The LEAD program and the Effect of Leadership on Employee Well-Being

by

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The LEAD program and the Effect of Leadership on Employee Well-Being

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Abstract: Although transformational leadership has consistently been shown to have a positive effect on direct reports' well-being, a focus on leaders' own well-being is lacking. Moreover, leadership interventions have been proposed as a vehicle for occupational health interventions, but there has been limited research that directly evaluates this premise. Therefore, there were three goals for this dissertation: (1) to develop a transformational leadership intervention that targets leader and direct report well-being through leadership behaviour change; (2) to evaluate the efficacy of the program in increasing transformational leadership behaviours; (3) and to determine whether and how leader and direct report well-being can be positively influenced through leadership development. The program of research consisted of two studies: Study 1 involved the development of the LEAD program anchored by SME interviews as part of a four-step content development process, and Study 2 involved evaluating the efficacy of the LEAD program. In Study 1, I identified ten themes critical to leadership program design, which became the foundation for the LEAD program. LEAD was designed as a 10-week program focusing on transformational leadership development through individualized phone-based coaching. In Study 2, I recruited 72 leaders who were assigned to either the first intervention or wait-list control group. The efficacy of the program was evaluated through Kirkpatrick's model of training evaluation criteria, using both leader self-report and direct report data. Study 2 yielded mixed results. Leaders' reactions to the LEAD program were highly positive, and there were significant overall and weekly increases in transformational leadership and efficacy (leadership and professional). However, LEAD negatively affected leader, but not direct report, well-being. Together these studies failed to convincingly demonstrate the efficacy of the program. However, the studies do contribute to the theoretical understanding of leadership, employee well-being, and the potential for leadership development as an occupational health intervention.

November 4th, 2019

The LEAD program and the Effect of Leadership on Employee Well-Being

Organizations are currently facing a well-being crisis. A majority of Canadian workers (70%) reported that their work experience negatively affected their mental health, and workplace stress was identified as the primary cause of mental health and illness (Howatt, Bradley, Adams, Mahajan, & Kennedy, 2018). Moreover, high rates of stress, driven by the demands and psychosocial environment of the workplace, affect employees at every level of an organization (Campbell, Innis Bates, Marin, & Meddings, 2007; Sivanathan, Arnold, Turner, & Barling, 2004). Additionally, both leaders (Campbell et al., 2007) and individual contributors (American Psychological Association, 2016) reported that their workplaces provide inadequate support and resources for managing employee well-being. Despite these challenges at work, the workplace also can be a source of support (Bakker, Demerouti, & Euwema, 2005; Fredrickson, & Losada, 2005; Stinglhamber, & Vandenberghe, 2003) and can positively affect employee well-being (Panaccio, & Vandenberghe, 2009; Rhoades, & Eisenberger, 2002).

Transformational leadership may be particularly important when it comes to employee well-being, as it can influence both organizational and individual functioning. For example, transformational leaders have been shown to positively influence organizational performance (Barling, Weber, & Kelloway, 1996; Muterera, Hemsworth, Baregheh, & Garcia-Rivera, 2018), and employee health and well-being (Kranabetter & Niessen, 2017; Mullen & Kelloway, 2011; Sivanathan et al., 2004). Moreover, there is emerging evidence to suggest that transformational leadership can also affect leaders' own well-being, although to date support for the relationship of that effect has been mixed. In support of this premise, Byrne et al. (2014) found a negative relationship

between transformational leadership and depleted psychological resources. However, more recent research found a positive relationship between transformational leadership and leaders' emotional exhaustion and turnover intentions that was significant beyond the positive effects on leaders' need fulfillment and positive affect. (Lin, Scott, & Matta, 2018). Given both the limited and mixed support for the positive effect of transformational leadership on leader well-being there is a need to further explore the relationship. Moreover, research on transformational leadership and well-being has largely been cross sectional, and there remains an opportunity to explore whether the development of transformational leadership skills can positively influence the development of leader and direct reports' well-being. Therefore, offering transformational leadership development programs should be explored as an important organizational resource that can positively support organizational functioning by improving leaders' transformational leadership behaviours, which in turn could positively support the well-being of both leaders and their direct reports.

Transformational leadership is widely recognized for its positive effects not only on organizational-level outcomes (Barling, Weber, & Kelloway, 1996; Howell & Avolio, 1993; Pereira & Gomes, 2012), but also on individual-level outcomes (Vincent-Höper, Muser, & Janneck, 2012; Zhu, Avolio, & Walumbwa, 2009), such as on employee well-being (Arnold, 2017; Arnold & Connelly, 2013; Arnold, Turner, Barling, Kelloway, & McKee, 2007; Kossek et al., 2018; Nielsen, Randall, Yarker, & Brenner, 2008). Moreover, a significant body of research has documented that transformational leadership skills can be trained (e.g., Antonakis, Fenley, & Liechti, 2011; Barling et al., 1996; Brown & May, 2012; Fitzgerald & Schutte, 2010; Hardy et al., 2010; Kelloway, Barling,

& Helleur 2000; Kirkbride, 2006; Mullen & Kelloway, 2009). However, traditional leadership development programs have largely used face-to-face delivery formats (e.g., Barling et al., 1996), which can be inflexible and inaccessible to leaders in more rural environments, as well as being misaligned with current realities of the working environment. Clinical practices have successfully leveraged virtual therapeutic models to provide services to rural locations (Stamm, 2003). However, research on more accessible and technologically enabled forms of leadership development have been lacking despite the growing virtual workplace, where both leaders and their direct reports are performing their roles in geographically dispersed areas (Gartner, 2018; Noe, Clarke, & Klein, 2014). Additionally, most training programs have focused on increasing leadership skills, but not on more distal individual-level outcomes such as well-being (Dimoff & Kelloway, 2017; Kelloway & Barling, 2010). Therefore, I developed and validated a phone-based transformational leadership training program that targets both leadership skills and employee well-being. In addition to evaluating the efficacy of the program, I examined potential mechanisms that may help explain how transformational leadership improves individual functioning at work.

Transformational Leadership Theory

Transformational leadership has become the most researched leadership theory (Barling, 2014; Judge & Bono, 2000; Lord, Day, Zaccaro, Avolio, & Eagly, 2017). Bass (1985) built his theory of transformational leadership on Burns' (1978) original conception of the term pertaining to political leadership. Burns described a leadership spectrum that ranged from transactional leadership, defined by specific transactions between leader and follower, to transformational leadership, which met followers higher

order intrinsic needs. However, Bass conceptualized transformational leadership not as being on the opposite end of a leadership spectrum from transactional leadership, but rather as behaviours that went beyond the mere transactions that occur between a leader and their follower. Specifically, he argued that there are four key transformational leadership behaviours that contribute to effective leadership, and subsequently positive organizational and individual outcomes: (1) inspirational motivation (i.e., leaders instill in their employees the mindset that they can achieve more than they ever believed possible, enhancing employees' ability to overcome obstacles); (2) idealized influence (i.e., leaders make decisions based on and model moral commitment to their employees instead of short-term organizational profit and efficiency guiding decision-making); (3) intellectual stimulation (i.e., leaders encourage employees, and model how, to broaden their thought process, reframe problems, challenge their typically held assumptions, and develop their own strategies to tackle setbacks in innovative ways); and (4) individual consideration (i.e., leaders focus on the development needs of their employees, model compassion, and create a supportive and team-centric environment; Bass, 1985; Bass & Avolio, 1994).

This conceptualization of transformational leadership has gained significant popularity both in research and practice. The original four factor structure that defined transformational leadership behaviours remains a useful tool for operationalizing and integrating the component behaviours into both research and practice, particularly when looking at contextual and demographic differences (Arnold & Loughlin, 2013; Carless, Mann, & Wearing, 1998; Kirkbride, 2006; Ratiu, David, & Baban, 2016). However, an inconsistent factor structure (Tejeda, Scandura, & Pillai, 2001) has led to use of a single

dimension of transformational leadership in recent research (e.g., Frieder, Wang, & Oh, 2018). Regardless of its use as a single or four-factor construct, a compelling body of research, demonstrates that transformational leadership predicts positive organizational and individual-level outcomes (Wang et al., 2011).

Organizational, Leader & Direct Report Outcomes

Transformational leadership has a significant effect on individual, team, and organizational performance (Wang et al., 2011). At an organizational level, higher levels of transformational leadership have been associated with decreased illegitimate absenteeism (Frooman, Mendelson, & Murphy, 2012), increased engagement (Vincent-Höper, et al., 2012; Zhu et al., 2009) and extra-role behaviours (Salanova, Lorente, Chambel, & Martínez, 2011), as well as individual, team, and organizational performance (Wang et al., 2011).

Interestingly, the relationship between transformational leadership and organizational performance is not a direct one: Instead, it appears that the key mediating mechanism may be the positive influence of transformational leaders on work behaviours and attitudes, which affect employee well-being. Well-being may then affect performance by providing a foundation of resources that allow employees to engage more actively in their work (Fritz & Sonnentag, 2006). For example, Oswald, Proto, and Sgroi (2015) manipulated happiness through a 10-minute composite clip of comedic sketches, and subsequently increased participants' productivity by 12%. Wright and Cropanzano (2000) replicated a positive relationship between psychological well-being and job performance, over and above job satisfaction, across two studies. Moreover, Nielsen et al.'s (2017) meta-analysis on workplace well-being resources found a significant relationship

between resources, such as individual and leadership interventions, and performance. Therefore, organizations should focus on both transformational leadership and employee well-being as resources to improve performance. Both transformational leadership and employee well-being are clear catalysts for performance, and worthwhile foci for organizational interventions.

Direct Report Well-Being. Organizational leaders are in the unique position both to model good behaviour and, subsequently, to influence their employees' behaviour. Such behavioural modeling is implicit to the transformational leadership model. Kelloway and Barling (2010) described the relationship between the formal organizational leaders and their employees as being the most important relationship in the workplace in terms of its influence on individual level well-being. Transformational leadership tends to be associated with increased experiences of optimism, happiness, and enthusiasm in followers (Bono, Foldes, Vinson, & Muros, 2007). Just as good leadership has been shown to increase employee well-being, poor leadership has been associated with decreased employee well-being (e.g., Densten, 2005; Kelloway, Sivanathan, Francis, and Barling, 2005; Tepper, 2000), in terms of increased job strain (Moyle, 1998; Rooney & Gottlieb, 2007), depression (Van Dierendonck, Haynes, Borrill, & Stride, 2004), and burnout (Lee & Ashforth, 1996) and more negative health behaviours (Kuovonen et al., 2009; Nyberg, Westerlund, Magnusson Hanson, & Theorell, 2008).

