recorded workers' narrative responses verbatim or in summary. The 581 interviews that included any response to this question were included in this study. All

17 partial interviews were excluded because they all terminated before this question was asked, and 1 of the 582 completed interviews was excluded because the respondent declined to answer this particular question.

Following a content analysis approach,⁴² and with the assistance of Dedoose⁴³ qualitative software, two coders (ATE and JMS) began the code development process by independently coding one-third of the responses. Codes were developed inductively, rather than by approaching these data with a priori frameworks. Where responses naturally aligned with workplace factors previously identified (e.g., safety climate, social support, job strain, safety training, job accommodations), we used the same terminology as in our previous related study on modifiable workplace factors.³⁴ As responses were often detailed and multifaceted, each person's response could be assigned more than one code. We then compared our code assignments and came to consensus on an initial coding scheme and codebook. The remaining responses were independently coded using this schema, discordant codes between coders were reviewed, and consensus on final codes was reached. Codes were further grouped into themes for improved interpretability where appropriate, and frequencies of codes and themes were tabulated. Codes and themes were named to describe the workplace feature being addressed, and assigned whether workers described that feature as being present, lacking, or needing change. A variable was constructed to represent the general response options for this question, after coding and some reclassification based on coded text: (1) no change needed, (2) codable response, (3) vague/unclear response, or (4) don't know/no suggestions.

In order to put response option patterns into context, we used a closed-ended question about job satisfaction to assess our assumption that job satisfaction might be related to the propensity to offer suggestions for workplace improvement (vs. simply reporting that no change was needed). Workers were asked to rate job satisfaction ("overall, how satisfied are you with your current/most recent job?") on a 4-point scale from very dissatisfied to very satisfied. Trends in the likelihood of responding "no change needed" (recoded as a binary variable), by level of job satisfaction, were tested using a nonparametric test for trend.⁴⁴ Among the 581 included respondents, 577 answered the job satisfaction question (there were four "don't know" responses).

3 RESULTS

Although all eligible respondents (N=581) had RTW, 12.7% (N=74) were no longer working when interviewed. Time between the injury and the claim closure conferring survey eligibility ranged from one to 320 months, with a median of 18 months. Table I presents worker, injury, and claim characteristics for the eligible sample. Two-thirds of the sample were men, and 42.3% were union members when interviewed. For nearly half the sample (48.0%), an upper extremity injury was the primary contributor to the permanent impairment rating for the PPD award.

Overall, 32.5% of respondents reported that no change was needed to their workplace, in order to promote sustained RTW or prevent reinjury, while 47.7% provided codable narrative comments or suggestions. Only 5.3% provided narrative comments or suggestions

that were too vague or unclear to code, and 14.5% responded that they didn't know or did not have suggestions to make. The vast majority of respondents (84.2%) were satisfied with their job (Table II), and there was a strong association between higher job satisfaction and reporting that no workplace change was needed ($P<.0005$). Only 8.8% of workers who were very dissatisfied with their job responded that no change was needed, compared to 42.7% of workers who were very satisfied with their job.

Codable narrative responses were provided by 277 respondents, which were coded into 18 distinct themes (Figure 1). For ease of presentation, we grouped these 18 themes into six major themes (Figure 1). Respondents offered numerous constructive suggestions for workplace improvements. Some were very specific (e.g., de-icing sidewalks), while others could apply to many/most workplaces (e.g., better communication). In Table III, we present a selection of these suggestions for each major theme; however, suggestions that were coded only into the individual attitudes/behavior theme were not included in Table III, because they were not focused on workplace-level improvements. Some suggestions selected for inclusion were unique, while others were offered by many workers, using varying phraseology. Inclusion in Table III is not intended to suggest degree of importance, but rather is intended to show the breadth of suggestions offered and topics covered.

For each major theme (presented in descending frequency order below), we describe constituent themes in detail. Percentages reported below reflect the prevalence of themes and major themes (the percentage of 277 respondents mentioning the theme, unless otherwise stated), and do not sum to 100%; many responses involved multiple coded themes and themes were not mutually exclusive.

Work organization/arrangements/conditions.

