

# Interactive Training Improves Workplace Climate, Knowledge, and Support Towards Domestic Violence

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**Background** As Intimate Partner Violence (IPV) affects the workplace, a supportive workplace climate is important. The study evaluated the effectiveness of an “IPV and the Workplace” training on workplace climate towards IPV.

**Methods** IPV training was provided to 14 intervention counties and 13 control counties (receiving training 6 months delayed). Measures included workplace climate surveys, IPV knowledge test, and workplace observations.

**Results** (i) Training significantly improved supervisor knowledge on IPV and received positive evaluations, (ii) training improved workplace climate towards IPV significantly which was maintained over time, and (iii) after the training, supervisors provided more IPV information to employees and more IPV postings were available in the workplace.

**Conclusions** The study provides evidence to support on-site interactive, computer based training as a means for improved workplace safety. *IPV and the Workplace* training effectively increased knowledge and positively changed workplace climate. Am. J. Ind. Med. 59:538–548, 2016. © 2016 Wiley Periodicals, Inc.

**KEY WORDS:** domestic violence; intimate partner violence; workplace climate; employment protection law; employment leave policy; computer based training

## INTRODUCTION

Intimate partner violence (IPV), also known as Domestic Violence (DV) may include actual physical or sexual violence, threats of violence, and psychological abuse [Saltzman et al., 2002; Centers For Disease Control and Prevention, 2003]. About 30% of women are affected worldwide and over one-third (35.6%) of women in the US experience IPV in their lifetime [Black et al., 2011; World

Health Organization, 2013]. IPV often results in long-term negative health, economic and social consequences for the survivor and their family, including effects on the survivor's workplace and employment security [Swanberg et al., 2006; Warshaw et al., 2009; Tolman, 2011; LaVan et al., 2012]. This study addresses priorities outlined by the National Institute for Occupational Safety and Health (NIOSH) Workplace Violence Prevention Research [NIOSH, 2006]. Specifically, our study focuses on workplace violence category Type IV, Personal Relationships, when the perpetrator does not have a relationship with the workplace, but has a personal relationship with an employee who is the intended victim, most often an intimate or ex-intimate partner.

## Workplace Impact of IPV

Research has demonstrated IPV spillover to the workplace, affecting productivity and safety [Centers For

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Disease Control and Prevention, 2003; Plichta, 2004; Arias and Corso, 2005; Swanberg and Logan, 2005; Swanberg et al., 2006; CAEPV-Corporate Alliance To End Partner Violence, 2007; Reeves and O'Leary-Kelly, 2007; Rivara et al., 2007; Crowne et al., 2011; Tolman, 2011; Adams et al., 2012; LaVan et al., 2012; Swanberg et al., 2012; Mankowski et al., 2013; World Health Organization, 2013; Laharnar et al., 2015]. Work related consequences of IPV may include: (i) abuser using work-interference tactics (harassing co-workers, affecting employee's ability to get to work, stay at work), (ii) absenteeism due to illness, injury, safety challenges and/or mental health, (iii) reduced job performance and productivity due to employee's difficulty concentrating, safety concerns and absence, (iv) increased workplace costs due to loss of productivity and increased insurance costs (average annual workplace costs for an IPV survivor: \$2,400 for absenteeism, \$4,300 for workplace distraction, \$80 for tardiness; [Reeves and O'Leary-Kelly, 2007], and (v) homicide in the workplace, over-one third (38%) of all female murders in the workplace (1982–2011) were committed by intimate or ex-intimate partners [U.S. Department of Labor, 2013].