Evidence for these positive associations between transformational leadership and well-being continues to accumulate (Arnold, 2017; Nielsen et al., 2017; Kuoppala et al., 2008). However, less is known about the mechanisms that explain the positive relationship. Inceoglu, Thomas, Chu, Plans, and Gerbasi (2018) identified five categories

of mediators in their review of the literature on leadership and well-being: (1) social-cognitive, (2) motivational, (3) affective, (4) relational, and (5) identification. Two constructs that were highlighted in Inceoglu et al.'s review and have received the most attention to date are employee self-efficacy and employees' trust in their leader (Arnold, 2017; Kelloway, Turner, Barling, & Loughlin, 2012; Kelloway & Dimoff, 2017; Liu, Siu, & Shi, 2010; Munir, Nielsen, Garde, Albertsen, & Carneiro, 2012; Nielsen, Yarker, Randall, & Munir, 2009).

Mediating effects of self-efficacy & trust in leader. Understanding the mechanisms as to how leadership positively influences employee well-being is a critical step in supporting employee health as well as understanding how to best design leadership interventions.

*Self-efficacy***.** Bandura (1997) defined self-efficacy as the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). Self-efficacy is an organic component of social cognitive theory, working with the other elements to help direct thought, motivation, behaviour, and ultimately action. Self-efficacy is strengthened through mastery experiences and can be weakened in the face of failure (Bandura, 1997). Self-efficacy is distinct from pure ability: It is not about the ability that an individual has, so much as a reflection on what they believe they can do (Bandura, 1997).

Self-efficacy also has clear associations with health (e.g., Williams & French, 2011) and well-being (Fida, Laschinger, & Leiter, 2018; Hentrich et al., 2017). Self-efficacy is associated with a number of positive health behaviours such as healthy eating (Reyes Fernández, Warner, Knoll, & Montenegro Montenegro, Schwarzer, 2015),

engaging in physical exercise (McAuley & Jacobson, 1991), and oral health behaviours (Schwarzer, Antoniuk, & Gholami, 2015). Moreover, self-efficacy is considered a key component for positive behaviour change (Bandura, 1977). In an organizational context, self-efficacy is positively related to job satisfaction (Judge & Bono, 2001), work performance (Judge & Bono, 2001; Stajkovic & Luthans, 1998), and engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2012), and negatively related to job stress and burnout (Schwarzer & Hallum, 2008).

Given these relationships, it is advantageous to examine how leaders can increase employees' self-efficacy. Leaders are well positioned to affect employees' levels of self-efficacy, and there is a growing body of research suggesting that transformational leadership has a positive relationship with employee self-efficacy (Arnold, 2017; Kelloway et al., 2012; Liu et al., 2010; Nielsen & Munir, 2009; Nielsen et al., 2009), such that self-efficacy can help explain the relationship between transformational leadership and well-being (Liu et al., 2010; Nielsen & Munir, 2009; Nielsen et al., 2009). For example, Nielsen and colleagues (2009) found that self-efficacy fully mediated the relationship between transformational leadership and well-being in a sample of elderly care providers. Liu et al. (2010) found similar mediation effects in a sample of human resource managers, where self-efficacy fully mediated the relationship between transformational leadership and perceived stress and stress symptoms.

Longitudinal research on the mediating effects of self-efficacy on the relationship between leadership and well-being is limited and less encouraging. Nielsen and Munir (2009) examined both cross sectional and longitudinal relationships between transformational leadership, direct report self-efficacy and affective well-being.

Although, they found cross-sectional support for the mediation at Time 2 (18-months), there was no relationship between transformational leadership and self-efficacy at Time 1. As a result of the non-significant Time 1 relationship there was insufficient support to test the two-step mediation of self-efficacy on transformational leadership and employee well-being over time.

*Trust in leader***.** Employees' trust in their leader is another psychological mechanism that is emerging as a likely mediator in the relationship between transformational leadership and well-being (Arnold, 2017; Kelloway et al., 2012; Liu et al., 2010). Mayer, Davis, and Schoorman (1995) defined employees' trust in their leader as a willingness to be vulnerable to their leader, something that is built from a direct reports' impression of their leader as able, having integrity, and being benevolent towards their employees. A significant empirical body of literature exists to support the positive relationship between leadership behaviours and employees' trust in their leader (e.g., Dirks & Ferrin, 2002; Gillespie & Mann, 2004; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Furthermore, a growing empirical basis for the relationship between trust in one's leader and well-being is emerging (Kelloway et al., 2012; Liu et al., 2010) with trust as a mediator in this relationship. For example, Liu and colleagues (2010) found trust in one's leader to fully mediate the relationship between transformational leadership and perceived stress and stress symptoms in a sample of human resource managers. Kelloway et al. (2012) also found that trust fully mediated the relationship between transformational leadership and employee psychological well-being in two cross-sectional samples. This relationship held even after controlling for individual factors, such as personality and the extent to which employees liked their leader. In addition to

the positive relationship between transformational leadership, trust, and well-being, it was demonstrated that less effective leadership styles (i.e., laissez-faire leadership, and management-by-exception) had significant negative relationships with both trust and psychological well-being (Kelloway et al., 2012).

Direct report self-efficacy and trust in leader are both variables that have been shown to mediate the relationship between transformational leadership and employee well-being (Arnold, 2017). However, no systematic research has looked at whether direct report self-efficacy and trust in leader can be developed through leadership training, translate into higher employee well-being. That is, leadership development training has successfully increased transformational leadership behaviours (Brown & May, 2012), and the expression of those behaviours have subsequently been shown to increase direct report self-efficacy (e.g., Nielsen & Munir, 2009) and trust in leaders (Kelloway et al., 2012). What has yet been demonstrated is whether such a causal chain that begins with leadership development training can extend to well-being, through the increase in direct report self-efficacy and trust in leader.

Leader Well-Being. Although there has been a significant research focus on the relationship, effect, and to some extent, the mechanisms that explain the relationship between transformational leadership and direct report well-being (see Arnold, 2017), there has been much less focus on the relationship between engaging in transformational leadership behaviours and one's own health and well-being (Kranabetter & Niessen, 2016). For instance, a meta-analysis on leadership and well-being was unable to find any studies that explored leader stress and transformational leadership (Harms, Credé, Tynan, Leon, & Jeung, 2017). However, they were able to find several articles supporting the

relationship between transformational leadership and leader emotional exhaustion and reduced personal accomplishment. Specifically, there was a significant negative relationship between transformational leadership and these indicators of burnout. Additionally, the meta-analysis lends further support for the positive effect that transformational leadership has on subordinate stress and burnout. That is transformational leadership was negatively associated with both negative indices of direct report well-being.

Kaluza, Boer, Buengeler, and van Dick (2019) also completed a meta-analysis demonstrating the positive relationship between leadership, not transformational leadership specifically, and well-being. In their study transformational leadership was combined with other theoretical models of leadership into a broader catergory of constructive leadership, which was composed of task-, relational-, and change-oriented leadership. Relational- and change-oriented leadership, with which transformational leadership was directly aligned, explained more variance in leaders' well-being than the more transactional task-oriented leadership. Although both Kaluza et al.'s (2019) and Harms et al.'s (2017) meta-analyses are supportive of the positive relationship between leadership and leader well-being, both studies lacked specificity in their conclusions pertaining to transformational leadership because of the lack of empirical research specifically focused on *transformational* leadership and leader well-being.

Byrne et al. (2014) examined the effect of leaders' resource depletion on the kind of leadership behaviours that they exhibit. The authors found that those leaders who participate in resource depleting activities (i.e., workplace alcohol consumption), and experience resource depleting states (i.e., depressive symptoms, and anxiety) also

exhibited less transformational leadership behaviours. This observed relationship was explained via the conservation of resource model, arguing that personal resources, such as well-being behaviours, are a critical antecedence in transformational leadership behaviours. However, the causal ordering of the effects remains unclear. Although the hypothesized ordering in the research suggests that psychological resources provide a necessary foundation to effective leadership behaviours, it is also possible that effective leadership practices provide more resources to engage in healthy practices and are thus a foundation for psychological well-being.

There also have been studies that emphasize the value of leader well-being and health behaviours in modeling positive behaviours for followers. For example, Franke, Felfe, and Pundt (2014) found that direct reports' perception of their leaders' self-care mediated the relationship between their perceptions of how much their leader cared for their employees' well-being and direct reports' self-reported well-being. Additionally, Kranabetter and Niessen (2016) found that transformational leaders with awareness about their own health had direct reports that experienced less emotional exhaustion than their less health aware leaders. This relationship was not as consistent for health behaviours, leaving the authors to hypothesize that leaders' health awareness may be more visible to direct reports than their health behaviours, and subsequently drive a stronger effect. These studies have implications for interventions that aim to improve employee well-being through leadership development, demonstrating the importance of targeting behaviours, attitudes, and values that direct reports can directly observe their leaders modeling.

Transformational Leadership Training

In their extensive review of leadership interventions, Avolio, Reichard, Hannah, Walumbwa, and Chan (2009) concluded that leadership interventions result in improved leadership skills particularly when the intervention is focused on development activities. Successful leadership interventions have used a variety of techniques to improve leadership, including interactive workshops (Dvir, Eden, Avolio, & Shamir, 2002), leadership coaching, (Kombarakaran, Yang, Baker, & Fernandes, 2008) and methods that have combined workshops and coaching techniques (e.g., Antonakis et al., 2011; Barling et al., 1996; Kelloway et al., 2000).

Barling et al.'s (1996) leadership intervention combined elements of transformational leadership education with developmental coaching discussions and goal setting. Barling et al. (1996) randomly assigned managers to either a control group who received no training, or to an experimental group, who, completed a one-day workshop on transformational leadership and developmental sessions. Experimental group participants then met with a coach who provided them with feedback based on employees' ratings of their transformational leadership style, and who discussed specific goals to improve their transformational leadership skills. Additional sessions were held between the participant and coach once a month for the proceeding three months, where goal progress was reviewed. By developing the transformational leadership skills of participants, they demonstrated an increase in followers' ratings of their leaders' transformational leadership skills, in employees' attitude towards the organization, and in objective financial performance measures for the organization in the experimental, but not the control group.

In a follow-up study, Kelloway et al. (2000) looked to disentangle the workshop and developmental/coaching components of the Barling et al. (1996) intervention. Compared to simply participating in the workshop, participating in either the transformational leadership coaching or the developmental component resulted in higher ratings of leaders' transformational leadership skills. However, participating in both coaching and the developmental component on top of the workshop did not result in significantly higher transformational leadership ratings beyond ratings received when participating in the individual program components. That is, participating in either coaching or developmental component was just as good as participating in both.