Grouped together, the five coded themes in this major theme were mentioned by 37.3% of respondents ($n=103$). Adequate staffing/appropriate task distribution was the most frequent theme in this category, mentioned by 16.2% of respondents ($n=45$). Many workers mentioned that their workplaces were understaffed or could be staffed in safer ways, such as having more people on the same shift (the night shift was specifically mentioned by several). Workers described the drivers of understaffing in their workplaces, such as poor management, turnover, unscheduled work absences (sick calls), and lack of backup staff/scheduling, and also described the negative consequences of understaffing on their wellbeing, including heavy workload, unwanted overtime, and increased injury risk. Understaffing was described as both a cause and effect of high turnover. Increased teamwork was recommended by several workers, but also described as being impeded by low staffing levels. One worker explicitly stated that better staffing would have prevented their own injury. Improving task distribution (e.g., better delegation) was recommended, but often in vague terms. Job rotation was suggested by two workers. The ergonomics/rest breaks theme was mentioned by 10.5% of respondents ($n=29$). Workers mentioned the importance of a variety of supports that would be helpful to them, including comfortable/ergonomic keyboards, chairs, and other furniture, less repetitive work and postures (e.g., less sitting, less standing, less bending, less lifting), and more rest breaks. The job strain/job demands/job control theme was mentioned by 6.1% of respondents ($n=17$). Workers

mentioned overwork, high pressure, and stress, and suggested slowing the pace and/or reducing job demands (mental and physical). Most workers focused on job strain or job demands. Job control was a focus for only three workers, all of whom described their ability—because they were in charge—to adjust work to their needs as a positive existing aspect of their workplace. This points to challenges for workers who cannot adjust their work to their needs. The work scheduling theme was mentioned by 4.7% of respondents (n=13). This theme was defined to include practices related to work schedules and hours/days worked (vs. staffing/task distribution). Suggestions included wanting at least two days off in a row, more than two days off per week (e.g., working four 10-hour shifts), more stable/consistent schedules to enable planning, and more flexibility in time off for other needs. Some identified longer days and/or more hours as an improvement, while some suggested shorter days and/or fewer hours. The better wages/employment arrangements theme was mentioned by 4.0% of respondents (n=11). Most (n=9) focused on better pay. Some also suggested improvements in employment or payment arrangements. For example, one worker suggested changing pay arrangements from commission to hourly. Another wanted to be paid on the books instead of in cash, mentioning they were concerned about how cash payments might affect handling of a work injury.

Safety and safety climate.

The four coded themes in this major theme were mentioned by 35.4% of respondents (n=98). The safety precautions/safer workplace theme was mentioned by 18.1% of respondents (n=50). Many workers reported that various aspects of their workplace could be safer, and mentioned specific areas needing improvement, such as unsafe equipment (including dangerous equipment related to their injury that was either not addressed or addressed reactively), trip hazards, and lack of proper tools or personal protective equipment. Several workers described the need for management to make safety and safety programs an organizational priority, and to include a safety program in the budget. Workers also suggested better safety enforcement, and following the law [regarding safety practices]. The safety climate theme was mentioned by 14.1% of respondents (n=39). There was considerable overlap with the previous theme; however, comments coded to this theme were focused on perceived attitudes and culture with regard to safety. The need to “put safety first” was frequently mentioned, and several workers specifically mentioned safety culture as being important. A number of workers described finances as being more important to management than worker safety, and some described pressure by management to do unsafe work. Others suggested that management place a more constant and meaningful focus on safety and safety awareness in the workplace, ensure better two-way communication about safety practices and hazards, and develop better accountability systems to ensure safety. The safety training theme was mentioned by 5.4% of respondents (n=15). Workers suggested safety classes and/or coaching in safe lifting/carrying, safe use of equipment, use of personal protective equipment, injury prevention, and hearing loss prevention. Some workers suggested that safety training be made ongoing, rather than being a one-time event. One worker suggested that the existing—very general—safety training needed to be tailored to specific departments. The equipment theme was mentioned by 4.7% of respondents (n=13). Suggestions for equipment varied from very general (e.g., more automation, more technology) to very specific (e.g., install an elevator). Most suggestions focused on

equipment intended to improve safety or ergonomics (e.g., cart pullers, lifts to reach high shelves, patient lifts, building stairs vs. relying on ladders, updating drivers' seats), while a few focused on equipment to improve worker health/fitness (e.g., treadmills). Some were simple and likely inexpensive to implement (e.g., adding rubber feet to ladders).

