

## Disability Management Training for Supervisors: A Pilot Intervention Program

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*Proactive disability management practices among employers have been associated with reduced frequency and duration of disability. Supervisors have a critical role in disability prevention. However, few studies have evaluated training efforts to modify supervisor responses in order to improve disability outcomes. In this study, 108 supervisors representing seven employers were provided a 1.5-h training session to reinforce a proactive and supportive response to work-related musculoskeletal symptoms and injuries among employees. Pre- and post training results showed improvements in supervisor confidence to investigate and modify job factors contributing to injury, to get medical advice, and to answer employees' questions related to injury and treatment ( $p < .05$ ). More supervisors reported decreases (38.5%) than increases (9.6%) in lost work time within their departments. These data provide evidence that this approach may improve disability outcomes of work-related musculoskeletal disorders. Controlled trials with disability outcome data are needed to confirm these results.*

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**KEY WORDS:** work-related injuries; musculoskeletal; disability management; employer response; supervisor training; employment; occupational diseases.

### INTRODUCTION

High medical costs and prolonged disability associated with work injuries have led to a growing interest among employers in improving disability management practices (1–5). The cost of work injuries has been estimated to be \$171 billion annually (6). Lost work time and workers' compensation costs vary substantially among workers with similar injuries (7,8), and companies operating within the same regions and industries have reported 10-fold differences in the rates of workers' compensation disability (9). These disparities suggest that nonmedical factors may contribute to disability among workers with occupational injuries and illnesses.

Work and organizational factors may influence the resumption of normal work following an injury. Among work injuries with lost time, approximately half are low-back sprains

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or other soft-tissue injuries (10). Length of disability associated with these injuries varies substantially, with 5–10% of these cases experiencing more than a 1-year absence from work (8,11,12). Workplace factors shown to affect disability rates for acute, occupational low-back pain include company size, physical work demands, job tenure, job satisfaction, availability of modified duty, coworker conflicts, and occupational stress (13–20). These data suggest that achieving a successful and sustainable return-to-work after an occupational injury may depend upon a number of workplace issues, including ergonomic exposures, managerial support, and work characteristics.

Although many factors influence occupational disability, workplace factors may be more easily modified than either individual or medical factors. Despite evidence that employers with proactive disability management practices experience lower disability rates (21), there have been few attempts to develop and evaluate specific interventions designed to alter employers' responses to injury. A survey of 220 Michigan employers by Habeck *et al.* (22) found that safety diligence, safety training, and proactive return-to-work programs were associated with fewer lost workday cases, fewer workers' compensation wage-loss claims, and fewer total lost workdays. Other studies have corroborated the value of disability management programs (23,24), but the majority of studies have relied on reports provided by management. Less is known about beneficial disability management practices from the perspective of workers, and whether these workplace factors can be altered through intervention. In particular, the immediate supervisor may be a key individual to influence the course of disability among injured workers (2).

Supervisors are involved in the return-to-work process by shaping workers' perceptions of employer support and by acting as a gatekeeper for needed accommodations. A supervisor can provide modified work, interpret corporate policies, facilitate access to corporate and medical resources, monitor the worker's health and function, and communicate a positive message of concern and support (2). A nationwide survey of 250 workers experiencing the recent onset of a disabling condition listed "responsiveness of the supervisor" as a major determinant in their decision to return to work (25). In this sample, workers with longer absences were more likely to report that their supervisor had little interest in their return to work and were inflexible toward accommodation (25). Supervisors may limit or censor their interactions with injured workers after the filing of a claim because they believe their involvement may interfere with an exclusively medical and/or legal process. Negative employer responses, and lack of employer contact after disability has occurred, have been cited by several authors as important correlates of prolonged disability (1,5). Other studies have shown the importance of supervisor support on worker well-being (26), to buffer workplace stress (27), and to improve worker performance (28).

Two previous attempts to modify disability management practices among supervisors have been reported in the literature. In 1980, the American Biltrite Company (400 workers) instituted a sensitivity training program for management that focused on early reporting of injuries, positive acceptance and empathy for injured workers, and providing modified duty work. The program resulted in a 50% reduction in claims with lost work time and a 10-fold decrease in workers' compensation costs for low-back injuries (29,30). Another study (31) provided hospital managers with training that emphasized frequent communications with injured employees (every 10 days), communicating a positive message ("Your job is waiting for you"), and providing modified duty work assignments. This program resulted in a five-fold reduction in low-back claims exceeding 125 days lost work time. However, supervisor

training in disability management in each of these studies was one of several simultaneous interventions (e.g., improving coordination of medical care or changing corporate policies) to improve workplace safety and health; thus, the specific effects of the supervisor training component could not be isolated.