Brown and May (2012) looked at a four-phase transformational leadership intervention: awareness, feedback, planning, and application. Front-line managers participated in a two-day training program in which they identified characteristics of good leaders, and created an action plan, which they later received feedback on. Following the two-day training, the managers were expected to implement their action plan in their workplace. During this time, they had weekly meeting with their supervisors where they discussed their action plan and met with a coach from the training at the three and nine-month mark. After 11.5 months, there was a final evaluation of the program. There were significant improvements in contingent reward, individualized attention, inspirational motivation, and increased productivity in the work units. This intervention, like Barling et al. (1996) and Kelloway et al. (2000) demonstrates how training focusing on goal setting, feedback, and application can be effective.

Collectively, there is compelling evidence to suggest that the methodological approach of education, feedback, goal setting, application, and coaching is clearly

effective for transformational leadership. Moreover, this methodology also has demonstrated to be an effective method for interventions targeting employee well-being.

Leadership and Well-Being Training. Leadership training programs have largely focused on improving leadership behaviours without targeting other outcomes such as well-being. In response to this lack of research, Elo, Ervasti, Kuosma, and Mattila-Holappa (2014) attempted to improve follower well-being (i.e., decrease direct report perceived stress and emotional exhaustion) using a 7.5 day leadership training program emphasizing self-awareness. However, the intervention was unsuccessful, in that direct report well-being, which was measured as a lack of stress and exhaustion, did not improve over the course of the intervention. Post-study reactions from leaders led the authors to conclude that a lack of perceived psychological security could have been a factor, as well as a lack of leaders' motivation to develop and receive constructive criticism. However, it is also possible that the intervention did not focus on the best behaviours to change. One of the most effective ways that leaders can influence employee behaviour is through modeling desired behaviours. Therefore, developing a program that helps leaders develop and model adaptive coping skills to handle their own work demands, in addition to training on transformational leadership more broadly, may be a more effective combination of skill building to positively effect direct report well-being.

Dimoff and Kelloway (2018) successfully used leader development specifically related to mental health awareness to positively influence direct report awareness and support of mental health resources. Leaders were trained to increase their level of vocal support and information sharing of mental health and mental health resources. Through

an increase in open discussion and modeling their support for mental health resource use, leaders were able to significantly increase their direct reports awareness and use of mental health resources. Effectively, leaders support of inclusive mental health attitudes, resulted in attitude and behavioural shifts in their direct reports.

Summary

There is a significant and growing body of research that highlights the positive relationship between transformational leadership and employee well-being (Arnold, 2017). The implication of this combined body of research suggests that leadership training can be an effective intervention for leader and employee well-being. However, most of this research has been cross-sectional (e.g., 80% of the research that Arnold (2017) reviewed was cross-sectional) and a very limited number of studies highlight intervention research. Although, there has been some success at targeting leadership training to increase leader, and indirectly employee awareness and behaviour change, around mental-health (Dimoff & Kelloway, 2018), there remains limited research on interventions that target leadership and more global well-being concurrently.

Proposed Research

The main objective of this research program is to test whether both leader and employee well-being can be positively influenced through transformational leadership training. Moreover, this research furthers the theoretical knowledge on the mechanisms that drive employee well-being (i.e., self-efficacy and trust in leader) by examining these relationships through a longitudinal research design and extending our understanding of the leadership well-being relationship by focusing on both direct-reports and leader well-being. These goals will be addressed in two studies. Study 1 involved the development of

the Leadership Effectiveness through Accountability and Development (LEAD) Program. The LEAD program content was developed by integrating research on training design, leadership development, and leadership and well-being, including data based on interviews with subject matter experts (SMEs) in leadership development design/facilitation and with participants of leadership development training. Study 2 tested the validity of the LEAD program through a longitudinal (three time periods over nine months) wait-list control design. The survey data from the three time points were used to evaluate the extent to which transformational leadership behaviours and efficacy could be increased through the LEAD program, the extent to which the LEAD program could increase leaders' well-being, and the mechanisms that drive the relationship between transformational leadership and well-being, as well as the role that leadership behaviours play in direct report well-being.

STUDY 1

The previous overview established that transformational leadership can be effectively trained (see Avolio et al., 2009) and that transformational leadership has a positive effect on employee well-being (see Arnold, 2017). Additionally, there is a growing interest in using transformational leadership training as an organizational intervention to positively affect employee well-being (Kelloway & Barling, 2010). However, there have been limited intervention studies that focus on transformational leadership and well-being, and none that has focused on both the well-being of the leaders participating in the training and on the well-being of their direct reports. Moreover, leadership development has not stylistically adapted to how leaders are required to lead; that is with a growing geographically diverse workforce leaders are

required to influence through virtual and distance-based mechanisms. Therefore, there is a need for research on validated interventions that target transformational leadership development as a mechanism to support employee well-being, and that does so through virtual mechanisms. Study 1 is the first step in addressing this gap by developing the content and design of the Leadership Effectiveness through Accountability and Development (LEAD) program, which will concurrently focus on transformational leadership development and the well-being of leaders and their direct reports through a distance-based format.

Training Design

Although the aim of the LEAD program is to target transformational leadership behaviours as a central focus, it is important to look beyond the specific literature on the effectiveness of leadership training to the global factors that may affect training outcomes, such as, general training efficacy, goal setting, and motivation. Campbell and colleagues (Campbell, McCloy, Oppler, & Sager, 1993; McCloy, Campbell, & Cudeck, 1994) argued that performance is affected by three factors: declarative knowledge (information knowledge pertaining to facts, job requirements, and operations), procedural knowledge and skills (integration of knowing what to do on the job), and motivation. Incorporating more engaging methodologies in interventions allows leaders to actively participate (Burke et al., 2006), which may increase motivation for the program. Moreover, beliefs about the efficacy of outcomes (in terms of achievability and desirability) tend to be associated not only with the extent to which the knowledge is retained, but also with the extent to which the knowledge is applied to daily work tasks (Colquitt, LePine, & Noe, 2000).

Another concern for any training program or intervention is the extent to which the information and skills learned are implemented successfully in the workplace. In fact, only 30% (Burke & Saks, 2009; Saks, 2002) or less (Baldwin & Ford, 1988) of all organizational training is successfully implemented and maintained. It is imperative to ensure that any new program has enough realism and practicality to transfer back to the workplace. Using an on-going coaching model in which leaders can 'try out' new behaviours and review their challenges and successes with their coaches over a longer period should have more beneficial effects than a one-time training setting. This model has been successful in past individual-tailored interventions (Day et al., 2014; Barling et al., 1996; Kelloway et al., 2000) because it provides supports to participants and it allows coaches to provide timely feedback to participants, which is more effective than goal setting alone. Such a feedback model provides practical insight, reinforcement, and progress information about the goals (Locke & Latham, 2002). A 2017 meta-analysis validated these elements of training design specifically for leadership training (Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017). Specifically, Lacerenza et al. identified needs analysis, feedback, multiple delivery methods, spaced training sessions, a location that is on-site, and face-to-face delivery as having significant positive impacts on the efficacy of leadership training.

The LEAD program design integrates the literature on critical behaviours and methods for successful training transfer, while addressing current gaps in the literature to focus on employee well-being through leadership development. Moreover, the LEAD program will further our theoretical understanding of the mechanisms that effect employee well-being over time, by leveraging a longitudinal design to evaluate the

efficacy of the LEAD program. The rigorous evaluation of intervention studies that allows for theoretical understanding of the mechanisms that support effective leadership and well-being is critical because there are still more leadership training programs being carried out than are evaluated and reported in the literature, and a definite lack of leadership training programs focusing on well-being outcomes (Kelloway & Barling, 2010; Kelloway et al., 2012).

The LEAD program Design

The LEAD program integrates research on transformational leadership interventions with the format and design of a validated phone-based coaching intervention, the ABLE program (Day et al., 2014). The ABLE program is a 10- to 12-week phone-based coaching program designed to help employees manage the demands in their work and home lives through education, goal setting, skill application, and coaching support. There have been two iterations of the ABLE program, both of which successfully increased participant well-being (e.g., reduced stress, strain, and anxiety, and increased recovery experiences, and health behaviours) over a 12-month period (Day et al., 2014). The phone-based delivery system allows the program to reach a broad and geographically remote audience that often lack access to resources such as these types of training program. Participants are provided with a workbook containing activities and educational material on a variety of topics from coping strategies to goal setting to effective communication. These materials become a focal point for discussion with a coach, who talks with each participant individually once a week to discuss the material and addresses any challenges that the participant has faced that week. Through their goal setting and discussions with their coach, participants can concentrate on areas that are

particularly relevant to their personal goals (e.g., work-life balance), making the coaching experience unique for each participant.

The distance-based coaching format used in the ABLE program is well-suited to leadership development and to virtually delivered behavioural change programs more generally. The growing field of tele-based behavioural change interventions and virtual training address the challenges of service delivery to rural environments (Stamm, 2003), and meet the needs of geographically diverse work environments (Gartner, 2018; Noe, Clarke, & Klein, 2014). Free et al. (2013), in their systematic review of mobile-based health behaviour change, found that interventions using text messaging alone were successful in positively changing health behaviour related to medication compliance and smoking cessation. Moreover, Penate and Fumero (2016) found support for virtual-enabled treatment of anxiety disorders in their meta-review on the topic. Virtual-based therapy was similarly effective to traditional face-to-face delivery formats, and there were large effects for the efficacy of virtual-based therapy for anxiety disorders compared to non-treatment groups.

Although there has been a similar trend in virtual training in the workplace, there is an opportunity for empirical research and evaluation of the efficacy of such programs. Leadership development programs are well-suited to virtual delivery model. A virtual coaching environment models the current reality of leading teams who are geographically diverse, and where telecommuting is an everyday reality. Gallup indicates that between 2012 and 2016 there was a seven percent increase in the number of American workers who report working remotely 80%-100% of the time (31% of workers), and a nine percent decrease in those who report working remotely less than 20% of the time, both

statistics suggesting that workers are engaging in remote work more often (Mann & Adkins, 2017). Further to that, 2018 statistics suggest that 98% of organizations have leaders who lead virtual teams (i4cp, 2018). Given the growing virtual nature of leadership, having a training environment that reflects the virtual working style adopted by many organizations aligns with the principles of effective training design, and guidance on training transfer (Baldwin & Ford, 1988).

