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Leadership training as an occupational health intervention: Improved safety and sustained productivity

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ABSTRACT

The safety climate in an organization is determined by how managers balance the relative importance of safety and productivity. This gives leaders a central role in safety in an organization, and from this follows that leadership training may improve safety. Transformational leadership may be one important component but may need to be combined with positive control leadership behaviors. Leadership training that combines transformational leadership and applied behavior analysis may be a way to achieve this.
Purpose: The study evaluates changes in safety climate and productivity among employees whose leaders ($n = 76$) took part in a leadership training program combining transformational leadership and applied behavior analysis. Changes in managers' ratings of transformational leadership, contingent rewards, Management-by-Exceptions Active (MBEA) and safety self-efficacy were evaluated. Moreover, we compare whether the training has differentiated effects on safety depending on managers' specific focus on improvements in: (1) safety, (2) productivity or (3) general leadership.
Result: Safety climate improved over time, while self-rated productivity remained unchanged. As hypothesized, transformational leadership, contingent rewards and safety self-efficacy as proxies for positive control behaviors increased while MBEA, a negative control behavior, decreased. Managers focusing on general leadership skills showed greater improvement in safety climate expectations.
Conclusions: Training leaders in both transformational leadership and applied behavior analysis is related to improvements in leadership and safety. There is no added benefit of focusing specifically on safety or productivity.

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1. Introduction

During a single year (2011), 2.7% of the workforce in the EU was absent from work more than three days due to a workplace accident. A total of 3691 accidents in the EU resulted in death (Eurostat, 2014). This makes improving safety at work an important issue for organizations. Making safety one of the core values of the organization is part of this effort (Dejoy, 2005) and forms the basis for the safety culture (Guldenmund, 2000). Establishment of policies and procedures that communicate safety as a core value in the organization generally falls under the responsibility of the top management. The policies and procedures are then executed at the unit level by managers who translate the organizational policies and procedures into predictable actions

(Zohar, 2010). This creates the safety climate, which can be described as the overt manifestation of the safety culture (Guldenmund, 2000). It is the supervisory practices, e.g. the day-to-day behaviors of managers, that form a pattern of actions that communicates the importance of safety to employees. Managers are, thus, central to employees' perception of the importance of safety at their workplace, that is, the safety climate in the organization (DeJoy, 2004; Zohar, 2000, 2010). In line with this, managerial actions are included in most definitions of safety climate (Flin et al., 2000). This has also led to studies of safety climate as a factor that is determined at the unit level by how the manager handles the relative priority of safety in relation to other important objectives (e.g., productivity) (Zohar, 2010; Zohar and Luria, 2004). Given the central position managers have regarding the safety climate in an organization, and given that safety climate is an important predictor of safety outcomes such as accidents and injuries (Christian et al., 2009; Nahrgang et al., 2007; Zohar, 2010), some have argued that it is logical to focus on leadership training as a

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way to improve safety climate and safety performance at work (Kelloway and Barling, 2010). However, thus far, few studies have evaluated how such training impacts safety (Kelloway and Barling, 2010).

In the general leadership literature as well as in the safety literature, the most studied leadership style is transformational leadership. It has been positively related to a range of different outcomes, including effectiveness (Lowe et al., 1996), group performance (DeGroot et al., 2000), group potency (Bass et al., 2003), group cohesiveness (Bass et al., 2003; Hoyt and Blascovich, 2003), collective efficacy (Kark et al., 2003), success of change processes (Higgs and Rowland, 2011) as well as safety (Kelloway and Barling, 2010). Theoretically, the effects of transformational leadership are achieved by promoting transformation and inspiring employees to perform and to reach beyond expectations by aligning their personal goals with the goals of the organization (Avolio et al., 2009). Thus, transformational leadership is particularly effective for extra-role behaviors and commitment to the organization and for situations that call for learning, creativity and engagement (Griffin and Talati, 2014). However, safety also calls for risk avoidance and compliance with safety regulations (Clarke, 2013; Griffin and Talati, 2014). For this, leadership behaviors such as monitoring, proactively responding to potential problems, goal setting and providing feedback on performance, i.e. positive control behaviors, are more efficient (Clarke, 2013; Kapp, 2011). In line with this, there has been a call for research that takes a broader approach to safety leadership training by targeting a wider range of leadership behaviors (Clarke, 2013; Tappura and Nenonen, 2014). This may include the application of behavior modification approaches based on applied behavior analysis (ABA) (Skinner, 1963). This is a common approach in safety interventions, although its application in a leadership training context is more limited (Dejoy, 2005; Stajkovic and Luthans, 1997; Zohar and Luria, 2003).