Social support, communication, respect.

The four coded themes in this major theme were mentioned by 20.6% of respondents (n=57). The social support theme was mentioned by 12.3% of respondents (n=34), with nearly three quarters of those (n=25) specifically mentioning support from supervisors/management. Social support was often described in general terms, but more specific suggestions included management training regarding interpersonal skills, being more responsive to employee needs and suggestions, and changing the work culture to promote teamwork. When describing social support, workers used terms such as supportive, caring, empathy, listening, sympathetic, acknowledge, understanding, compassion, welcoming, work together, common goals, respond, and helping. The absence of social support was described as being "like a sweatshop," "a situation where management doesn't respond to employees," or "treating people like robots." Some workers did commend or suggest coworker support specifically, describing the importance of coworkers being willing to help each other, and having a feeling of community. The better communication theme was mentioned by 5.8% of respondents (n=16). Most workers mentioned better communication very generally; however, communication was often mentioned in conjunction with other coded themes, such as safety climate, safety training, or social support. The fair/humane treatment theme was mentioned by 3.6% of respondents (n=10). This theme was dominated by descriptions of negative treatment by supervisors/management, generally attributed to a worker being injured, reporting an injury, or returning to work with an injury/permanent impairment. Workers described the presence of and/or the need to eliminate: harassment, bullying, oppression, intimidation, retaliation for reporting unsafe conditions or the injury itself, and discriminatory treatment after RTW (e.g., preventing return to the pre-injury job, changing shift assignment, termination). One respondent attributed her inability to get help from coworkers to gender discrimination. Another worker described needing to take anxiety medication to deal with being "afraid of the poor treatment I was going to endure for the eight hours I was to be there." The value workers over costs theme was mentioned by 3.2% of respondents (n=9). Costs were described in terms of company profit, top management bonuses, or WC costs. Phraseology was often striking, for example: "management only cares about the money, not its employees;" "the concern is the bottom dollar, not...the safety and health of the employees;" "it's a very numbers driven place, so it's more about [selling the product] than about the employee;" "we are treated like a liability, not employees;" and "a bonus should not be attached to an employee's health and wellbeing" [based on not reporting injuries]."

RTW issues.

The two coded themes in this major theme were mentioned by 11.2% of respondents (n=31). The employer response to injury theme was mentioned by 7.9% of respondents (n=22). Many workers focused on the lack of acknowledgment of the injury by management/supervisors after RTW, including inadequate levels of accommodation, follow-up, empathy,

and/or support. Several workers described terminations or harassment following RTW that they attributed as reactions to their injury/permanent impairment. Workers recommended that employers/supervisors be better educated about the WC agency, be better trained to facilitate and support safe RTW, and provide more information to injured workers about available options. The job accommodations theme was mentioned by 5.4% of respondents (n=15), and was defined to include any type of job modifications that were suggested with respect to accommodating injured workers in general or related to the respondent's injury or permanent impairment. Worker suggestions included: provide chairs, stools, or desks needed to alleviate discomfort or prevent aggravation; allow more opportunity to change body position (e.g., less sitting, less repetitive motion); minimize or facilitate assistance with difficult physical tasks (e.g., lifting, reaching, bending); move the worker into a job more suited to accommodating the injury (e.g., light duty, office work); and offer flexibility in work hours to accommodate recovery and physical therapy appointments.

Health promotion and health care.

The two coded themes in this major theme were mentioned by 7.6% of respondents (n=21). The workplace health promotion theme was mentioned by 4.3% of respondents (n=12). Workers suggested employer encouragement of warm-up, stretching, strength, fitness, and wellness activities, either at the workplace (before or during work, though one worker emphasized these be voluntary), or via incentives to engage in such activities outside work (e.g., discounts for gym memberships). The health care theme was mentioned by 3.2% of respondents (n=9), and was defined to include issues related to health care access, quality, and insurance/WC coverage. Suggestions ranged from being very general (e.g., better health care) to very specific (e.g., cover my surgery, cover a specific medication). Workers mentioned wanting coverage (or more coverage) for physical therapy, physical rehabilitation, therapeutic massage, preventive/regular health care, and mental health services. One worker suggested adding in-house occupational health services.