The phone-based format of the ABLE program coaching in combination with the educational material, goal-setting, and individual adaptability is well suited to leadership training, and it addresses some of the limitations of past leadership interventions. Specifically, building on the ABLE format: (a) the LEAD program allows leaders in more remote areas and smaller organizations (who may lack the resources for traditional leadership training) to participate; (b) leaders can schedule coaching sessions at a time that is convenient for them, and (c) the multiple measures across time allows examination of both the longitudinal effects of leadership training and the mechanisms that drive leader and employee well-being.

The LEAD Program Content

A number of leadership development interventions have been successful at developing transformational skills through education around what effective leadership looks like, followed by feedback from participants' leaders, direct reports, and peers (e.g., Barling et al., 1996). Well-being interventions (e.g., Day et al., 2014; Dimoff & Kelloway, 2018) have taken a similar approach by educating participants about coping skills and organizational resources available to support employee well-being. The LEAD program builds on what I have learned about effective training programs, and specifically

effective transformational leadership and employee well-being programs. Like previous leadership development programs leaders receive declarative knowledge (e.g., information about how transformational leaders behave) and procedural knowledge (e.g., opportunities to practice skills in their work contexts) through LEAD. LEAD includes factors to increase motivation and ownership of the process (e.g., creating personal goals and action plans) to ensure that it is interactive (e.g., role plays and dialogue over the phone to practice transformational leadership behaviours, and hands-on training exercises), to promote outcomes that are desirable, and to help the leaders develop goals that are achievable. LEAD extends more traditional leadership development programs both by creating greater accessibility and by mirroring emerging work practices by using distance-based coaching. LEAD also has intentional flexibility in the program content that allows leaders with support from their coach to emphasize content that addresses their individual development needs and interests. Personalized coaches tailor the content to each leader, while also holding them accountable to their program goals. Moreover, LEAD integrates content on employee and workplace well-being, including that leaders can affect the well-being of their direct reports.

Therefore, the goal of Study 1 was to design and validate a leadership program that uses a novel delivery method by: (1) integrating the existing literature on transformational leadership and employee well-being into content and activities for the LEAD program; (2) validating the practicality of the leadership development and employee well-being literature through interviews and a focus group with SMEs (who had either been involved in the development and facilitation of leadership development programs, or had participated in leadership development programs); (3) to integrate a

valid distance-based program methodology that would allow participants to maximize learning and behaviour change, and (4) to have the material reviewed for content clarity and fulsomeness.

Study 1: Methods

In addition to reviewing leadership and training literature to identify content and best practices, I used a four step development process to address the four study goals and to further develop the content of the LEAD program: (1) I conducted interviews with SMEs to identify and expand on best-practice for leadership development programs in practice, and to identify which specific elements of leadership development programs are uniquely effective; (2) I conducted qualitative analyses of SME interviews; (3) Based on this work, I developed the LEAD program materials, including content and activities; and (4) I conducted a content review of the LEAD material (see Table 1 for an overview of Steps 1-4; see Appendix A for more information about Steps 1 and 2).

Participants & Procedure

A thorough literature search was conducted to identify the successful and critical components of leadership development programs. This background research was used as the basis for developing the content for LEAD. Additionally, relevant theory and manual content from the ABLE program (e.g., coping strategies; Day et al., 2014) were adapted for LEAD and sessions were developed to cover other leadership topics, such as communication.

Step 1: SME Interviews. Step 1 involved a convenience sample of 9 subject matter experts (SMEs; 6 women, 3 men; mean age 33) from a variety of occupations and experiences were recruited for individual interviews until a saturation of insights was reached. An effort was made to ensure diversity of experiences (see Table 1) to elicit a

breadth of insights and exhaustive list of program elements that uniquely facilitate and inhibit leadership development. Four of the SMEs were experts in leadership development. One SME worked as a leadership consultant, one was an academic who researched leadership development, one held a dual academic-consultant role, and one had worked for a large organization developing their leadership program. The other six SMEs had experience as participants in leadership development programs through their workplaces. These six participants, who came from federal government and private organizations, had participated in several different leadership development programs and had been in a leadership role from 2 – 8 years.

All SMEs were invited to participate in interviews using a semi-structured format. The four SMEs with experience designing and facilitating leadership development programs and leadership assessments were asked questions that concentrated on identifying successful leadership development program components. The six SMEs who had experience as participants in leadership development programs were similarly asked about successful design components and what program elements facilitated or limited their ability to transfer their training to their work (see Appendix A for interview questions). One interview was conducted as a small focus group with two SMEs participating together. All other interviews were conducted individually. The interviewer used the questions in Appendix A as prompts for discussion, but each interview followed a unique path dictated by the SMEs. All insights were captured through detailed note taking and structured as much as possible around the probing questions. I continued recruiting and interviewing SMEs until there was a saturation of insights. Saturation was determined individually when SMEs were no longer able to produce new insights when

probed, and collectively when there were no new ideas produced by three consecutive SMEs.

Step 2: Qualitative Interview Analyses: Step 2 involved two female graduate students in I/O Psychology who had expertise in leadership development and training, psychometrics, and scale construction. Additionally, both had previous experience with thematic analysis.

Following the interviews qualitative thematic analysis on the interview notes was completed by a PhD student and myself (Lyons & Coyle, 2016). The other student was asked to independently categorize common training components into broad themes relating not only to leadership behaviours, but also to intervention design. The other coder was aware that the work would inform the development of a leadership development program. After independently grouping the unique design factors identified by the SMEs into broader themes, we came together to reach a consensus on the predominant themes. Following the alignment of the themes we independently aligned each of the design factors to the themes. Lastly, we discussed any of the design factors that were not aligned to the same theme and reached a consensus on their alignment (see Appendix B for thematic analysis).

Steps 3 & 4: Manual & Material Development, & Content Review. Step 3 involved myself and two other reviewers, a male graduate students in I/O Psychology and a female I/O Psychology faculty member, all of whom had expertise in leadership, training development, occupational health psychology, and psychometrics. Additionally, one male senior undergraduate psychology student was involved in reviewing the manual and materials for writing, content clarity, and general comprehension. This information

provided the foundation for the content development and program design of the LEAD program (see Appendix C for an overview of the LEAD phone-based sessions that were derived in Step 3 &4)**.**

I conducted the initial integration and review of the results from the thematic analysis, together with the literature review. Along with another graduate student and faculty member, I developed the content of the LEAD manual and program based on the results of the thematic analysis from SME interviews, existing relevant content from the ABLE program (Day et al., 2014), and what is known from the literature. Formalizing the material into program and manual formats was an iterative process to ensure that the content was relevant, concise, and accessible for a diverse set of leaders.

Lastly, in the final step, the SMEs reviewed the final ten-sessions of the LEAD program manual for content, accessibility, comprehension, and usability (see Appendix C for an overview of the topics and structure of the ten LEAD sessions). Specifically, reviewers were asked to ensure that: (1) the sessions covered the theoretical content identified by the literature search; (2) they addressed the ten sub-themes identified through the SME interviews, and (3) that there was no irrelevant or repetitive content. They were provided information based on guidelines for accessible writing for item development (e.g., Hinkin, 1998) to ensure that all of the content was readable, clear, relevant, and free of potential bias.

Table 1

LEAD program Development Process

LEAD program Development Step	**Sample**	**Sample Description**	**Appendix**
(1) SME Interviews SMEs were asked a number of questioned to	9	6 women; 3 men Mean Age: 33 (Range: 28-45)	A

elicit the behaviours that they felt were critical of effective leadership, as well as the training design components that they had experienced as most effective for leadership interventions.		Wide range of ages and occupations (e.g., federal government manager, leadership assessment consultant, I/O faculty member, private industry manager)	
(2) Qualitative Analysis of Interviews A graduate student and I were presented with the transcript of the interviews and asked to analyze the interviews into common themes.		1 women; myself A female graduate student in I/O Psychology with knowledge of the leadership and organizational healthy psychology literature and myself.	B
(3) LEAD Material Development Based on the qualitative analysis from Step 2, the review of existing literature, and relevant content from the ABLE program, the LEAD program manual was developed.	2	1 women; 1 man; myself Graduate students in I/O Psychology and 1 I/O Psychology faculty member with expertise in occupational health and leadership.	
(4) LEAD Material Review Members of the research team were asked to review each session of the LEAD manual for readability, clarity, grammar, potential bias, relevance and redundancy.	4	2 women; 2 men; myself Two I/O Psychology graduate students, 1 faculty members with expertise in occupational health, 1 psychology undergraduate student, and myself. The graduate students and faculty member were also involved in steps 2 and 3.	

Study 1: Results

Steps 1 and 2: SME Interviews & Qualitative Thematic Analysis. The semi-structured interviews were analyzed by an independent rater and me using content

analysis (Hinkin, 1998; Lyons & Coyle, 2016) to classify the interview notes into meaningful common themes that described training design factors. Each rater independently classified the 55 independent training design factors that were articulated as being critical to a successful leadership development program by SMEs. This was done by extracting any SME comment that described a training design factor. The two raters then came together to reach an agreement on the overall macro themes that are critical to successful leadership development and coaching programs (see Appendix B for the 55 design factors and thematic alignment).

Ten themes critical to leadership program design were identified by reviewing the frequency of common design factors. For example, one theme that surfaced was having "interactive program content", which emerged from 26 instances of unique statements around content such as "interactive", "active and engaging content", "consider their own ways how to apply the material". Overall, there were ten common themes based-on the frequency of design factors being mentioned that provide a guidance for what makes a successful leadership development program:

1. include a quantifiable leadership assessment pre- and post- program
2. involve interactive program content
3. are flexible for the participant
4. allow the leader time to incorporate the program content into their leadership role.
5. individualized to the leader(s) participating
6. facilitate the leader’s ownership over their development and behaviour
7. are not overly theoretical

8. include immediate feedback
9. include a maintenance plan
10. foster a degree of rapport with the leadership development coach.

Additionally, all SMEs strongly agreed that the transformational leadership behaviours were necessary for effective leadership development.