### **Importance of Positive Workplace Climate Towards Prevention and Response to IPV**

Given the possible impact of IPV on the workplace, affecting the employee and employer, it is important for the workplace to engage in prevention and response to IPV and create a safe, supportive and positive workplace climate for survivors. There are several aspects to a supportive workplace climate including available training and policies; communication and confidentiality; information and resources; workplace flexibility that allows employees who experience IPV to access safety resources; and sanction employees who are perpetrators of IPV in the workplace or use workplace resources (e.g., email, phone, company car to stalk/harass partner). Current research has shown that there is a positive relationship between workplace climate and organizational performance [Schneider et al., 2011; Zohar and Polacheck, 2014]. Safety climate for example has proven to be a valid predictor for safety performance and objective injuries [Zohar and Polacheck, 2014]. However, a major barrier for employers to address IPV at their workplace is the lack of IPV disclosure by employees and the resulting perception that IPV does not have an impact at their business/organizations and does not need to be addressed or it is not the responsibility of the workplace to prevent and/or respond to IPV [CAEPV-Corporate Alliance To End Partner Violence, 2007]. For example, only 15% of US workplaces have a workplace IPV policy and only 4% have training on IPV [U.S. Department of

Labor, 2006]. Results of a recent qualitative study within Oregon workplaces on IPV has shown that supervisors of employees who experience IPV do show support for survivors, but also react negatively including giving negative performance evaluations and lack of confidentiality when an employee discloses IPV. Survivors of IPV revealed that they try to hide their problems due to fear of job loss and other negative workplace consequences [Laharnar et al., 2015]. Effective workplace safety programs and support may lead to productive employees that are able to more successfully manage work and non-work, benefiting the employee and employer [Jackson and Garvin, 2003; Swanberg and Logan, 2005; Ryan and Kossek, 2008; Kossek et al., 2011; Perrin et al., 2011].

### **Federal and State Response to IPV and the Workplace**

Currently, there is no federal employment protection law for IPV, limiting guidance and resources for employers. The federal "Violence Against Women Act (VAWA, 1994)" raised public awareness but did not address employment protection. Other bills that include employment protection (e.g., "The Battered Women's Employment Protection Act") have been introduced, but to date none of them have passed [Piotrowski-Govreau, 2007; Hayes, 2009; Jacobs and Raghu, 2010; Runge, 2010; Schuman, 2011; GovTrack.us, 2014]. Several US States individually developed employment protection policies and laws. While 49 states have a workplace anti-discrimination law for crime victims, only four states (California, Connecticut, Illinois, Kansas) have one specifically for IPV survivors. Further, 13 states have IPV workplace awareness and safety policies, and three (New York, Illinois, Oklahoma) require IPV education and training. While all 50 states have at least one policy providing leave for general crime victims, only 15 US states and the District of Columbia provide protected leave specifically to IPV survivors [for more details on the laws see Swanberg et al., 2012; Laharnar et al., 2013; Legal Momentum, 2014]. State level differences in leave requirements and coverage make law implementation a challenge, especially for national and multi-national companies.

### **Oregon's Employment Protection Law for Sexual Assault, IPV, and Stalking**

Although US states are developing and implementing employment protection laws for survivors of IPV, few evaluations of the implementation and usage of the existing state laws exists. Our study addresses Oregon's IPV leave law passed in 2007 ("Domestic Violence, Harassment, Sexual Assault or Stalking Protections," Oregon Revised Statute §659A.270). It provides employees who are

survivors of, or parents/guardians of a minor child who is a survivor of, IPV, sexual assault, criminal harassment or stalking with reasonable, unpaid work leave. The employee may seek medical treatment, counseling, legal assistance, attend court hearings, or relocate without fear of loss of employment. Employees are eligible if working for an employer with five or more employees [Oregon Laws, 2007; Hayes, 2009]. Findings from qualitative interviews with Oregon employees (including survivors of IPV) and supervisors indicated that few were aware of and/or had training on the existing leave law [Laharnar et al., 2015]. Importantly, in 2014, an amendment to Oregon's IPV leave law was implemented, requiring postings of the law in the workplace and also eliminating size of organization in eligibility restrictions.

## Purpose

Given the lack of existing evaluations of job protection State leave laws for IPV, we partnered with county based governments in the State of Oregon to develop and evaluate the effectiveness of the "Intimate Partner Violence (IPV) and the Workplace" training on the workplace climate towards IPV, including detailed information on the Oregon leave law.