Individual attitudes/behavior.

This theme/major theme was mentioned by 6.5% of respondents (n=18), and was defined to include comments with respect to attitudes or behaviors of the respondent and/or other workers, without reference to ways the employer, supervisor, or workplace could influence these attitudes/behaviors. Suggestions included (not an exhaustive list): being in good physical shape, paying attention to detail and to the environment, being cautious, slowing down, following workplace protocols, eating healthy food, and being more considerate about things that could cause injury.

4 DISCUSSION

This study provides important new information regarding workplace improvements that could promote safe and sustained RTW, from the standpoint of the injured worker. Narrative comments and suggested improvements from the 277 respondents who provided codable responses most frequently fell into the major theme of work organization/arrangements/conditions (37.2%), closely followed by the major theme of safety and safety climate (35.4%). It must be noted that major themes were used as a post hoc presentation tool

and major theme frequencies were thus somewhat artificial; different grouping choices would affect both the percentages and rankings of major themes. However, similar emphases were also evident at the theme level. The most frequently mentioned theme was safety precautions/safer workplace (18.1%), followed by adequate staffing/appropriate task distribution (16.2%), and then by safety climate (14.1%). The focus on safety-related issues comports with previously published data from the same survey, which revealed that more than half of respondents thought their permanent impairment put them at higher risk of being reinjured at work, compared to pre-injury (65.2%), or compared to coworkers in the same job (54.4%).²² The focus on safety-related issues also aligns with findings from a large retrospective cohort of injured workers with WC claims linked to wage data, in which workers with work-related permanent impairments had significantly higher reinjury risk compared to workers without permanent impairments—a risk differential that increased as degree of permanent impairment increased.¹¹

In an earlier study that relied on validated instruments and closed-ended survey questions from the same survey reported herein,³⁴ we found evidence for the association of several modifiable workplace factors with sustained RTW and/or reinjury—factors which also emerged in this study in the context of worker-suggested improvements. In the earlier study, for example, social support (particularly from supervisors), absence of stigmatization, safety climate, low job strain, ability to take time off work for personal or family matters, and comfort reporting unsafe work situations all had substantial and significant associations with safe and/or sustained RTW.³⁴ In the current study, workers identified all of these factors as potential targets for improvement in their open-ended narrative responses. Given that this sample was limited to workers who had RTW with a work-related permanent impairment, it was somewhat surprising that RTW issues (e.g., employer response to their injury, job accommodations) were raised by only 11.2% of respondents. On the other hand, this may in part reflect the benefits of negotiated work arrangements experienced by the over 40% of respondents who were union members. In our earlier related study, lack of needed job accommodations was reported by only 13% of respondents, and that lack was not significantly associated with RTW interruption or reinjury.³⁴ In contrast, other studies have found substantial evidence that job accommodation facilitates sustained RTW.^{24,45–49}

There are promising interventions for modifiable workplace factors such as job strain, safety climate, and social support. For example, supervisor training programs can improve safety climate and confidence managing successful RTW.^{50,51} Further, systematic reviews have documented that interventions designed to promote workplace social support, job control, and job demands can positively impact absenteeism, productivity and financial outcomes.^{52,53} However, intervention research is relatively sparse for factors such as flexible scheduling and work-life balance. Findings from this study and from our related studies would suggest taking a closer look at developing and evaluating potential interventions for these factors. Improvements in many of these workplace factors could potentially improve worker wellbeing regardless of whether their disability or permanent impairment was caused by work. Functional limitations are prevalent in the workplace—reported by 22% of employed U.S. workers.⁵⁴ Physical disability is the most common reason to exit the workforce before age 60.⁵⁵ Further, many workers do not choose to disclose their disability or impairment to supervisors and/or coworkers;^{22,56} thus, workplace-level interventions, vs.