In summary, there is evidence that supervisor behavior may influence workers' absences after work-related injuries and their efforts to return to work. Supervisor training in disability management practices may improve disability outcomes among injured workers. In this study, we present the outcomes of a supervisor training program in disability management that was conducted as part of a pilot program in the State of New Hampshire. The overall goal of the program was to enhance communication among physicians, employers, claims adjusters, and injured workers to improve occupational health and safety. The supervisor training component was intended to reduce disability by conducting a brief, management-supported supervisor training program that facilitates a proactive, supportive, and knowledgeable response to occupational injuries and symptoms among workers.

## METHOD

### Participants

Seven employers in New England, representing a total of 2200 workers, volunteered to participate in a regional effort to improve occupational health and enhance communication among area employers, employees, and health care providers. Participating industries ranged from manufacturing (engineered fabrics; electrical wire, cable, and insulation products; automotive parts; lighting equipment) to human services (retirement and nursing home residential care). One hundred eight supervisors (74 male, 30 female, 4 unknown) from the seven companies volunteered to participate in a single 1.5-h disability management training session that was supported by senior management and publicized by their respective Health and Safety departments. Employment tenure of supervisors varied from just hired to 30 years with a median of 5 years ( $M = 7.6$ ,  $SD = 7.9$ ). Participating supervisors represented approximately 90% of the total pool of supervisors eligible to participate. At least 20 supervisors participated from each of the three largest employers. No information was available on nonparticipating supervisors.

### Procedure

Eighteen supervisor training sessions, with a median training group size of six, were offered on-site at seven locations to accommodate different shifts and work schedules. Upon arrival, supervisors were asked to complete a 13 question pretraining survey. Questions concerned levels of preparedness to address particular health and injury issues among workers (11 items), whether workers were likely to follow supervisor advice (1 item), and whether supervisors felt supported by senior management in addressing employee health concerns (1 item). Respondents were asked to grade their responses on a 5-point Likert scale representing degrees of certainty, preparedness, or confidence (e.g., "1" (very unprepared), "2" (somewhat unprepared), "3" (unsure), "4" (somewhat prepared), or "5" (very prepared)). The authors compiled pretest items based on the most common concerns raised in employee

and management focus groups organized to identify problems associated with responding to worker injuries. Sample items included, "How prepared are you to find alternate duty for an injured worker?" and "How confident are you that you can do something to solve the problem?"

The training sessions were led by an occupational health nurse practitioner. The training format was interactive and participatory in a style typical of management-level skills training programs. The goal of the training was to promote a supportive approach to workers with work-related discomfort, facilitate communication, encourage reporting of injury or health concerns among workers, and implement accommodations whenever possible. The use of early empathic intervention was designed to prevent disability and potentially the need for medical care. The instructor also reviewed accident investigation and simple job site analysis. After introduction of each issue, specific examples were provided with recommendations for supervisory action. When appropriate, the trainer pointed out site-specific practices or resources (e.g., corporate procedures for documenting injuries or finding available modified duty positions). Several hand-outs and sample forms were presented as tools for supervisors to use at the time of a worker injury. They emphasized that workers may feel blamed, discouraged, or penalized after a work injury in the absence of adequate supervisory intervention; these perceptions may lead to a prolonged absence from work. Specific recommendations for supervisor intervention included meeting privately with injured workers, validating health concerns, using supportive language, and making recommendations for seeking additional resources or medical care.

One month after the training seminar, investigators asked supervisors to complete a follow-up survey that repeated nine items from the pretraining survey and added nine items that tested supervisors' retention of salient topics from the training (e.g., "You should ask only yes/no questions of injured workers (true/false)"). Supervisors were also asked to rate the overall helpfulness of the training on a 5-point Likert scale from 1 (*not helpful at all*) to 5 (*very helpful*).

One year after the training seminar, the investigators asked supervisors to complete an additional follow-up survey. Supervisors were asked to recall aspects of the training program that they found helpful to address workers' concerns. For each of 12 topic areas, supervisors stated whether their skills had increased, decreased, or stayed the same as a result of the training. In addition, the 1-year survey asked supervisors to estimate the number of injuries reported to them monthly and over the past year. All aspects of intervention and assessment were reviewed and approved by the Institutional Review Board for Exeter Hospital, Exeter, New Hampshire.