Steps 3 & 4: Material Development and Program Review. I used the ten themes identified in Step 2 to guide the development of the holistic LEAD program. Theme 1 was addressed by sourcing two valid and quantifiable leadership assessments - the Multifactor Leadership Questionnaire (Avolio, Bass, & Jung, 1995) and Global Transformational Leadership Scale (Carless, Wearing, & Mann, 2000) – to be used as both a coaching tool and to assess the efficacy of the LEAD program. Theme 2 was addressed by designing several interactive activities, such as self-assessments, role playing, and activities designed to elicit a greater understanding of direct reports. Additionally, the LEAD program was designed as 10 sessions spread over 10 weeks. The intention of this format was to give time to participants to practice the skills the LEAD program promotes – an interactive activity, which addressed themes 2, 3, and 4. Theme 5 was addressed by designing the program in a way where each participant was assigned an individual coach to guide and support them through the program. Therefore, the concentration and focus of the LEAD program would also be tailored to the individual development needs of each leader. Theme 6 was addressed in two ways; first through coach training to emphasize the criticality of each leader's ownership over their own success in the first session of the LEAD program (see Appendix D for more details on coach training), and second in the design of the program being highly influenced and

dependent on leaders' own development goals. Although all participants covered the content outlined in the LEAD manuals, the LEAD program did look purposefully different for each participant, illustrating their ownership over how to tailor the program for their unique needs. For instance, coaches used examples relevant to participants individual goals, were able to focus on certain pieces of content related to leaders' individual goals with greater depth and provided additional resources on topics of interest to a given leader. Theme 7 was addressed by consciously minimizing the complexity of the content, using real-world examples and including activities to illustrate theories and models instead of text. Theme 8 was addressed by incorporating both self-report and direct report feedback on transformational behaviours and having coaches debrief leaders on their feedback in the early sessions of the program. Theme 9 was addressed by participants creating a detailed action plan that they reviewed with their coach at the end of the LEAD program. Lastly, theme 10 was addressed by letting participants know that they could contact the program manager or faculty sponsor if they did not feel the coach was a good match for them, and they would be matched with a different coach (see Table 2 for a summary).

Table 2

Successful leadership development theme integration.

10 Themes	**Integration into LEAD**
1. Include a quantifiable leadership assessment pre- and post- program	Sourcing two valid and quantifiable leadership assessments
2. Involve interactive program content	Designing several interactive activities
3. Are flexible for the participant	Tailored focus to participants' needs

4. Allow the leader time to incorporate the program content into their leadership role.	Paced content over a span of 10 weeks
5. Individualized to the leader(s) participating	Individualized coaching
6. Facilitate the leader's ownership over their development and behaviour	Coaching and leader-derived goal setting
7. Are not overly theoretical	Reviews to minimize content complexity
8. Include immediate feedback	180 feedback of leadership behaviours
9. Include a maintenance plan	Detailed action planning was incorporated to support goal setting.
10. Foster a degree of rapport with the leadership development coach	Participants could contact program manager and receive a new coach if there were concerns over rapport

In addition to the integration of the ten themes, the LEAD program also was informed by the existing literature and previous training templates (e.g., ABLE). The final LEAD program was developed as a 10-week program with a manual that covered topics identified through a review of the relevant literature and through SME interviews as critical to leadership development and to fostering leader and employee well-being through leadership. (see Table 3 and Appendix C).

Five members of the research team, including the principal investigator, went through the ten sessions of the LEAD manual and made several suggested edits to ensure readability, accessibility, inclusion of all the critical content identified in the literature and SME interviews, and minimum redundancy of material and topics. All reviewers were provided with the ten themes that were identified through the analyses of the SME interviews, as well as critical content from the literature review.

Table 3

LEAD Program Session Content

Session	Session Content
1.	The LEAD program and You
2.	Transformational Leadership
3.	Goal Setting & Action Plan
4.	Using Your Training
5.	Goal Setting - Overcoming Barriers
6.	Action Plan Feedback
7.	Communication and Conflict
8.	Your Impact on Employee Well-Being
9.	Healthy Workers & Healthy Workplaces
10.	Leadership Behaviours Review and Maintenance

On completion of the review, and a calibrating discussion session, several clarifications were made throughout the manual based on the provided criteria: the wording and terminology was clarified to ensure consistency across the manual; level of language/wording was reviewed to ensure it was appropriate for the targeted group; and the content was reviewed to assure that the it was not overly theoretical or academic and that it would be appropriate for a diverse group of leaders. In addition to the criteria outlined prior to the review, there were also changes made to the program manual to ensure diverse representation of examples and photos throughout the physical participant manual.

Program Design and Content. In addition to the physical manual, there were two other elements that were critical to the participant experience throughout the LEAD program; (1) The phone-based individual coaching methodology, and (2) The timing of the phone-based coaching sessions to allow one to two weeks in between sessions. The phone-based coaching allows participants to have an individualized and tailored experience with the program content, a critical component identified by the SMEs. This is addressed by the coach having discussions with the leaders after their 180 assessment results to collectively decide on the program elements that are most relevant to their development opportunities. Although all program content was covered, the focus of goal setting and the depth of discussions on each topic varied based on the individual priorities of the leaders. Additionally, scheduling coaching conversations with a one to two-week gap provided participants the time to apply the skills they learned, and time to make behavioural changes immediately and discuss any challenges or barriers faced in this application with their coach. This pacing was determined based on successful experience of similar pacing with the ABLE program, and the pacing was reinforced by time-bound action plans that supported individual leader goals. See table 4 for an overview on the training components designed to target specific behavioural change.

Table 4

Link Between the Training Components and Desired Behavioural Change

Goal	Training Component
Awareness and motivation: Gaining leader awareness about effective leadership behaviours, and their potential for change Gaining leader awareness about healthy workplace practices (including self- and employee well-being) and their potential for change and influence	Each coaching session contains an overview of best-practice and insights about a topic critical to effective leadership. Leaders are privy to their direct reports' assessment of their current leadership behaviour highlighting potential for change. Several activities are designed to facilitate leader reflection on the psychological health of their workplace and their direct reports.
Self-efficacy: Providing tools and resources that allow leaders to practice and engage in new behaviours	Leaders are provided with time to self-reflect on their behaviours and to practice new behaviours in real time. This active practice is coupled with support from their personal coach on how to overcome any barriers faced to build and maintain leader self-efficacy.
Increased behavioural expectations: Helping leaders goal set and action plan to facilitate deliberate behavioural change	Leaders are debriefed on the results of their assessment at the beginning of the program to raise awareness of their current leadership behaviour. Leaders set SMART goals and action plans so that they have a clear path on how to apply any behavioural changes in their environment, and a coach to be accountable to.
Deliberate practice/Interactive content	Leaders engage in weekly activities designed to facilitate the application of knowledge. Activities varied from considering what "good" leadership looks like, to finding out what aspects of their employees' roles are the most and least engaging for them. Designed time between coaching sessions, generally one week, where leaders practice their skills and work towards their goals and action plan.

Study 1: Discussion

The four-steps of content development resulted in a program design and material for the LEAD program that leverages best practices for leadership development and training transfer and includes practical insights from SMEs. The LEAD program follows a structure of increasing awareness, feedback, goal setting, and critical experiences, all supported by one-on-one coaching. By identifying many of the success factors and barriers to previous leadership development programs (e.g., immediate feedback, program flexibility), the LEAD program was designed to incorporate elements known to facilitate leadership development and mitigate challenges.

Study 1 extends the current literature by creating a leadership development program that focusses not only on leadership development, but also asks leaders to consider their own well-being, and the effect of their leadership on their direct reports' work experience and personal well-being. The LEAD program was designed to integrate best-practice knowledge in leadership development and training transfer by allowing participating leaders time to practice their skills while still receiving support from a dedicated coach.

Limitations & Future Directions

Study 1 involved the participation of several SMEs to identify the key aspects of effective leadership development programs and how leadership interventions could be used as an intervention for employee well-being. A convenience sample was used to recruit the SMEs, which may represent a biased perspective. All SMEs were well educated (70% had graduate degrees), employed, and had white-collar professions. Although many of the SMEs had facilitated leadership development activities in several industries, the most represented perspective was doing so with professional groups.

Future development activities would benefit from the inclusion of a broader range of leadership development experiences among SMEs.

A primary focus of the current research is on leadership development with the goal of improving employee (both leader and direct report) well-being. Although all of the SMEs had significant knowledge when it came to leadership development, none of their experience shared this explicit purpose. Therefore, it is possible that the critical program elements identified as critical for leadership development programs designed to drive performance are insufficient to positively effect employee well-being. This limitation was mitigated by including and aligning content in the LEAD program to other interventions that were successful at positively affecting employee well-being (i.e., ABLE program). Moreover, the critical mechanisms that support the positive relationship between transformational leadership and employee well-being from the existing body of literature (e.g., self-efficacy; leader behaviour modeling) were incorporated in the LEAD program through coach training and the content of the LEAD manual.

Conclusion

The goal of Study 1 was to develop and validate the content for the LEAD program. Study 2 furthers this work by addressing two goals: (1) to evaluate and validate the efficacy of the LEAD program, and (2) to further the theoretical knowledge of the mechanisms that, allow transformational leadership to positively affect (i) leader, and (ii) direct report well-being. The first goal, of program evaluation, was addressed by following Kirkpatrick's model of training evaluation (Kirkpatrick, 1996), while the second goal was addressed through the longitudinal research design and multi-source data collection strategy. Together, the program evaluation and research design of Study 2

furthers the literature on transformational leadership development and the theoretical understanding of leadership development as an intervention for employee well-being.

STUDY 2

Based on the work conducted in Study 1, the LEAD program was developed as a ten-week phone-based transformational leadership development program. The coaching sessions were designed to allow the coaches help participants set goals related to their leadership behaviours, create manageable and detailed action plans for implementing their goals, and work with participants to address any barriers that they faced as they progress through the program. Additionally, the program was designed such that the coaches challenge participants to apply the various topics covered in LEAD to their leadership role in an immediate and ongoing fashion.

Therefore, I extended the work from Study 1 in Study 2 and examined the validity of the LEAD program through a longitudinal (three time periods over nine months) wait-list control design. I also investigated the mechanisms targeted by the LEAD programs, which in turn, may have positive effects on employee well-being. I used Kirkpatrick's model of training evaluation (Kirkpatrick, 1996) as the framework for evaluating the efficacy of the LEAD program. The LEAD program design is well suited to the Kirkpatrick model given the focus on behavioural change and the effect behaviours can have on more distal leader and direct outcomes.

Kirkpatrick's Model of Training Evaluation

Kirkpatrick (1996) identified four levels of criteria to effectively evaluate training programs: (1) reaction to training; (2) learning from training; (3) behaviour change; and (4) results of training. Kirkpatrick's model remains the formative one for training

development and evaluation. The first level outlined by the model, reaction, refers simply to the participants' feelings about the training (Kirkpatrick, 1996). Participant reactions to training are a critical component of training evaluation and of behaviour change. Positive reactions to training tend to increase participant motivation and positive attitudes, which are both key components of effective behaviour change after training (Burke & Hutchins, 2007). The second level, learning, involves objectively assessing the extent to which participants understand and absorb the key components of the training. Kirkpatrick (1996) suggested that learning should be evaluated using quantifiable assessments, incorporating before-and-after approaches to determine the extent of learning, and including a control group for methodological rigor.