individually-tailored interventions, may positively impact more workers without requiring disclosure.⁵⁷ Moreover, workplace-level improvements in these factors may benefit all workers, whether they have a disability or not.³⁴ Individual employers, particularly small employers, may not have the resources or motivation to implement interventions targeting these workplace factors. However, at the WC system level, it may be feasible to develop and offer trainings to educate employers about key workplace organizational and psychosocial factors, perhaps in-hand with financial support for supervisor training or structural changes. Systemic programmatic or policy support from WC agencies/insurers may be needed to develop and test efficient large-scale interventions, and encourage uptake.⁵⁸

By means of the open-ended question, this study was able to extend beyond the set of workplace factors that was identified a priori for inclusion in the survey (as instruments or close-ended questions). This study describes the workplace factors considered most important by injured workers, allowing for the identification of new factors that have not been previously identified and measured. Respondents offered numerous constructive suggestions for workplace improvements. Some were very specific, while others were very general or high-level. Some suggestions were unique, while others were offered by many workers. Improving staffing levels was a frequent suggestion, albeit a rather difficult intervention target for employers or the WC system, given profit incentives and market forces. However, some intervention targets would seem to require minimal costs, and to be potentially beneficial regardless of the specific employment scenario. For example, better communication—and more specifically, listening to workers—was embedded within many coded themes, and was mentioned in a number of different contexts (e.g., respect, safety climate, RTW issues). Many workers reported that they were not listened to, or that their input was not sought or considered valuable. Anecdotally, many of the injured workers participating in this survey wanted to talk for much longer than the interview time we had proposed, expressing their desire to be heard. Workers often linked workplace communication deficiencies to preventable deficiencies in safety practices, safety climate, and RTW practices. Research supports the importance of employer/worker dialog to foster safety climate and safer workplaces,³² as well as active and strategic RTW communication as an effective practice to foster early and sustained RTW.⁵⁹ Workers also linked workplace communication deficiencies to a general lack of respect, aura of distrust, and/or being treated by management as less than human. This phenomenon has been described as the “discourse of abuse,” emanating from the prevalent underlying assumption that injured workers may be taking advantage of the system.³⁷ This assumption persists despite overwhelming evidence of systematic shifting of the economic burden of work-related injury/illness away from the WC system and employers onto other health/disability insurance, the social safety net, and workers themselves.⁴ Although most respondents thought workplace improvement was needed, workers—and injured workers in particular—have limited opportunity to provide input on workplace changes that could promote their wellbeing.^{37,60} A RAND study found that multiple factors, including approaches to dispute resolution, the complex and adversarial nature of WC (which can leave workers unable to navigate the WC system without attorney representation), and a narrow focus on compliance, can impede communication between workers, employers, and health care providers and often prevent stakeholders from focusing on worker-centered outcomes.⁵⁸

Nearly a third of respondents reported that no change was needed to their workplace. Higher job satisfaction was strongly associated with reporting that no workplace change was needed. The vast majority (84.2%) of respondents in our sample reported being somewhat to very satisfied with their job. This was also reflected in many positive narrative comments, remarking on particular themes (positive workplace factors) as being both important and present in their workplace. In other words, many workers responded to the request for suggested improvements by giving advice for improving other workplaces based on their own positive experience, rather than making a suggestion for improvement of their own workplace. A notable characteristic of our sample, which may or may not be related, was the high prevalence of union membership (42.3%)—more than double the estimated 19.8% of Washington State employed workers who were union members in 2018, and more than quadruple the estimated 10.5% for the U.S. overall.⁶¹ In a construction industry study, union membership was found to be associated with better worker-reported safety climate.⁶² The high level of union membership may also indicate relatively low job precarity among this sample. In another recent study using data from the same worker survey, we found that disabled workers in nonstandard and precarious jobs reported a higher prevalence of challenges—including poor health, financial strain, poor sleep, and limited job accommodations after workforce reintegration—compared to their counterparts with full-time, permanent, and less precarious jobs. Additionally, both nonstandard and precarious jobs were associated with low expectations for sustained RTW.⁶³ There were no clear patterns in workplace suggestions that emerged relative to current job precarity.

