WorkSafeNB S.A.F.E.R Training & Evaluation

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Executive Summary

In partnership with WorkSafeNB, the S.A.F.E.R leadership training program was implemented and evaluated to improve health and safety in selected industry groups in the province of New Brunswick (long-term healthcare, restaurant and hotel management, municipal employees). The primary purpose of this study was to evaluate the effectiveness of the S.A.F.E.R. leadership training and model. Toward this end, we focused on three questions:

1. Was the training effective in enhancing safety leadership?

S.A.F.E.R. Leadership

In partnership with WorkSafeNB, the S.A.F.E.R. leadership training program was implemented and evaluated to improve health and safety in selected industry groups in the province of New Brunswick (

Speak: Communicating about Safety at Work

Behaviors relating to speaking of safety enable one-way dissemination of information about safety and subordinatesÕ safety performance and may include reporting, feedback, or simply verbal exchanges regarding safety. As such, communication is a key component of safety leadership as it is the mechanism through which the leaderÕs view and position on safety are shared with their employees. Indeed, communication has been identified as a critical aspect of effective safety leadership by leaders themselves (Fruhen, Mearns, Flin, & Kirwan, 2013) and has been shown to mediate the relationship between leader-member exchange and safety commitment, which, in turn, predicts lower rates of accidents (Hofmann & Morgeson, 1999). As well, feedback provided at least three times a week was found to effectively maintain improved safety behaviors (Komaki, Heinzmann, & Lawson, 1980).

Several intervention studies to date have focused on improving safety performance by coaching leaders on how to communicate. For example, Zohar (2002b) implemented a intervention that involved teaching leaders how to communicate safety as a priority, as well as enhancing leadersÕ interview skills for giving their employees safety-related feedback. Frequency of safety interactions was reported to be significantly higher in the experimental group, and minor injury rate, earplug use, and perceived safety climate were more stable over time. In another intervention study involving Danish construction foremen, coaching leaders on safety communication was found to increase the amount of verbal exchanges regarding safety, the subordinatesÕ attention to safety, and the safety index of the worksite (Kines et al., 2010). In summary, Zohar (2002b) and Kines et al.Õs (2010) intervention studies demonstrate that safety communication and feedback facilitate better safety outcome

Act: Acting Safe at Work

Although communication is an important aspect of safe leadership, it

the first place. For instance, subordinates of inconsistent leaders who displayed both safety-specific transformational and safety-specific passive behaviors reported lower safety participation and compliance (Mullen, Kelloway, & Teed, 2011).

Motivating subordinates is a mechanism by which good safety leaders can enhance subordinates' safety performance. Conchie (2013) found that intrinsic motivation mediated the relationship between safety-specific transformational leadership and safety citizenship behaviors (i.e., whistle blowing and safety voice behaviors), while extrinsic motivation mediated the relationship between safety-specific transformational leadership and safety compliance. Furthermore, the motivation to not partake in risk-taking behaviors is linked to lower injury rates at work (Westaby & Lowe, 2005).

Focusing on safety involves using active monitoring. Leaders who are able to recognize

up a two-way communication channel that enables subordinates to suggest ways to improve safety in their organization and voice their safety related concerns.

In a study involving offshore drill workers, engaging subordinates and encouraging their questions were considered to be important assets of a good leader by 97% of the respondents (Crichton, 2005). Furthermore, leaders' receptiveness to safety information related to

Recognize: Valuing Safety Efforts

Aside from having a consistent feedback and monitoring system for correcting safety violations, a safety leader values and acknowledges subordinates who are safe in their everyday work. A properly designed safety incentive program uses social praise, recognition, tangible reinforcements, and non-monetary privileges to reinforce the reporting of hazards (Komaki, Barwick, & Scott, 1978). However, a good safety leader does not necessarily need to reward safety accomplishments by monetary means. In an intervention study by Austin, Kessler, Riccobono, and Bailey (1996), daily feedback and weekly monetary reinforcements were associated with 64% labor cost reductions in roofers compared to the workers who were paid by an hourly wage. The researchers conducted a follow-up and found that monetary rewards were not necessary; rewarding employees with break times improved safety compliance. Since recognition is a comparably cost-efficient form of reward that does not draw from company resources, good safety leaders should use it to reinforce desirable safety behaviors.