## RESULTS

Prior to the training, supervisors reported a generally high level of confidence related to their interactions with injured workers. The composite mean of eight confidence ratings was 4.02 (SD = 0.49) on a scale from 1 to 5. Supervisors felt most confident of their ability to investigate job factors and find alternate duty. They were least confident in their ability to follow-up with employees. Ninety percent of supervisors reported having adequate time to discuss problems with injured workers at least "most of the time," but only 65% felt at least "somewhat certain" that workers would follow their advice. Thirty-seven percent were "very confident" that they could find additional support if needed to help them deal with

**Table I.** Pre- and Posttraining Confidence Ratings (1–5) of Supervisors ( $N = 46$ )

Item	(One month)						
	Pretraining results		Posttraining results		Paired samples <i>t</i> -test		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Get medical advice	4.13	0.81	4.37	0.57	2.12	45	.040
Investigate job factors	4.13	0.69	4.47	0.62	3.16	45	.003
Modify job factors	3.96	0.56	4.24	0.60	2.66	45	.011
Solve the problem	3.96	0.63	4.24	0.71	2.46	45	.018
Deal with HR issues	4.04	0.63	4.30	0.70	2.60	45	.013
Find alternate duty	4.15	0.82	4.37	0.80	<i>1.70</i>	45	<i>.096</i>
Answer employee's questions	4.02	0.49	4.22	0.63	2.03	45	.048
Follow-up with employee	4.41	0.58	4.54	0.55	<i>1.29</i>	45	<i>.204</i>
Average confidence rating	4.10	0.37	4.34	0.46	4.43	45	<.001

Note: Ratings given in italics showed no statistically significant improvement.

a worker injury. There were no statistically significant differences in baseline supervisor ratings by gender or by job tenure ( $p > .05$ ). Forty-six of the original 108 supervisors (42%) completed the 1-month follow-up survey.

At 1-month follow-up (see Table I), supervisors reported improved confidence to handle work injury related concerns for six of the eight dimensions ( $p < .05$ ). Supervisors were more confident in seeking medical advice, investigating and modifying job factors, solving problems, dealing with human resources issues, and answering employees' questions. These improvements occurred despite high initial ratings for most items at the preintervention assessment. The upgrading of the mean ratings was modest, generally on the order of 0.5 SD. The mean composite confidence rating improved from 4.1 ( $SD = 0.4$ ) to 4.3 ( $SD = 0.5$ ); paired  $t(45) = 4.43$ ,  $p < .001$ . Two ratings showed no statistically significant improvement: "finding alternate duty" and "following up with the employee." Postintervention improvements in the composite confidence rating did not significantly vary by either gender, company, or job tenure ( $p > .05$ ).

Fifty-three supervisors (49%) completed the 1-year follow-up questionnaire. They reported a mean of 1.15 reports of work-related musculoskeletal discomfort among their employees in an average month ( $SD = 1.1$ , range = 0–4). Sixty-nine percent reported remembering specific details of the training, while the remaining 31% could recall few details. Supervisors reported that as a result of the training, lost time due to work injuries among their employees either decreased (38.5%), increased (9.6%), stayed the same (28.8%) or they were "not sure" (23.1%). When asked to identify the three most important factors in managing disability issues from a list of eight, supervisors rated three items describing employee support the highest: "ask how the employee is feeling" (65%), "express support and respect for the employee" (56%), and "respond to the employee's ideas for solving the problem" (46%). Fewer supervisors included the remaining four factors within the three selected as most important: "investigate the cause of the problem" (43%), "talk about the injury in a private, confidential area" (24%), "avoid confrontation at the time of the injury" (13%), and "get medical care for the employee" (0%).

As a result of the training, supervisors indicated a greater awareness of their role in the disability recovery process (82.4%). Fewer supervisors reported improved communication with physicians (31.4%). Self-improvement in disability management practices over the

past year was rated as either “increased,” “decreased,” “stayed the same,” or “don’t know.” Based on percentages of those who reported increased skills, the greatest improvement was in “investigating contributing job factors” (51.9% noted improvement). Other improvements were in “making suggestions to reduce employee discomfort” (45.3%), “obtaining management support” (36.5%), “encouraging workers to report their injuries as early as possible” (32.1%), “finding effective medical care and advice” (30.2%), and “finding alternate duty” (25.5%). Again, there was no evidence of significant differences between respondents and nonrespondents in job tenure, gender, or baseline confidence levels.

No evidence of a systematic response bias was found for the baseline or the 1-year follow-up survey, when baseline ratings of responders and nonresponders were compared. These analyses showed no statistically significant differences ( $p > .05$ ) in job tenure, gender, or baseline supervisor confidence ratings between responders and nonresponders for either survey.