## METHODS

### Design, Recruitment, and Participation

The study, a two group (intervention vs. delayed control) randomized design, was conducted with Oregon counties with pre- and post-intervention (3-, 6-, and 12-month) assessments of utilization of the protected leave law and the workplace climate towards IPV. All 36 Oregon county governments were invited to participate in the study. The study team members met with leadership in each county to describe and provide details on the study and training to the decision makers including the counties' judges, administrator(s) and/or human resources (HR) personnel. Twenty-seven (75%) counties agreed to participate. Counties were randomly assigned to the intervention (14 counties) or delayed control (13 counties) conditions stratified on size of the county. Intervention and delayed control county supervisors received training on the federal Family Medical Leave Act (FMLA) and a brochure on Oregon's job protection IPV leave law. The FMLA training was provided to all counties to demonstrate the similarities and differences between the State's protective leave policy for survivors of sexual assault, IPV and stalking and the existing FMLA policies, as we noted in discussions with county leaders that there was confusion between the policies. The intervention group supervisors also received the "IPV and the Workplace Training." The delayed control group supervisors received

the "IPV and the Workplace Training" after the 6-month follow-up assessment. The counties' HR/Personnel Departments such as health, social service, administrative and maintenance were requested to select and recruit all employees who were in a supervisory or managerial position by distributing a training advertisement flyer (through postings, pay envelope, and/or email). Since the study aimed to improve the climate towards intimate partner violence in the workplace not just at an individual supervisor level but at the organization level as well, at each time point all current supervisors in the county were invited to complete the study measures regardless of whether they had received the training or participated in the earlier rounds of data collection (e.g., baseline, 3 and 6 months). Therefore, individual supervisors were not followed over time, the organization was followed over time. In eight counties (31%) the training was mandatory, however, in most counties it was optional for supervisors but encouraged by the county HR/Personnel Department. Before starting the computer training or online follow-up surveys, participants received a detailed study information form and were given the choice to participate in the study by providing their demographic information or opting out of the study while still receiving the training by pressing the a button. Data were collected only from participants who consented to participate in the research. A lottery-style incentive for participating supervisors (\$25 or \$49 visa gift card, limited by the size of an incentive that could be accepted by Oregon state guideline) was offered and 20 counties (70%) accepted.

### Intimate Partner Violence and the Workplace Training

The "IPV and the Workplace" training was presented in cTRAIN, a computer-based training format [Anger et al., 2001]. The training used a combination of standard knowledge dissemination with behavior change training [Taylor et al., 2005] delivered by a modern form of programmed instruction [Anger et al., 2001; Eckerman et al., 2002; Rohlman et al., 2004]. It incorporates behavioral training principles [Edgar and Sulzbacher, 1992] including self-pacing and interactivity (e.g., pre- and post-training questions, quiz questions, scenarios, screen-to-screen navigation). Previous trainings performed with cTRAIN produced positive changes in knowledge and achieved large effect sizes [Glass et al., 2010; Hammer et al., 2011; Laharnar et al., 2015]. The "IPV and the Workplace" training was developed and pilot tested based on findings from a study with 300 survivors and 200 perpetrators of IPV [Bloom et al., 2009; Glass et al., 2010]. Table I outlines the components of the training intervention.

Each information screen displayed pictures or videos and exemplifying scenarios. Additional more detailed

**TABLE I.** IPV and the Workplace Training Components

Topic	Number of screens
Defining IPV in the workplace	9
Survivors' and perpetrators' in the workplace	6
How IPV affects the workplace	10
Positive workplace climate: supervisor support for survivors	19
Oregon's protective leave law	9
Developing an IPV workplace policy	7

information screens (e.g., on leave request and approval process with exemplary forms) were optional. For people with limited reading or computer experience, the training offered a spoken text option on each screen. All participants received a training completion certificate.

## FMLA Training

As noted above, all participating supervisors in both intervention and delayed control counties received the “Family and Medical Leave” (FMLA) training, also presented in cTRAIN, describing in 10 information sections with quiz questions and movies the requirements such as eligibility and qualifying FMLA situations, the role and responsibilities of the supervisor, and information on the approval and tracking process. It also included Oregon’s state version of the family medical leave, the Oregon Family Leave Act (OFLA), and described the differences between the federal FMLA and the state OFLA. More detailed FMLA and OFLA information screens (e.g., on leave request and approval process with exemplary forms) were optional. The FMLA training intervention and its effectiveness is described more completely by Laharnar et al. [2013]. All participants received a training completion certificate.