The Current Study

The goal of the current study was to evaluate the effectiveness of a three-hour

(n=15) group. Seven representatives from long-term care were included in the control group for this industry group as they were unable to attend the industry-specific training. Again, prior to the training, leaders were asked to identify eight direct reports to participate in the study.

In general the design of the study was consistent across both industry groups. First, baseline data were collected from all leaders and their direct reports. The leaders in the ÒtrainingÓ group then participated in the leader training/coaching. Following the training, leaders completed goal surveys (assessing goal progress, satisfaction and effort) every two weeks for the three months following the training (i.e., 6 goal surveys). Leaders were also invited to participate in monthly telephone coaching sessions. Three months after the training, all leaders (both training and control groups) and their direct reports participated in a second round of data collection. Next the leaders assigned to the control group were trained and, again, three months subsequently all leaders and direct reports participated in a third round of data collection. Time lines for both industry groups are presented below.

Long-Term Care

Time 1 Baseline Data Collection	September 2015	Time 2 Data Collection

	a month for three months Leaders invited to participate in phone coaching follow-up sessions once per month for three months	a month for three months Leaders invited to participate in phone coaching follow-up sessions once per month for three months

Mixed Industry Group

Time 1 Baseline All leaders and direct reports from both Training and Control groups completed Time 1 elem / 0.2 (m)	November 2015	Time 2 Data Collection	February 2016	Time 3 Data Collection

the concerns resulted in a less than ideal data set in terms of the number of participants making it more difficult to determine whether or not the program had the intended effects.

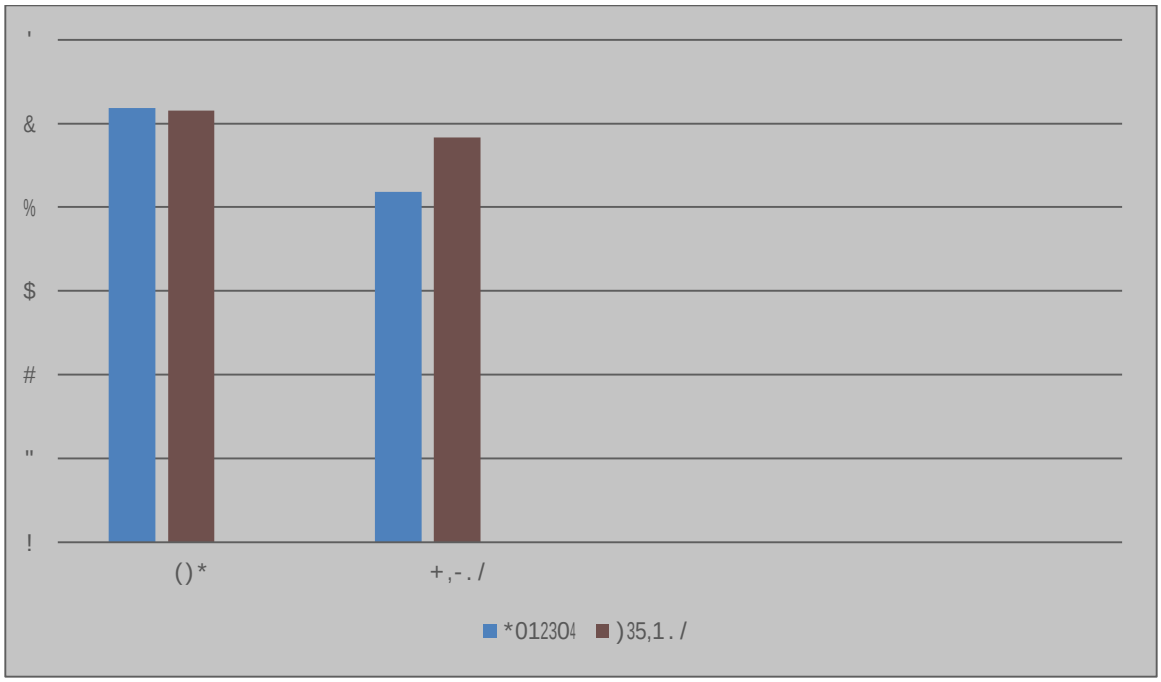
Results

1. Is the training effective?

To assess the validity of the training, we began by asking whether participating in the training resulted in changes in leadersÕ behavior related to the S.A.F.E.R. model.

LeadersÕ Data

To do so we conducted an analysis comparing leadersÕ self-reported S.A.F.E.R.