4.1 Strengths and limitations

The primary strength of this study is that it presents workplace improvements from the standpoint of the worker.³⁷ Many studies, including most of our own related studies, focus on more easily available administrative outcomes (e.g., reinjury via WC claim filing, and work disability via duration of compensated time loss or administrative wage files). Administrative outcomes are generally framed from the standpoint of impact on WC system and employer costs, though they may also be salient outcomes for workers. Even when fielding worker surveys, the topics covered by survey instruments and closed-ended questions generally focus on existing frameworks, which may serve to prioritize WC system and employer perspectives over those of workers; workers' primary concerns may lie elsewhere. In this study, we did not use a priori frameworks when coding, but allowed workers' own priorities for workplace improvement and insights into potential levers for change to emerge from the data. The open-ended questions we included, in addition to corroborating the importance of the workplace factors covered by pre-specified survey questions, also enabled the presentation of workers' voices with respect to the workplace factors they considered most important to their wellbeing. Another strength was that the survey was focused on the first year after claim closure—a time period which is high-risk for reinjury and job loss, and which may also determine long-term employment prospects.^{11,18} However, because we interviewed only workers who had RTW at least briefly, our findings do not directly address workplace improvements that might facilitate RTW for workers with permanent impairments who do not RTW at all. Finally, while this study lacked “thick description” of in-depth interviews,⁶⁴ it involved a large population-based sample, allowing for a breadth of responses. Our inclusion of workers with any type and degree of permanent

impairment enhances generalizability to a broad range of injuries and conditions. A notable characteristic of our sample was the high level of union membership. We did not have union membership status for survey non-respondents, so we could not be certain whether response bias was a factor; however, we did not observe notable differences in the many other characteristics used to assess response bias.²² There are several (speculative) mechanisms that might tend to select union members into our sample: (1) if more hazardous types of jobs are more likely to have union representation, union members might more often be injured; (2) union members might feel safer reporting an injury and filing a WC claim; (3) union members might have better access to legal resources, which might facilitate obtaining a PPD award; and (4) union members may be more likely to RTW after a PPD award, which was an eligibility criterion for this survey.

4.2 Conclusions

In this study, workers suggested a number of workplace improvements that could potentially support safe and sustained RTW. Modifiable workplace factors that frequently emerged included (but were not limited to): safety, safety climate, adequate staffing, ergonomics, rest breaks, job strain, predictability and flexibility in work scheduling practices, employer response to injury, social support, communication, and respect. Our findings suggest that policies and interventions targeting these factors at the workplace, WC system, and/or population level may promote safe and sustained RTW, which is essential for worker health and economic stability.

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Data Availability Statement:

The data that support the findings of this study are not available for data-sharing due to privacy and third party restrictions.