## Training Procedures

Research teams delivered the computer-based training on-site to the participating counties’ supervisors. Laptops were set up in counties’ conference or training rooms and supervisors were seated in front of them. Supervisors had the option to participate in the research study by first completing demographic questions and a survey on workplace climate towards IPV including questions on their experience of workplace IPV and knowledge of IPV prior to the training. If they declined to participate in the research study, they were able to skip the demographic questions and survey and were routed automatically to the beginning of the training session. Johns Hopkins Medical Institutes and Oregon Health &

Science University Institutional Review Boards (IRBs) approved the study protocols.

## Measures

### ***Characteristics of county government agencies and supervisor demographics***

The county characteristics included total number of employees at each county government, and number and gender of participating supervisors. An HR staff member completed these questions. Additionally, supervisor demographics (e.g., supervisor age, race/ethnicity, education, time in current position, and employment status), whether the supervisor had provided IPV information to an employee in the past 3 years and how often employees at the supervisor’s workplace have experienced IPV encounters at the county workplace in the past year and past five years were collected of supervisors who consented to participate in the study.

### ***Workplace climate towards domestic violence (WCTDV)***

The main outcome for the study is workplace climate towards domestic violence (WCTDV). A 21-item measure was developed through interviews with survivors of IPV in a previous study [Bloom et al., 2009]. It includes five domains: Training & Policies (five items), Communication & Confidentiality (three items), Information & Resources (six items), Posting Information (two items), and Work Flexibility & Positive Response to IPV (five items). The participant answered “yes” or “no” to each item. The score on WCTDV is the number of “yes” responses, with a possible maximum score of 21. The exact wording of the items can be found in Appendix A.

## ***Knowledge measure***

The training intervention started and ended with a pre-(baseline) and post-training knowledge test with 10 multiple choice (four choices) questions on IPV, workplace consequences, and State leave law. Supervisors received feedback about how they scored after completing the training.

In addition to the measures presented above, trained research assistants completed workplace observational assessments of postings and resources related to IPV, and specifically to the protected leave for IPV, in public and private work locations such as break-rooms, kitchens, and copy rooms at 3 time points (3 month prior to the intervention and 6 and 12 month after intervention). The structured workplace assessments consisted of a workplace observation with a checklist, photographs and analytic field notes, and a short structured interview with the County’s

HR person on workplace IPV policies, contact with IPV service providers, IPV workplace trainings, and existing IPV resource information at the workplace including the protected leave law. To ensure data reliability, the checklist was developed with pre-defined answer categories, which were piloted, discussed, re-assessed and modified during practice sessions. Additionally, digital picture documentation ensured reliability of checklist answers. After each workplace assessment, checklist and pictures were compared and reviewed by team members.

## Statistical Analyses

We used generalized estimating equations (GEE) to test for change over time for knowledge and workplace climate towards domestic violence (WCTDV) since randomization is at the level of the organization. Observations were nested within organizations and the working correlation matrix was specified as exchangeable. Changes in knowledge were analyzed separately for the intervention and delayed control group. In both groups we examined change from pre-training to post-training; in the intervention group both of these measurements were taken at baseline and in the delayed control group both of these measurements were taken at 6-month. For WCTDV we examined differences in change over time between the intervention and delayed control groups. Time had four levels: baseline, 3-, 6-, and 12-month. Since the total score on WCTDV is a count of the number of items endorsed, the GEE model used a Poisson distribution with a log link function. Prior to conducting the main analyses, differences in demographics between the intervention and delayed control groups at baseline and across time were tested with GEE models.

## RESULTS

### County Characteristics and Supervisor Demographics

The counties randomized to the intervention and delayed control groups are described in Table II. Counties population ranged from 1,426 to 540,410 residents [US Census Bureau, 2012]. Prior to training, 14.8% of the supervisors reported providing IPV leave information to their employees in the years since the leave law was implemented in Oregon Laws, [2007]. Also prior to training, 66.0% of supervisors had not encountered issues related to IPV in their workplace in the past year, 26.2% of supervisors reported encountering IPV-related issues 1 or 2 times in the past year, and 7.8% of supervisors reported encountering IPV-related issues 3 or more times in the past year.