Employee Data

For the employee data we conducted a series of analyses examining the effect of training on employeesÕ perceptions of theleadersÕ behavior. Again our analyses statistically controlled for group differences at pretest as well as accounting for the nested nature of the data.[1] Results of these analyses are presented in Figure 2. Our initial analysis suggested no significant differences between the two industry groups. Therefore these data were combined to maximize the statistical power of the analysis. As shown, employee perceptions of leader behavior increased from time one to time two when leaders were participants in the training group but did not change appreciably when theleaders were in the control group.

We further examined these changes by considering each of the five dimensions comprising the S.A.F.E.R. model. Results of these analyses are presented in Figure 3. The data

[1] The employee data are nested in that employees each rated a specific leader and multiple employees rated a single leader. This nesting violates the assumptions of most standard analyses and requires a mixed linear model in order to properly estimate the effects and marginal means.

suggest that employees of leaders who were trained saw an appreciable change in their leadersÕ behavior but there was little change in the control group data. In particular, employees reported changes in the trained leaders Speaking, Engaging and Recognizing about safety.

Table 1: Changes in the dimensions of S.A.F.E.R.

	Speak		Act	Focus	Engage	Recognize
	Pre	Post	Pre			

Following the collection of these data, the intervention was reversed with the training of the control group. Prior to training, the control group employees reported a mean S.A.F.E.R. rating of 5.81 (see Figure 2). After the training, the control group employees reported a S.A.F.E.R. rating of 6.08, a small but statistically significant effect of the training on employee perceptions.

These data suggest that the training was effective in changing leadersÕ behavior. Although leadersÕ own self-rated behavior provided equivocal evidence for the effectiveness of the training, employees of the trained leaders reported increased S.A.F.E.R. behaviors relative to the control group. Moreover implementing the training for the control group replicated the effect with employees in this group reporting enhanced perceptions of S.A.F.E.R. training.

2. What is S.A.F.E.R. leadership?

Using data from the employees we correlated employee ratings of S.A.F.E.R. leadership with two other established leadership scales; safety specific transformational leadership (Barling, Loughlin & Kelloway, 2002) and passive leadership (Kelloway, Mullen & Francis, 2006). As hypothesized, S.A.F.E.R. leadership was strongly associated with safety specific transformational leadership ($r_{(147)} = .86$, $p < .001$) and strongly and negatively correlated with passive leadership,