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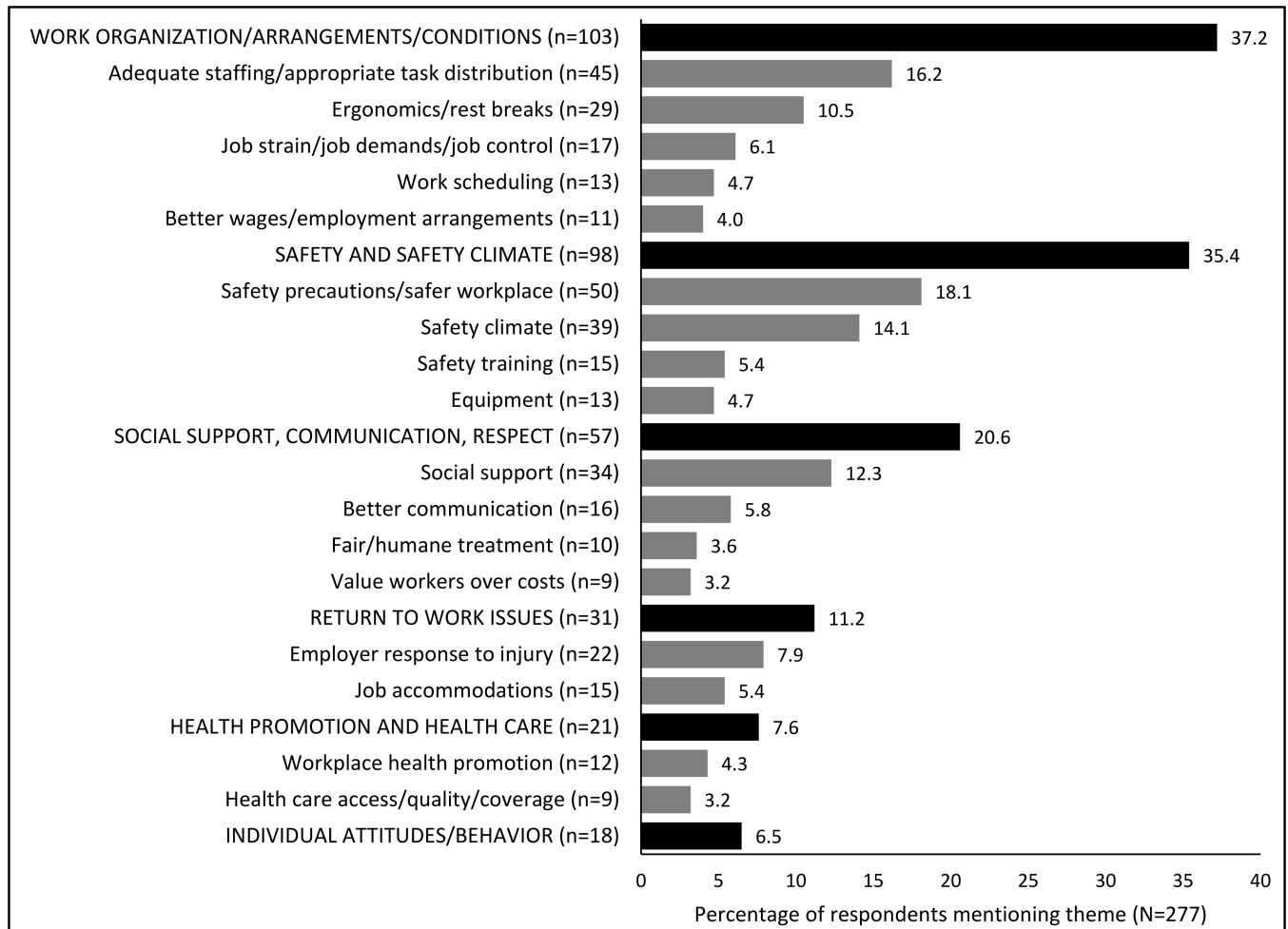


FIGURE 1.

Worker-suggested workplace improvements (N=277). Theme and major theme frequencies for coded open-ended responses to “If you could suggest one change to the structure, environment, or culture of your current/most recent workplace that would help you to continue working or prevent reinjury, what would it be?” Coded themes (sentence case and grey bars) are grouped in descending frequency within their respective major themes (uppercase and black bars). Percentages do not sum to 100%; many responses involved multiple coded themes and themes were not mutually exclusive.

TABLE I

Worker, injury, and claim characteristics for Washington State workers surveyed about a year after workers' compensation claim closure with a permanent partial disability (PPD) award (N=581)

Characteristic	Data Source	N (%)
Gender	Admin	
Men		389 (67.0%)
Women		192 (33.0%)
Age when interviewed	Admin	
19–24		13 (2.2%)
25–34		62 (10.7%)
35–44		113 (19.4%)
45–54		160 (27.5%)
55–64		200 (34.4%)
65–73		33 (5.7%)
Educational level	Survey	
Not high school graduate/no GED		23 (4.0%)
High school graduate/GED		144 (24.9%)
Some college		297 (51.3%)
College graduate		115 (19.9%)
Pre-tax earnings during past year	Survey	
< 20,000 USD		74 (13.2%)
20,000 to < 40,000 USD		124 (22.2%)
40,000 to < 60,000 USD		148 (26.5%)
60,000 to < 80,000 USD		88 (15.7%)
80,000+ USD		125 (22.4%)
Race/ethnicity	Survey	
White/Caucasian		468 (80.6%)
Black/African American		20 (3.4%)
Asian		14 (2.4%)
American Indian/Alaska Native		7 (1.2%)
Native Hawaiian/Pacific Islander		9 (1.5%)
Latino		34 (5.9%)
Multiple		20 (3.4%)
Not reported		9 (1.5%)
Nativity	Survey	
Born in U.S.		527 (91.0%)
Born outside U.S.		52 (9.0%)
Union membership when interviewed	Survey	
Yes		245 (42.3%)
No		334 (57.7%)
Primary body part for PPD award	Admin	
Upper extremity		279 (48.0%)