Although learning is critical to training success, it is often not the end goal. The main goal of training programs, and particularly workplace training programs, is the successful application of learning (i.e., behaviour change), which is captured by Kirkpatrick's third level. That is, it is important to evaluate the key behaviours the training is targeting before and after training, using objective multi-rater assessments and a control group in order to truly demonstrate whether the training was successful in changing the targeted behaviours in the expected way. Kirkpatrick's final level of training evaluation is results. Evaluating the results of the training goes one step further than looking at specific behaviour change and focuses on organizational outcomes. Often organizations are looking for an improvement in their organizational functioning through increased productivity, decreased absenteeism, or even an increase in the well-being of their employees, which may in turn affect more distal organizational outcomes. Therefore, I used the Kirkpatrick model of training evaluation to determine the efficacy

of the LEAD program, both in terms of its effect on leaders' transformational leadership skills and behaviours and on leaders' and direct reports' well-being.

Leadership and Employee Well-Being

Leaders have a significant effect on their direct reports well-being (e.g., Kelloway & Barling, 2010; Montano, Reeske, Franke, & Hüffmeier, 2017). Transformational leaders are particularly well-suited to positively affect direct report well-being both by being adept at modeling the behaviours that they want and expect from others, and through their motivational and individually-focused interactions that increase direct reports' trust in leader and self-efficacy (Arnold, 2017; Kelloway & Dimoff, 2017; Munir et al., 2012; Nielsen et al., 2009). In a systematic review of the literature Skakon, Nielsen, Borg, & Guzman (2010) found 12 of the 13 studies they identified demonstrated a significant positive relationship between transformational leadership and direct report affective well-being.

Although the interest in transformational leadership and direct report well-being has been growing over the last several decades, there has been significantly less focus on the effect of transformational leadership on leaders' own well-being. The available research suggests that transformational leaders experience lower levels of negative indices of well-being such as burnout (Harms et al., 2017). Leaders' depressive symptoms and anxiety, as well as maladaptive health behaviours in the form of workplace alcohol consumption each predicted lower transformational leadership (Byrne et al, 2014). Moreover, in a meta-analysis of the research on leader well-being Kaluza et al. (2019) found a significant relationship between constructive leadership styles, including transformational leadership, and leader well-being. Furthermore, relational- and change-

oriented leadership styles, of which transformational leadership is the most widely studied, accounted for the most variance in leader well-being. Although confidence in the relationship between well-being and leadership is established, the directionality of the relationship remains unclear (Kaluza et al., 2019). Transformational leadesrhip behaviours in and of themselves can be a resource for leaders, which the conservation of resouces theory (Hobfoll, 1989) suggests would predict lower negative indices of well-being. Moreover, leaders who focus on and improve their own well-being will be better suited to both model well-being behaviours (e.g., effective coping strategies) and have additional personal resources to engage with their direct reports in a more transformational way.

As such, transformational leadership has been identified as an area of interest in occupational health intervention work (e.g., Kelloway & Barling, 2010). Therefore, the second goal of Study 2 is to further our understanding of the leader characteristics that affect leader and direct well-being through a longitudinal research design.

LEAD Program Design

The design of the program allows for several occasions to collect data from participating leaders, their direct reports, and the coaches of the LEAD program (see Figure 1). Specifically, the program design allows for three separate opportunities for leader feedback, as well as weekly data collected during 5 of the coaching sessions. Direct report data was collected prior to and after their leader participate in the LEAD program. Lastly, coaches were asked to provide their feedback on the leaders who they coached at the end of the 10-weeks of the LEAD program. Both the number of

measurement occasions and the multi-source measurement allows for a fulsome evaluation of the LEAD program through Kirkpatrick's model of evaluation.

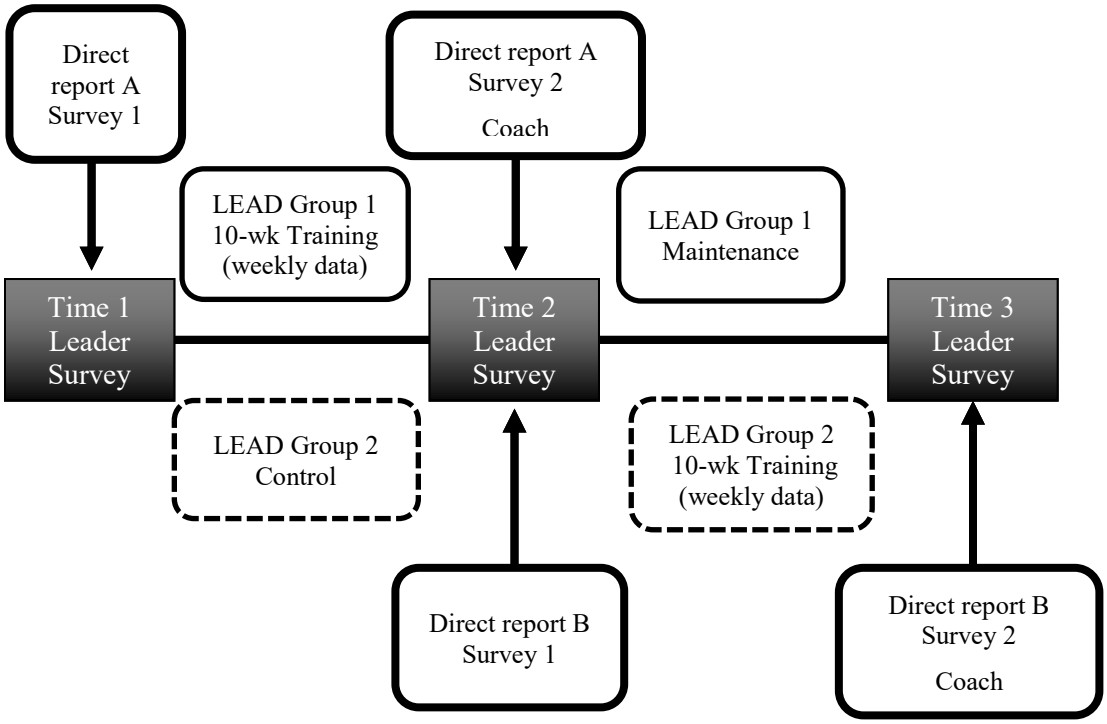

Figure 1. Overview of the LEAD design.

Research Goals and Hypotheses

To address the first level of Kirkpatrick's (1996) training evaluation model (i.e., participants' reactions of the LEAD program), I assessed leaders' reactions to the LEAD program after their participation in the program. Specifically, leaders assessed the progress they made throughout LEAD, and considered the areas in which they felt they made the most and least progress. Leaders were asked how helpful they found specific aspects of LEAD (e.g., phone-based coaching method, goal setting), and to list any specific resources or activities that they found particularly helpful.

Research Goal 1: To understand how participants perceive their experience of participating in the LEAD program.

To better understand leaders' reaction to the LEAD program, the LEAD coaches were asked to report on their assessment of leaders engagement in the program. Coaches' perceptions of engagement provide an additional assessment of the extent to which a leader fully engaged with the program content and materials, and coaches are in a unique position to understand a leaders' engagement in the program relative to other participants.

Research Goal 2: To understand how coaches perceive the leaders' level of engagement in the LEAD program.

The second level of Kirkpartick's (1996) model is the degree of learning that happens throughout training. To address learning, participants were evaluated on their knowledge of effective leadership behaviours before and after training. Unlike the measures of leadership and well-being, learning was only assessed at two time-points, before and after training. This decision was made to keep the assessment of learning restricted to a leader's time in the LEAD program. To assess Level 2 outcomes, I hypothesized that:

Hypothesis 1: Compared to their responses prior to the LEAD program, leaders are able to provide more examples of effective transformational leadership behaviours after participating in the LEAD program.

Hypotheses 2-4 focus on level three of Kirkpatrick's (1996) model, assessing whether there is a significant change in participants' leadership behaviour after the LEAD program and examining some of the psychological mechanisms (i.e., self-efficacy, and motivation) that may explain this change. There were three separate measurement occasions that both wait-list control and the first intervention group participated in, as

well as assessments for measures of transformational leadership and leadership self-efficacy during 5 of the 6 coaching weeks.

Hypothesis 2: The LEAD program has a positive effect on leaders' self-reported (a) transformational leadership behaviours, (b) self-efficacy, and (c) well-being (i.e., reduced burnout, stress, and strain).

That is, significant time by group interactions for each analysis are expected, such that compared to the wait-list control group (Group 2), the initial intervention group (Group 1) will report increased levels of transformational leadership behaviours, self-efficacy, and decreased levels of stress, strain, and burnout between Time 1 and Time 2. It is expected that these changes will be maintained across Time 3 for Group 1, while Group 2 will have a similar pattern of positive changes between Time 2 to Time 3 (i.e., before and after their LEAD training sessions).

To better understand the process of change in transformational leaders were asked to report on their leadership on 5 of their 6 coaching sessions.

Hypothesis 3: There will be a progressive increase in transformational leadership across the 10-weeks of the LEAD program.

In addition to the effect of LEAD on leaders themselves, direct reports' assessment of their leader's leadership behaviour was also assessed. Thus, I hypothesized that:

Hypothesis 4: Compared to their ratings pre-LEAD, direct reports will rate their leaders as being higher in transformational leadership after participation in the LEAD program.

Lastly, Kirkpatrick's (1996) fourth level of training evaluation will be assessed by looking at the effect that the LEAD program on direct reports' well-being. Although Kirkpatrick's fourth level of evaluation is often reserved for measures of performance, the key targeted area for LEAD is direct reports' well-being. Therefore, it is hypothesized that:

> **Hypothesis 5:** Transformational leadership (self-report and direct report ratings pre-LEAD) is a significant predictor of well-being at (a) pre-LEAD and (b) post-LEAD.

In addition to the evaluation of the LEAD program, I also wanted to understand the underlying mechanisms that may explain the hypothesized increases in leaders' transformational leadership and the relationship between transformational leadership and direct reports' well-being. Self-efficacy and motivation have both been identified as critical attributes to training transfer (see Burke & Hutchins, 2007 for a review), and examining their role in leadership behaviour change will help clarify the underlying process. Therefore:

> **Hypothesis 6:** The increases in transformational leadership are moderated by leaders' pre-LEAD levels of (a) leadership self-efficacy and (b) LEAD motivation.