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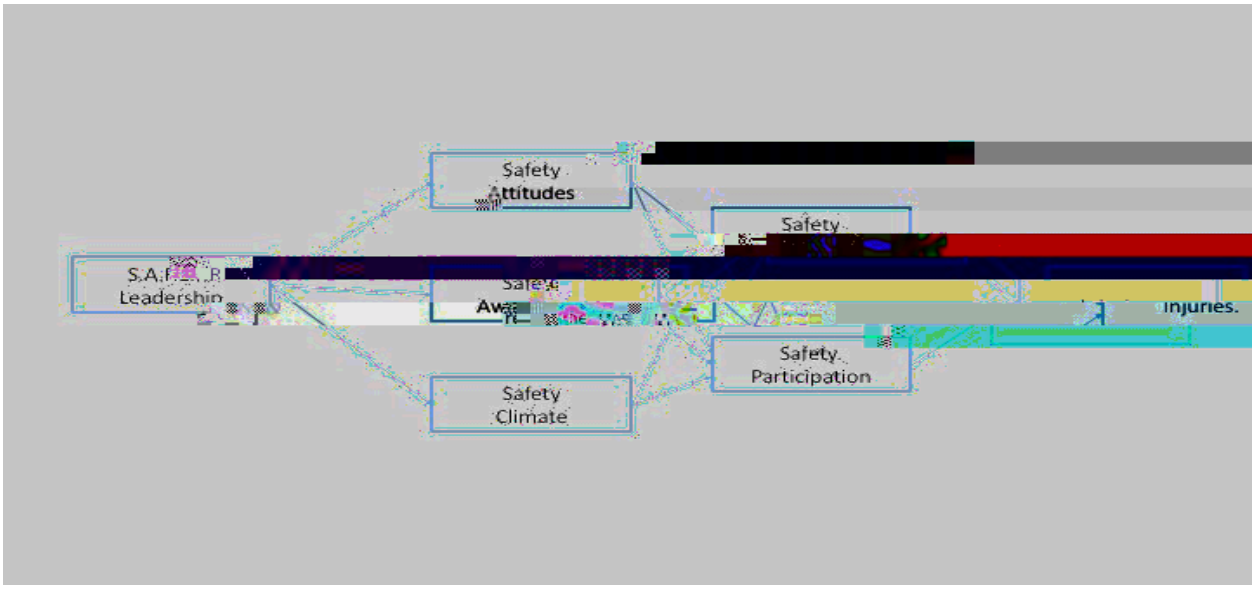
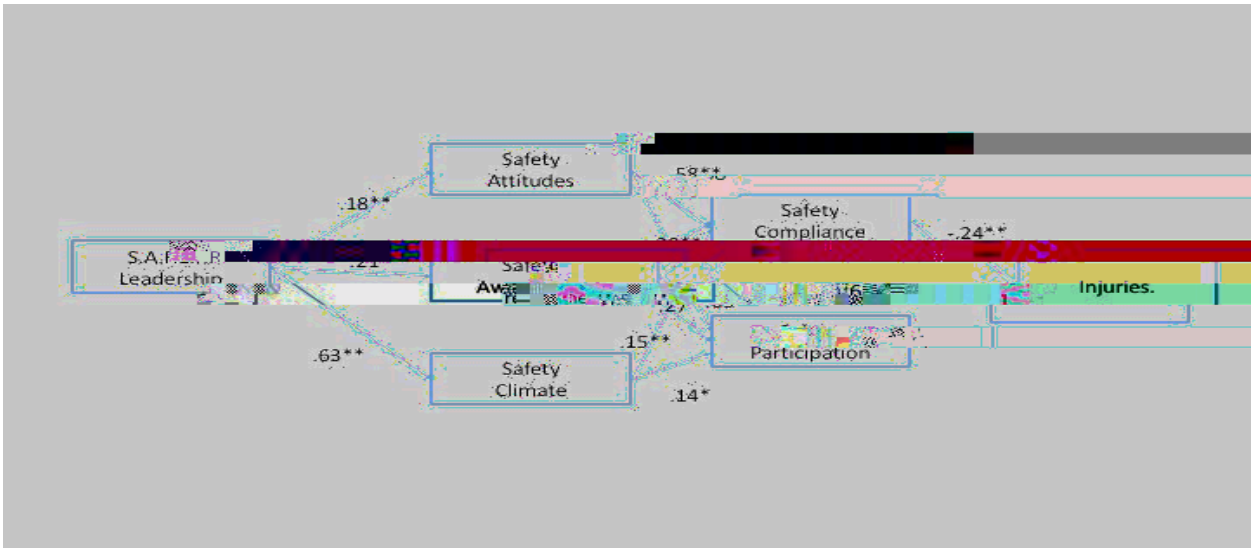


Using the combined data from both industry samples, we tested this model as an observed variable path analysis. The model provided an exceptional fit to the data ($\chi^2_{(46)}$ = 12.06, ns, CFI = .99; RMSEA = .06, ns). All of the hypothesized linkages were statistically significant with the exception of the link between safety participation and injuries which was not. The results of these analyses are presented in Figure 4.

Figure 4: Results ofthe Model Test



Implementing the S.A.F.E.R. model in Francophone LTC Facilities

At the request of WorkSafeNB we also implemented the S.A.F.E.R. training program as previously described in Francophone long-term care facilities. We followed the same general design as previously described however we were not able to implement a full waitlist control

Discussion

The purpose of this study was to evaluate three questions related to the S.A.F.E.R. leadership training program and the S.A.F.E.R. model on which it is based. First, we asked whether the training resulted in enhanced safety leadership. Although self-reports from leaders were equivocal, reports from their employees suggested that training resulted in increases in safety leadership when compared to the control group. Moreover, these increases were particularly pronounced for Speaking, Engaging and Recognizing. This observation is consistent with our experience that these are the more clearly behavioral and easily implementable dimensions of the S.A.F.E.R. model.

Second, we found that S.A.F.E.R. leadership was strongly related to employeesÕ

and perceptions. Attitudes and perceptions result in increased safety behaviors (participation and compliance). Finally, increased compliance behaviors were associated with decreased injuries.

These results offer strong support for the S.A.F.E.R. model as an effective model of S.A.F.E.R. leadership. The results offer some, more

intervention. Although the effects were marginal in some cases, there was evidence that training increased perceptions of leadersÕ S.A.F.E.R. behaviors.

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