Characteristic	Data Source	N (%)
Lower extremity		176 (30.3%)
Spine		93 (16.0%)
Mental health		6 (1.0%)
Other		27 (4.7%)
WC coverage type	Admin	
State Fund		366 (63.0%)
Self-Insured		215 (37.0%)

Admin, administrative workers' compensation data; GED, General Educational Development certificate; PPD, permanent partial disability; U.S., United States; USD, United States Dollar; WC, workers' compensation.

Note: Due to rounding, column percentages do not always sum to exactly 100%.

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TABLE II

Response option frequencies for open-ended question: If you could suggest one change to the structure, environment, or culture of your current (or most recent) workplace that would help (or would have helped) you to continue working or prevent reinjury, what would it be?

Job satisfaction	N ^a	No change needed		Codable response		Vague/unclear response		Don't know/no suggestions	
		n	Row %	n	Row %	n	Row %	n	Row %
Overall	581	189	32.5	277	47.7	31	5.3	84	14.5
Very satisfied	281	120	42.7	114	40.6	11	3.9	36	12.8
Somewhat satisfied	205	57	27.8	101	49.3	12	5.9	35	17.1
Somewhat dissatisfied	57	8	14.0	40	70.2	3	5.3	6	10.5
Very dissatisfied	34	3	8.8	20	58.8	4	11.8	7	20.6

^aJob satisfaction categories sum to N=577 because four respondents responded "don't know" to that question.

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TABLE III

Examples of worker suggestions for workplace improvements, by major theme

Major theme	Worker suggestions
Work organization/arrangements/conditions	<ul style="list-style-type: none"> More appropriate workload Better distribution of tasks Slow the pace a little bit More buddy system/non-solo working Add more people; increase staffing Less overtime, which increases risk of injury Better fill-in help when injured or ill Better management so that we can retain people and are not so short-handed all the time More flexibility in work hours to be able to go to the gym, health care appointments and self care Offer more set schedules (unable to plan for sleep or make life plans) Take the time to teach people so they can master a skill before learning a new one Job rotation and cross training on different jobs to diversify the work Having more ergonomic desks and furniture Provide rotating positions instead of having employees stand in one spot all day Add resting opportunities and resting work activities into schedule Switch salary from commission to hourly
Safety and safety climate	<ul style="list-style-type: none"> Listen to the suggestions made by workers (safety hazards, ergonomics) More help lifting heavy things, from coworkers or equipment Replace outdated/unsafe machinery More housekeeping, cleanliness, making sure things (trip hazards) are picked up Increase the messaging around safety An open dialogue about how to do the job safely Enforce safety in the workplace Leadership should follow up on safety compliance measures Proactive management rather than reactive Develop a system of accountability in safety and in work practices Make safety classes ongoing; coach safe body movements More safety meetings and overall focus on safety in the workplace in general Add safe work training for specific departments because it is too general overall
Social support, communication, respect	<ul style="list-style-type: none"> Change the culture so people work together towards common goals and helping each other Promote a relational experience where there's more time to be with coworkers Better teamwork and better communication Improve the interpersonal skills of direct supervisors Better communication between employer and employee There should not be oppression or intimidation in the culture Forget the bottom line, understand people and treat employees better
Return-to-work issues	<ul style="list-style-type: none"> Encourage workers to come back when healthy, rather than trying to rush it Additional physical accommodations for people with disabilities; offer more light duty More manageable work hours and flexibility during recovery Provide more accessible parking to injured employees Provide more information about options for injured employees Train managers to deal appropriately with injured employees (empathy, support, legal issues) Companies need to become educated about the workers' compensation agency and why it exists
Health promotion and health care	<ul style="list-style-type: none"> More voluntary participation in health and fitness programs at work Encouragement and incentives for exercise and physical rehabilitation (e.g., gym memberships) Education and communication on health and wellness In-house occupational health services Insurance coverage for: regular check-ups, therapeutic massage, physical therapy, mental health