The present study aims to evaluate changes in employee ratings of safety climate and productivity after a leadership training program that combines transformational leadership theory and ABA. If we are to attribute any change in safety following a leadership intervention to the intervention itself, these changes must be accompanied by changes in leadership. For this reason, we also investigate changes in leadership ratings. In addition, we aim to test whether general leadership training has differentiated effects on safety depending on the managers' specific focus on improving: (1) safety, (2) productivity or (3) their general leadership skills. The present study makes three main contributions to the literature. First, it adds to our current knowledge about how leadership training relates to safety climate and productivity by evaluating an extensive training program over a longer follow-up period than has previously been investigated (Kelloway and Barling, 2010; Mullen and Kelloway, 2009). Second, it tests whether any change in safety climate and productivity differ between managers focusing specifically on improving safety, productivity or general leadership skills, thereby contributing to the discourse on whether general leadership training is sufficient or whether safety-specific leadership training is required (Mullen and Kelloway, 2009; Zohar, 2002b). Third, it expands the literature by evaluating a novel combination of two well-established approaches to leadership training and safety (transformational leadership and ABA), thereby contributing to our conceptual understanding of the leadership models involved. Specifically, it contributes to the current knowledge by separately evaluating effects on positive and negative leader control behaviors.

1.1. Leadership interventions and safety outcomes

Studies have consistently shown that leadership is an important antecedent of employee safety perceptions, attitudes,

behaviors and outcomes including safety participation, compliance and climate (Clarke, 2013; Kapp, 2012; Kelloway and Barling, 2010; Lu and Yang, 2010; Zohar, 2002a, 2010). One important reason for managers' influence of safety may be that the relative importance of safety is determined in relation to other objectives in an organization, which the manager is also responsible for. By focusing on the leader as the target level of intervention, safety becomes the objective of the leader, placing the responsibility for multiple objectives (e.g., productivity, safety, organizational learning) on the same person. This may help align safety with other objectives of the organization, which thereby may decrease the risk that safety is approached as a temporary priority or project that can be de-prioritized when it is time for the next project (von Thiele Schwarz and Hasson, 2013). Zohar (2002b) added additional arguments for managerial-level interventions. First, interventions on the managerial level entail using ongoing interactions (between managers and employees) to perform activities, such as monitoring and giving feedback on safety, that in individual- or group-level interventions are performed by external staff or co-workers. Second, when safety is communicated by the manager, this carries extra weight in terms of stressing safety as a value and its relative importance in relation to other priorities (Dejoy, 2005). Also, it may increase the likelihood that performance of these activities will become routinized, thereby increasing their sustainability. Third, training managers may facilitate a broadening of interventions, from focusing on a specific behavior or safety issue to taking a more holistic approach to safety that penetrates several activities. Fourth, it may be more economical to invest in training managers (who are fewer) rather than all employees.

Although safety is generally considered a long-term interest of an organization, there are short-term tradeoffs between safety and productivity. Because safety precautions usually entail short-term costs (slower speed, more effort or increased inconvenience), the cost-benefit balance between safety and productivity is pushed toward productivity (Cowing et al., 2004; Zohar, 2002a). Productivity pressure is one of the greatest obstacles preventing managers from engaging in safety leadership (Conchie et al., 2013). The way in which managers balance the two objectives of productivity and safety has been described as the core component of safety climate (Zohar, 2000, 2002a) and, thus, for managers establishing the relative priority of safety among different performance objectives could be considered one of the most central tasks. This means that managers' ability to enact the importance of safety––that is, to show through their daily behavior that safety is valued––is vital. Based on managers' role in the safety climate in an organization, and their role in balancing competing objectives (e.g., safety in relation to productivity), we propose that improving safety climate while sustaining productivity is central outcome of a leadership training intervention, leading to the following hypotheses:

H1. Safety climate, e.g. employee perceptions of managers' enacted safety actions and expectations, will improve after a leadership training intervention.

H2. Employee-rated productivity will be sustained after a leadership training intervention.

A leadership training program can either be directed toward general improvements in leadership (e.g., facet free) or specific to a certain area (facet specific). It has been argued that leadership training that is specifically focused on safety (facet specific) may be necessary for increasing the relative priority of safety in relation to other objectives (Zohar, 2002b). In support of this, a study