Table III summarizes the characteristics of the supervisor participants at each time point. At baseline the intervention

**TABLE II.** Characteristics of Participating County Government Agencies

	Intervention (N = 14)	Control (N = 13)
Percent female supervisor	59.0%	54.5%
Average number of employees	487	675
Average number of supervisor participants in training across all time points	37	32

and delayed control groups did not differ on education, gender, age, ethnicity, time in current position, and number of hours worked. There were also no differences in these variables across time with the exception of education where fewer supervisors had completed high school at baseline (85.4%) than the other time points (all approximately 90%).

### Training Effect on IPV and Leave Law Knowledge

After taking the “IPV and the Workplace” training, knowledge related to IPV (definition, prevalence, health and workplace consequences, leave law) significantly improved from a mean of 75.7–98.4% correct ( $P < 0.001$ , Cohen’s  $d = 2.18$ ). The results were very similar when the delayed control group completed the “IPV and the Workplace” training (75.8% vs. 98.5%,  $P < 0.001$ , Cohen’s  $d = 2.19$ ). The majority (75.8%) of participants (in both, the intervention and control group) rated the “IPV and the Workplace” training as good or excellent.

### Change in Workplace Climate Towards Domestic Violence (WCTDV)

In the GEE analyses examining change over time, the time by group interaction was significant ( $P < 0.001$ ). At baseline the total mean score across all counties on WCTDV was 10.87 ( $SD = 5.29$ ). Figure 1 presents the scores over time. Post hoc comparisons found that there were no significant differences ( $P = 0.268$ ) between intervention and control groups at baseline; counties were achieving about half of the items (e.g., policies, training) on the WCTDV. At 6 months, right before the delayed control group counties received the intervention, the intervention group had a mean score of 14.53, significantly higher ( $P = 0.002$ ) than the control group score of 12.52. At 12 months after the delayed control group had completed the intervention, the score on WCTDV was similar ( $P = 0.952$ ) in both groups (Intervention = 14.61, Control = 14.66). This same pattern of results was also found at subscale level for *Training & Policies; Communication & Confidentiality; Information & Resources; and Posting*

**TABLE III.** Demographic Characteristics Across Time (Percent)

	<b>Baseline</b>		<b>3-months</b>		<b>6-months</b>		<b>12-months</b>	
	<b>Int</b> <b>(N = 528)</b>	<b>Control</b> <b>(N = 413)</b>	<b>Int</b> <b>(N = 401)</b>	<b>Control</b> <b>(N = 256)</b>	<b>Int</b> <b>(N = 337)</b>	<b>Control</b> <b>(N = 269)</b>	<b>Int</b> <b>(N = 335)</b>	<b>Control</b> <b>(N = 244)</b>
Female	58.0	52.1	56.6	51.6	52.2	55.8	53.4	54.5
Hispanic/Latino	3.0	2.2	2.5	2.0	2.1	3.3	2.7	4.1
Completed HS or above	86.7	83.8	92.3	87.1	92.0	85.9	91.9	86.5
Works full-time	90.2	91.8	91.0	91.0	92.3	93.3	91.9	92.6
Age								
20–30 years	2.1	1.9	0.7	2.0	1.5	3.7	1.2	1.6
31–50 years	49.1	43.1	48.9	44.1	48.4	41.3	44.8	44.3
Over 50	48.9	55.0	50.4	53.9	50.1	55.0	54.0	54.1
Time in position								
0–10 years	55.3	50.4	56.9	56.3	57.9	56.5	52.8	50.8
11–20 years	28.0	28.8	25.2	26.2	25.5	28.3	28.7	28.3
21–30 years	12.7	15.5	14.2	15.2	13.6	11.2	12.8	14.8
31+ years	4.0	5.3	3.7	2.3	3.0	4.1	5.7	6.1

*Information.* For *Work Flexibility & Positive Response to IPV* the pattern of results was similar except that the intervention group endorsed significantly more items than the delayed at 3 months as well as 6 months.