Direct report self-efficacy and trust in leader have been identified as outcomes of transformational leadership, which subsequestly explain improvements in employee well-being (e.g., Kelloway et al., 2012, Nielsen & Munir, 2009). Therefore, an increase in transformational leadership should lead to increases in direct report well-being, which may be explained by the actual change in self-efficacy and trust and leader. Therefore:

Hypothesis 7: Increases in direct report (a) self-efficacy, and (b) trust in leader mediate the relationship between increases in direct report ratings of their leaders' transformational leadership and increases in their own self-reported well-being (i.e., decreases in stress, strain, and burnout).

Study 2 Methods

Participants

Leaders. There were 59 participants (35 women; 24 men) who completed the LEAD program from nine organizations (Phase 1 = 7; Phase 2[1] = 3, one of which also participated in Phase 1). Participating leaders were assigned to either an intervention or wait-list control group over two Phases of the LEAD program. The first Phase of the LEAD started in January 2016 (n = 39) and the second Phase started in October 2016 (n = 20). When possible, participants were randomly assigned to conditions: However, there were two organizations in which random assignment was not possible due to organizational constraints (e.g., one organization required all their leaders to have the training starting in January 2016; i.e., Group 1 of Phase 1) and/or individual participant timing constraints. The first Phase of the program was supported by four trained coaches, and the second Phase by two trained coaches. One coach was internal to an organization whose participation was contingent on having an internal coach trained (see Appendix D for an overview coach training). Participants from that organization were asked their preference for an internal or external coach. Aside from those participants who requested an internal coach, all other participants were randomly assigned to coaches based on coach capacity. Overall, there was at least 73% random assignment (see Table 5 for

[1] Phase 2 of data collection was pursued to increase the sample size of the study.

participant demographics, Table 6 for participant demographics by organization, and Appendix E for participant demographics by LEAD coach).

Post hoc independent t-tests analyses suggested that leaders who were assigned to Group 1 of the LEAD program were significantly older (M = 46.10, SD = 8.62) than leaders assigned to Group 2 (M = 41.04, SD = 8.97) $t(57) = 2.29$, $p = .03$. A one-way ANOVA analyses on participant demographics by organization revealed a significant differences in leaders' tenure with their organization $F(8, 50) = 3.45$, $p = .026$. Post hoc independent t-tests identified the significant difference being that leaders of a healthcare organization (M = 119.00, SD = 78.03) had significantly higher tenure than those from a non-profit organization (M = 31.00, SD = 22.09), and a technology organization (M = 31.20, SD = 61.11). A one-way ANOVA on participant demographics by coach revealed a significant differences between the number of direct reports leaders had $F(3, 54) = 3.14$, $p = .033$. Post hoc independent t-tests identified the significant difference being between the leaders of Coach B and Coach E, where Coach B's leaders had significantly more direct reports (M = 58, SD = 81) than Coach E (M = 9, SD = 10) $t(57) = 2.29$, $p = .03$. Because Coach D only coached a single participant, they were excluded from post-hoc analyses.

Leader Withdrawals. There were 15 leaders who withdrew (7 women; 8 men) after completing the initial survey but before the first LEAD coaching session, and 13 leaders (8 women; 5 men) withdrew from the LEAD program after the coaching sessions began (9 withdrew before Week 5; 4 withdrew between weeks 5 and 10; see Appendix F for a complete overview of the leaders who withdrew from the study).

Table 5.

Participant Demographics by LEAD Group (Group 1: first intervention group; Group 2: wait-list control group) and LEAD Phase (Phase 1: Jan 2016; Phase 2: Oct 2016) N = 59

	Group 1	Group 2	Overall
Phase 1	***n* = 21** (15 women; 6 men) Random Assignment: 62% Age: 45.90 (9.88) Tenure (mo): 63.76 (58.04) Direct Reports: 39 (68) Prev Training: 2.48 (2.94) Relationship: 71% married Education: 67% college+ Organizations: 5 Industry: 38% Health Care; 33% Non-Profit	***n* = 18** (12 women; 6 men) Random Assignment: 56% Age: 41.56 (9.32) Tenure (mo): 54.28 (54.93) Direct Reports: 28 (27) Prev Training: 2.33 (1.61) Relationship: 67% married Education: 72% college+ Organizations: 5 Industry: 44% Financial Services; 39% Health Care	***n* = 39** (27 women; 12 men) Random Assignment: 59% Age: 43.90 (9.75) Tenure (mo): 59.38 (56.09) Direct Reports: 34 (53) Prev Training: 2.41 (2.39) Relationship: 69% married Education: 69% college+ Organizations: 7 unique Industry: 39% Health Care; 23% Non-Profit
Phase 2	***n* = 10** (4 women; 6 men) Random Assignment: 100% Age: 46.50 (5.52) Tenure (mo): 51.40 (61.46) Direct Reports: 20.60 (21.77) Prev Training: 1.30 (0.48) Relationship: 80% married Education: 40% college+ Organizations: 3 Industry: 50% Technology; 30% Non-Profit	***n* = 10** (4 women; 6 men) Random Assignment: 100% Age: 40.10 (8.71) Tenure (mo): 30.00 (48.06) Direct Reports: 8 (9) Prev Training: 1.00 (1.25) Relationship: 70% married Education: 60% college+ Organizations: 3 Industry: 50% Technology; 40% Non-Profit	***n* = 20** (8 women; 12 men) Random Assignment: 100% Age: 43.30 (7.82) Tenure (mo): 40.70 (54.81) Direct Reports: 14 (17) Prev Training: 1.15 (.93) Relationship: 75% married Education: 50% college+ Organizations: 3 unique Industry: 50% Technology; 35% Non-Profit
Overall	***n* = 31** (19 women; 12 men) Random Assignment: 74% Age: 46.10 (8.62) Tenure (mo): 59.77 (58.42) Direct Reports: 33.10 (57.47) Prev Training: 2.10 (2.48) Relationship: 77% married Education: 58% college+ Organizations: 7 unique Industry: 26% Health Care; 32% Non-Profit; 16% Technology	***n* = 28** (16 women; 12 men) Random Assignment: 71% Age: 41.04 (8.97) Tenure (mo): 45.61 (53.01) Direct Reports: 21.04 (24.20) Prev Training: 1.86 (1.60) Relationship: 68% married Education: 68% college+ Organizations: 7 unique Industry: 29% Financial Services; 25% Health Care	**N = 59** (35 women; 24 men) Random Assignment: 73% Age: 43.69 (9.08) Tenure (mo): 53.05 (55.90) Direct Reports: 27.37 (44.92) Prev Training: 1.98 (2.10) Relationship: 72% married Education: 63% college+ Organizations: 9 unique Industry: 27% Non-Profit; 25% Health Care

Note. Prev Training = Previous Training.

Table 6.

Demographics by Organization, and LEAD Group (Group 1: first intervention group; Group 2: wait-list control group N = 59

Organization	Group 1	Group 2	Overall
Phase 1			
1. Healthcare	***n* = 5** (5 women) Tenure: 54.00 (18.43) Direct Reports: 52 (44)	***n* = 6** (5 women; 1 men) Tenure: 55.83 (76.20) Direct Reports: 40 (31)	***n* = 11** (10 women; 1 men)
2. Healthcare	***n* = 3** (2 women; 1 men) Tenure: 24.00 (5.92) Direct Reports: 47 (47)	***n* = 1** (1 woman) Tenure: 24.00 Direct Reports: 75	***n* = 4** (3 women; 1 men)
3. Healthcare	***n* = 2** (2 women) Tenure: 72.00 (67.88) Direct Reports: 4 (4)		***n* = 2** (2 women)
4. Retail	***n* = 6** (1 women; 5 men) Tenure: 119.00 (78.03) Direct Reports: 62 (117)		***n* = 6** (1 woman; 5 men)
5. Telecom		***n* = 1** (1 man) Tenure: 36.00 Direct Reports: 35	***n* = 1** (1 man)
6. Financial Services		***n* = 8** (4 women; 4 men) Tenure: 58.63 (54.52) Direct Reports: 10 (10)	***n* = 8** (4 women; 4 men)
7. Non-Profit	***n* = 5** (5 women) Tenure: 27.80 (13.94) Direct Reports: 8 (4)	***n* = 2** (2 women) Tenure: 55.50 (4.95) Direct Reports: 40 (28)	***n* = 14** (13 women; 1 man)
Phase 2	***n* = 3** (2 women; 1 man) Tenure: 25.00 (34.66) Direct Reports: 9 (11)	***n* = 4** (4 women) Tenure: 26.75 (23.16) Direct Reports: 16 (10)	
8. Technology	***n* = 5** (2 women; 3 men) Tenure: 55.40 (83.14) Direct Reports: 13 (11)	***n* = 5** (5 men) Tenure: 7.00 (5.15) Direct Reports: 3 (2.24)	***n* = 10** (2 women; 8 men)
9. Emergency Services	***n* = 2** (2 men) Tenure: 81.00 (4.24) Direct Reports: 56 (21)	***n* = 1** (1 man) Tenure: 158.00 Direct Reports: --	***n* = 3** (3 men)

Note. Tenure is measured in months.

Post hoc analyses identified no difference between leaders who withdrew from the program after beginning the LEAD program and those who completed the LEAD

program on any of the key study variables, nor any demographic differences. However, there were differences between leaders who completed the LEAD program and those who withdrew from the study before starting their coaching sessions. Those who withdrew before the training started had previously participated in more training programs (LEAD: M =1.98, SD = 2.10; No LEAD: M = 4.67, SD = 7.71), had lower motivation to participate in the LEAD program (LEAD: M =4.08, SD = 0.42; no LEAD: M =3.74, SD = 0.44), and had a lower level of affective commitment to their organization (LEAD: M =4.02, SD = 0.73; no LEAD: M =3.45, SD = 0.91).

Direct Reports. Participating leaders were asked to send an invitation to all their direct reports, inviting them to provide feedback regarding their leadership through an anonymous survey link. In total there were 460 direct reports (65% women; 35% men) with an average age of 42.84 (range =19-70 years) who completed a single LEAD survey across the three time points of the study. The group of 460 direct reports were educated (71% had completed at least a college degree) and had an average tenure of 8 years (range = 1 month – 40 years) at their current organization. Most of the direct reports (39%) were in the health care industry, and 42% of all direct reports were part of a union (see Table 7 for direct report demographics by LEAD Group and Phase). Of the 460 direct reports who completed a survey, 263 (158 Group 1, 105 Group 2) completed a pre-survey, and 50 of these individuals (32 from Group 1, and 18 from Group 2) completed both the pre- and post-survey.