## DISCUSSION

This pilot program demonstrated that a brief training intervention, when accompanied by management support, could achieve demonstrable impacts on supervisor responses to work-related musculoskeletal problems. One month after the training, supervisors reported modest improvements in their abilities to identify and resolve job factors contributing to disability, deal with human resources issues, and answer employees’ questions. These perceived areas of improvement due to the training persisted 1 year later despite the absence of any interval training or specific reinforcement. The importance of several key positive responses to employee concerns that were emphasized in the training were strongly endorsed by participants. In the 1-year post training assessment of supervisors, communication factors (e.g., “ask how the employee is feeling”) were identified as most important in their efforts to reduce disability among workers. Thus, it appears that this program led to small, but sustained, changes in supervisor attitudes.

The responses of supervisors suggested that improving empathic work site intervention was considered a more critical change than providing employees better access to medical care. This was consistent with the goal of the training to enhance supervisors’ ability to respond rapidly to worker complaints of discomfort, and thus minimize the need for medical care. When medical care *was* necessary, the training emphasized the importance of prompt referral. About one-third of supervisors responded that the program had reduced the hours lost due to injuries among workers within their facilities. Eighty-two percent felt that they were better able to offer appropriate initial management without referring all discomfort for medical treatment. These supervisor-reported improvements in disability outcomes are consistent with the more objective findings from administrative data sources reported by others (30–32).

Although the results are encouraging, there are a number of factors that limit the strength of the conclusions. The intervention described here took place in the context of a larger program to enhance the quality of occupational medical care, physician–workplace interaction, safety practices, and workplace ergonomics. Thus, some of these components may have led to a positive halo effect, or even directly impacted the target behaviors. Low participation rates in the supervisor follow-up surveys may have led to a selection bias, but data available on nonparticipating results provided no evidence of a systematic bias.

Also, by using data on changes in supervisor opinions rather than factual responses in the follow-up questionnaires, there is the possibility that improvements reflect a nonspecific trend toward improvement that may be independent of the intervention.

Strengths of this investigation include its application in a real-life community setting across a range of industries, and using resources that are readily available at low cost in most communities and workplace settings. There was no evidence that the program was more or less effective at any one location. Like any management training program, the topic needs to be salient to both supervisors and senior management. The program needs management commitment and support. Financial considerations may equal concerns about employee health and well-being. Supervisors need to be willing to participate in training and data collection. Behavioral change usually requires reinforcement. Including disability management practices as a part of regular supervisor performance evaluations is one of several methods that may buttress enduring changes in supervisor responses to worker reports of discomfort.

Based on existing theories of work, stress, and health, a number of mechanisms may explain a supervisor's ability to impact the disability outcomes of work injuries. A supervisor's efforts to provide workplace accommodations and engage injured workers in cooperative problem solving may temporarily reduce job demands and improve perceived job control. According to the Karasek (32) psychological demand/decision latitude model of job strain, this would lead to reduced risk for psychological strain and physical illness, and hence a safer return to work. At the time of injury, a supervisor may also be a significant source of social support. The expanded three-dimensional model by Karasek and Theorell (33) suggests that social support could buffer the stress of experiencing temporary functional limitations, help facilitate active coping strategies, and accelerate a return to productive behavior (34).

Controlled trials with measurement of changes in absenteeism, disability rates, and other measures of human productivity are needed to overcome the threats to internal validity and improve generalizability of results. Future studies of similar interventions could address some of the methodological limitations by randomization of intervention groups, prospective data collection from employees both pre- and post intervention with a system for rapid case identification, more extensive efforts to capture all training participants in follow-up surveys, and collection of disability data. Future studies might also seek to identify specific supervisor attitudes or skills that are important when an injury or report of symptoms occurs. These may include leadership and communication style, decision making, and attitudes about health, disability, and productivity. Multisite investigations will probably continue to be necessary; significant workplace changes, which can affect outcomes independent of an intervention, commonly occur during a period of investigation.

Nonmedical personnel play a critical role in occupational health outcomes. Besides supervisors, other associated nonmedical personnel include senior management, employee educators, coworkers, human resources representatives, case managers, and labor union officials; however, the supervisor may have the best overall combination of familiarity, knowledge, and authority to respond effectively to workplace injuries and discomfort. In this study, a very modest intervention (a single 1.5-h training) was effective in modifying supervisor attitudes. More extensive interventions that employ a "systems approach" to integrate training with daily operations, corporate culture, and a needs assessment are likely to produce larger and more sustained benefits.

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