### Providing IPV Leave Information to Employees

At baseline, 15.1% of intervention and 14.1% of delayed control group provided IPV leave information to their employees. At 6-month, 28.5% of the intervention group and 22.3% of the control had provided IPV leave information to their employees. At 12-month, after both groups had received the intervention, 37.3% of the intervention and 33.6% of the control group had provided IPV leave information to their employees. From baseline to 12-months,

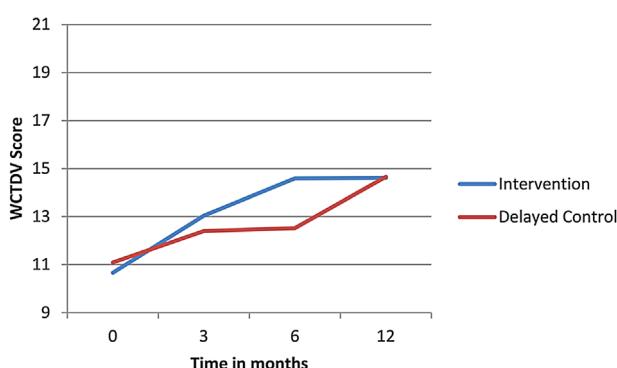
after both groups had received training, the number of supervisors providing IPV leave information increased significantly ( $P < 0.001$  for both groups).

### Impact of Incentives on Workplace Climate Towards DV

We conducted additional analyses, to test if offering incentives for participation in training is a moderator of the effect of the “IPV and the Workplace” training on change in workplace climate towards IPV. In other words, we examined if the training is more effective when incentives are offered than when no incentives are given. The moderator was not significant, therefore we have no evidence that providing incentives makes the training more effective.

### Diffusion of the Intervention Effect Through the County Agency

Next, we explored if the intervention was more effective for those supervisors who completed the training than for those who did not, to assess if the effect of the training on change in workplace climate for IPV was diffused throughout the organization. Using only the counties that received the training, we compared those who self-reported that they took the training (we were not able to verify participation because of anonymity of participation) to those who did not complete the training. At 3-month 66.6%, 6-month 70.3%, and 12-month 72.5% of supervisors had completed the training. GEE models were used to compare

**FIGURE 1.** Change in workplace climate towards domestic violence over 12 months.

the two groups within the intervention counties on the WCTDV scores at 3-, 6-, and 12-month post baseline. The WCTDV scores were significantly higher at all three-time points for those who reported taking the training compared to those who had not taken the training (see Table IV). Furthermore, the difference between baseline and 12-months in WCTDV scores was not significant for those who did not participate in the training. Unfortunately, these analyses do not support spread of the effect of the training to other supervisors.

### Organizational Actions After Completing the Training

Interviews with HR representatives and observations during the observational workplace assessments in each county were conducted at baseline, 6- and 12-months. At 6-month, 28.6% of the intervention and 4.4% of the control counties had additional postings about Oregon's job protected IPV leave law. At 12-month an additional 15.4% of the delayed control had additional postings after receiving the training. Over one-third (35.7%) of the intervention and 23.1% of control county organizations had developed a new IPV policy at 6-month, by 12-months this rose to 64.3% in the intervention counties and 38.5% in the delayed control counties. A similar pattern was seen for seeking additional resource information about IPV. At 6-month, 42.9% of intervention and 30.8% of control county organizations had sought out additional community resource information about IPV and at 12-months this rose to a total of 63.3% in the intervention and 46.2% of the control counties.

### DISCUSSION

The study resulted in several significant findings regarding the effectiveness of the "IPV and the Workplace" training including knowledge increase, positive change in workplace climate towards IPV, and more supervisors providing information about the IPV leave to employees. Importantly, the intervention was equally effective in counties that allowed participants to receive an incentive for participation in the training and those counties that did not.

**TABLE IV.** WCTDV Scores for Supervisors of the Intervention Group Who Did and Did Not Take the Training

	<b>3-months</b>	<b>6-months</b>	<b>12-months</b>
Took training	14.33	15.77	16.09
Did not take training	10.78	11.38	11.39
<i>P</i> = 0.001	<i>P</i> < 0.001	<i>P</i> < 0.001	

### Training Effectiveness: Knowledge Increase and Positive Workplace Climate Change

The "IPV and the Workplace" training intervention was effective at increasing supervisor knowledge and understanding. After taking the training, supervisors' IPV and IPV leave law knowledge significantly improved from a mean of 75.7–98.4% correct. The results were very similar when the delayed control supervisors completed the "IPV and the Workplace" training (75.8% vs. 98.5%). The majority of supervisors (75.8%) rated the training as good or excellent.

The workplace climate survey towards domestic violence (WCTDV) showed that the training intervention positively changed the workplace climate towards IPV. The workplace climate improved significantly and was maintained over time. Baseline climate indicated that on average county agencies were achieving about half of the 21 positive workplace climate items (e.g., training, policies, resources). After receiving the training both groups were achieving about 71% of the positive workplace climate items. The intervention group improved significantly more than the control group from baseline to 6 months. At 12 months the control group who had received a delayed intervention realized similar improvements in climate, and the higher scores of the intervention group were sustained.

The workplace observational assessments also confirmed the positive training effect on workplace climate towards IPV. The intervention counties had a stronger increase in postings related to IPV during the first 6 months (when the control counties had not yet received the training). Additionally, according to the HR staff, intervention counties reported a higher development of IPV policies and a higher level of seeking out additional IPV resources (e.g., contacting local IPV agencies for support with employee issues, contacting state resources for postings, guidance on policies for IPV) than control counties.

The number of supervisors that reported to have provided IPV job protective leave information to their employees doubled from baseline to 12 months. This shows supervisors were increasingly seeing this as part of their role. Further, the positive change in climate towards IPV may have increased employees comfort level with discussing their situation with their supervisor.

Unfortunately, we did not find that the training intervention with supervisors was diffused throughout the county agencies, meaning that only the supervisors who took the training were positively affected. This highlights the importance of widespread training. Training of all supervisors could have an even greater impact on climate towards IPV in the workplace. Our findings suggest that there is still room for improvement as counties were achieving 71% of the positive workplace climate items.

## Study Limitations

The study had several limitations. First, the study was conducted in one state with county level governmental agencies, thus it may not be generalizable to other workplace settings. The responses of supervisors after the initial training was categorized as those who had and had not received the training, but that distinction is based on self-report not validation of training completion. We have no reason to believe the supervisors would not respond truthfully to the question related to participation given the anonymity of participants; however, this is a limitation to the finding of diffusion of the intervention. Additionally, including only supervisors in the study is a limitation as the findings are not generalizable to workers that are not in a supervisory position in the organization. Further, the majority of participating counties did not have the capacity or system to collect IPV-related leave separate for other types of leave, making it impossible to demonstrate the intervention had an impact on use of the IPV leave law in Oregon counties. However, participating counties self-reported a higher motivation to develop and provide IPV resources and tracking systems based on engagement in the study, but often had limited resources to upgrade systems.

## Implications of Findings

Our study and others have demonstrated that IPV is affecting the workplace. Supervisors have an important role in dissemination of safety resources to employees including information and support on relevant laws, such as protective leave for survivors of sexual assault, IPV and stalking. However, for supervisors to adequately provide information and support, they need training on the diverse needs of employees and how to eliminate barriers to using the protected leave law where applicable. Fear of loss of employment or being labeled as a bad employee are noted as barriers for survivors to seeking advocacy, legal and medical services [Laharnar et al., 2015]. Workplace trainings should be evidence-based and developed with input from survivors and advocates for survivors, easily accessible such as through computer or internet based programs, reasonable length (60–90 min), and self-paced and support adult learners with frequent quizzes and feedback [Anger et al., 2001]. Further, the training should be ongoing, integrated into the employee orientation and/or workplace wellness programs, and accessible to all employees to support diffusion of information and a positive IPV workplace climate throughout the agency/organization.

At the start of the study, 2009, the Oregon law did not require posting of the protective IPV leave law details in the workplace like other important employee rights (e.g., minimum wage). However, in 2014, an amendment to Oregon's IPV leave law was implemented, requiring postings of Oregon's IPV leave law in the workplace and also eliminating eligibility restrictions for employees, which

had previously been reported as a major barrier for employees [Laharnar et al., 2015]. Required postings will help the workplace to disseminate the leave law and raise the awareness but need to be reinforced with workplace trainings and improvement in workplace climate towards IPV.

The workplace climate towards IPV improved which indicated that the participating counties were developing IPV leave policies, however, development and adoption of the policy is not always enough; ineffective dissemination of the law, limited guidelines for implementation and ineffective workplace support can negatively affect the employee and employer.

## CONCLUSION

The “IPV and the Workplace” training resulted in significant improvement in supervisor knowledge about IPV in the workplace and Oregon’s job protected IPV leave law. Additionally, the workplace climate towards IPV was significantly improved in counties that received our training intervention compared to the control counties. Thus, the study provides evidence to support on-site interactive, computer based training as a means for improved workplace safety.

## AUTHORS' CONTRIBUTIONS

Substantial contributions to the conception and design of the work; the acquisition, analysis, and interpretation of data for the work. Drafting the work and revising it critically for important intellectual content. Final approval of the version to be published. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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## ETHICS REVIEW

Johns Hopkins Medical Institutes and Oregon Health & Science University Institutional Review Boards (IRBs) approved study protocols, training, and consent forms. All study participants were given the choice to participate in the study by providing their demographic information or to opt out of the study while still receiving the training by pressing a button. Data were collected only from participants who consented to participate in the research.

## CONFLICT OF INTEREST

OHSU and Dr. Anger have a significant financial interest in Northwest Education Training and Assessment [or NwETA], a company that may have a commercial interest in the results of this research and technology. This potential individual and institutional conflict of interest has been reviewed and managed by OHSU. None of the other authors have conflicts of interest to disclose.

## DISCLOSURE BY AJIM EDITOR OF RECORD

Steven Markowitz declares that he has no competing or conflicts of interest in the review and publication decision regarding this article.

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## APPENDIX A

### Items in the Workplace Climate Towards Domestic Violence Scale (WCTDV)

#### Training & Policies:

As far as I am aware,

1. My workplace has required training for workers to learn about domestic violence.
2. My workplace has required training for supervisors to learn about domestic violence.
3. Supervisors at my workplace are trained to help workers who are in an abusive relationship.
4. My workplace has a policy to discipline workers who commit or threaten acts of domestic violence.
5. Supervisors and workers at my workplace are notified about an abusive partner when a worker has a restraining order/order of protection.

#### Communication & Confidentiality:

As far as I am aware,

1. Resource information about domestic violence has been openly discussed at meetings in my workplace.
2. My workplace provides information for workers about our workplace domestic violence policy.
3. My workplace has a policy to protect worker's personal information about domestic violence.

#### Information & Resources:

As far as I am aware, my workplace provides information for workers about

1. Domestic violence shelters.
2. A domestic violence crisis line.
3. Legal assistance for domestic violence.

4. Counseling services for domestic violence.
5. Restraining orders for domestic violence.
6. Domestic violence abusers programs.

Posting Information:

As far as I am aware,

1. My workplace has information about domestic violence posted in public places.
2. My workplace posts information about domestic violence in multiple languages.

Work Flexibility & Positive Response to IPV:

As far as I am aware,

1. In my workplace, workers are allowed to work through domestic violence issues using work time (such as, to call a lawyer, crisis hotline or shelter).

2. Workplace would provide time off to workers to deal with domestic violence (such as, to attend court, take a child to a counselor, move into safe housing). yes/no.
3. My workplace would adjust a worker's workload without reducing their pay to give them time to deal with domestic violence.
4. Supervisors at my workplace would take positive actions when they see the warning signs of domestic violence (like frequently being late to work and frequent calls from an abusive partner).
5. Co-workers at my workplace would take positive actions when they see the warning signs of domestic violence (like frequently being late to work and frequent calls from an abusive partner).

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