Post hoc analyses indicated that there were significant differences between the direct reports whose leader participated in Group 1 vs. Group 2 of the program. Direct reports of Group 1 leaders had a significantly longer tenure of their current organization

(mean = 122.49 months, SD = 114.14) compared with Group 2 leaders (mean = 54.95 months, SD = 78.91). Group 2 direct reports were significantly more educated (78% post-secondary graduates) compared to Group 1 direct reports (65% post-secondary graduates), and there were significantly more direct reports who were union members in Group 1 (59%) than in Group 2 (24%).

Table 7.

Direct Report Demographics by Leader Participation in LEAD Group (Group 1: first intervention group; Group 2: wait-list control group) and LEAD Phase (Phase 1: Jan 2016; Phase 2: Oct 2016) N = 460

	Group 1	Group 2	Overall
Phase 1	***n* = 211** (154 women; 57 men) Age: 44.41 (11.33) Tenure (mo): 137.19 (118.88) Absenteeism (days): 2.31 (4.16) Education: 63% college+ Union Membership: 72% Industry: 59% Health Care; 29% Retail	***n* = 137** (92 women; 45 men) Age: 42.12 (10.16) Tenure (mo): 63.08 (89.66) Absenteeism (days): 1.50 (2.90) Education: 75% college+ Union Membership: 32% Industry: 48% Financial Service; 37% Health Care	***n* = 352** (246 women; 102 men) Age: 43.46 (10.87) Tenure (mo): 106.85 (113.43) Absenteeism (days): 2.13 (3.93) Education: 68% college+ Union Membership: 55% Industry: 50% Health Care; 19% Financial Service
Phase 2	***n* = 50** (17 women; 33 men) Age: 41.05 (9.75) Tenure (mo): 63.39 (65.81) Absenteeism (days): 1.00 (1.47) Education: 74% college+ Union Membership: 6% Industry: 58% Technology; 30% Non-Profit	***n* = 56** (25 women; 31 men) Age: 40.39 (10.92) Tenure (mo): 35.80 (38.62) Absenteeism (days): 0.83 (0.75) Education: 86% college+ Union Membership: 5% Industry: 70% Non-Profit; 29% Technology	***n* = 106** (42 women; 64 men) Age: 40.67 (10.33) Tenure (mo): 48.67 (54.58) Absenteeism (days): 0.98 (1.40) Education: 80% college+ Union Membership: 6% Industry: 51% Non-Profit; 43% Technology

Continued below.

Table 7 (continued)

Overall	***n* = 261** (171 women; 90 men) Age: 43.84 (11.13) Tenure (mo): 122.49 (114.14) Absenteeism (days): 2.02 (3.78) Education: 65% college+ Union Membership: 59% Industry: 48% Health Care; 23% Retail	***n* = 193** (117 women; 76 men) Age: 42.84 (10.79) Tenure (mo): 92.77 (105.18) Absenteeism (days): 1.90 (3.59) Education: 78% college+ Union Membership: 24% Industry: 34% Financial Service; 26% Health Care	***n* = 460** (288 women; 166 men) Age: 42.84 (10.79) Tenure (mo): 92.77 (105.18) Absenteeism (days): 1.90 (3.59) Education: 71% college+ Union Membership: 42% Industry: 39% Health Care; 19% Non-Profit

Note. In Phase 1 of the LEAD program, 6 direct report responses were not categorized by the Group their leader participated in: 2 responses were uncategorized because the respondents did not identify their leader, and 4 respondents were direct reports of leaders who withdrew before beginning the coaching sessions.

Procedure

Leaders were informed of the opportunity to participate in LEAD through their employer (nine unique organizations participated). Leaders who were interested in participating contacted the research team directly via email. Using a wait-list control design, leaders were assigned (60% random assignment) to either the first or second intervention group (Group 1 and Group 2) during Phase 1. To collect more data a second iteration of the LEAD program (i.e., Phase 2) occurred after the completion of Phase 1. In Phase 2, 100% of leaders were randomly assigned to the first or second group. The study procedure was identical for both phases, but they occurred at two different times.

Leaders completed three surveys: The first survey (Time 1) was completed prior to any coaching sessions. The second survey (Time 2) was completed 10-weeks after the Time 1 survey, once the first intervention group had completed the LEAD program, and prior to the second group beginning their LEAD sessions. The third survey (Time 3) was completed 10-weeks after Time 2, once the second intervention group had completed the

LEAD program and three-months after the first intervention group had completed the program. Additionally, leaders were asked to send their direct reports a survey to complete assessing their participating leader's transformational leadership skills and their own well-being at all three-time points.

Leaders sent out requests to their direct reports to ask whether they would be willing to provide information on their leader's leadership style as well as reporting on their own well-being. They were given a secure link to an on-line survey and provided with the leader's identifier (to match each direct report's data to their leader's data). Each direct report completed two surveys in total, before and after their leader went through the LEAD program. Participation was confidential and anonymous, such that neither the researchers nor the participating leaders knew who had or had not responded. At the end of the direct-report survey there was the option for direct reports to provide their email addresses to be directly contacted by the research team for the post-LEAD survey. However, only 18% of direct reports chose to provide their email at the pre-LEAD survey for Group 1, and 31% for Group 2.

Following the completion of the first survey, leaders assigned to Group 1 began their 10-weeks of individualized coaching. Group 2 leaders began the 10-week intervention after the second survey had been completed. Prior to beginning the LEAD program, leaders in that group were sent the LEAD manual containing the topics and information covered in each of the 10-week sessions. Leaders in Group 2, who were acting as a control group for Group 1, did not receive a manual until just before beginning their 10-week sessions, acting as a wait-list control group. Leaders also completed short weekly surveys on their transformational leadership behaviours and their

goal setting progress during the 10 weeks of the program. All leaders were contacted by their coach four weeks after completing the LEAD program as a brief booster session. Booster sessions were informal and served as an opportunity for leaders to discuss any challenges they faced with maintaining their goals since the program ended (see Figure 1 for an overview of the LEAD procedure, and Appendix C for content of LEAD program).

Measures

Leader Measures

Leaders completed three surveys over a 6-month period, as well as short weekly surveys during the 10-week coaching program.

LEAD Reactions. Leaders were asked to rate their overall progress throughout the LEAD program on a 5-point scale from 0 (no progress) to 4 (excellent progress). Leaders were asked to rate the degree to which they progressed on specific program areas/aspects. They also were asked to rate the specific aspects of the LEAD program they found the most helpful (e.g., talking with their coach, the LEAD manual). Using a 5-point Likert scale (1=strongly disagree- 5=strongly agree), they rated the extent to which their leadership skills have improved, whether others have mentioned positive changes in their leadership behaviour, and whether they would recommend the LEAD program to others. Finally, leaders were asked for their suggestions on how the LEAD program could be improved in the future.

Transformational Leadership. One of the most widely used tools to measure transformational leadership is the Multifactor Leadership Questionnaire (MLQ; Avolio, Bass, & Jung, 1995). The MLQ has been used in both research (e.g., Kelloway et al., 2012; Kranabetter, & Niessen, 2017) and practice (e.g., Kirkbride, 2006; Ratiu, David, &

Baban, 2016). However, the theoretical factor structure of the MLQ in research is inconsistent (Tejeda et al., 2001). Because of this inconsistency, transformational leadership has often been used as a single factor in modern research (e.g., Frieder et al., 2018). In addition to challenges with the factor structure, the MLQ is cumbersome for measuring transformational leadership on a more frequent basis or when there are concerns of overburdening leaders. Newer measures, such as the Global Transformational Leadership scale (GTL; Careless, Wearing, & Mann, 2000) have addressed the limitations of the MLQ, and have been successfully used in research contexts (e.g., Gilbert & Kelloway, 2018). However, the MLQ remains very useful as a coaching and feedback tool (Carless, Mann, & Wearing, 1998) because it can be used to provide detailed feedback to leaders. It clearly operationalizes the specific areas of transformational leadership that are development opportunities and strengths making it particularly adept for transformational leadership development initiatives.

Therefore, I used the MLQ as a coaching tool to provide leaders' feedback from their direct reports contrasted to their self-reported feedback. That is, I used the 45-item Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1997) to allow leaders to rate their own leadership behaviours and direct reports to rate their leaders' across the 4 dimensions to provide in-depth feedback on specific transformational leadership behaviours. However, I also assessed leadership using the more concise GTL (Carless, et al., 2000) to evaluate the changes in transformational leadership behaviours (leaders' self-ratings and direct reports' ratings of their leader) over the course of the LEAD program.

For both scales, leaders indicated the frequency that each statement fit their leadership style using a 5-point Likert scale ranging from 0 (rarely or never) to 4 (frequently, if not always). Higher scores represent more frequent engagement in transformational leadership behaviours (e.g., "I help others develop their strengths"). Leaders also provided a weekly rating on the frequency that they engaged in transformational leadership behaviours during LEAD using the GTL scale (Carless et al., 2000). The MLQ had an internal reliability[2] of α = .86 at Time 1, α = .83 at Time 2, and α = .87 at Time 3. The GTL had an internal reliability of α = .85 at Time 1, α = .78 at Time 2, and α = .85 at Time 3.

Leadership Self-efficacy. Leadership self-efficacy was measured using seven items from the GLT (Carless et al., 2000). Leaders rated how confident they were in their ability to execute leadership behaviours using a 5-point Likert scale, ranging from 0 (cannot do) to 4 (certainly can do; as recommended by Bandura (1997) when dealing with measures of self-efficacy). The internal reliability of the scale was α = .81 at Time 1, Time 2, and Time 3.

Motivation for LEAD. Leaders' motivation for the LEAD program was measured using two items adapted from Noe and Schmidt (1986). Specifically, leaders were asked to indicate the extent they agree with the following statements: "I am willing to exert considerable effort to improve my skills throughout the LEAD program", and "I will try to learn as much as I can from LEAD" using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The correlation between the two items was *r* = .56 at Time 1, and *r* = .76 at Time 2.

[2] Internal reliabilities for the scales included in the leader surveys were calculated using all leader responses at each time point regardless of LEAD group.

Burnout. Burnout was assessed using the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996). The MBI is a 16-item scale measuring three facets of burnout: emotional exhaustion (e.g., I feel emotionally drained from my work), cynicism (e.g., I have become less interested in my work since I started this job), and professional efficacy (e.g., I feel exhilarated when I accomplish something at work). Leaders' rated how often they feel the way described by the items on a 7-point Likert scale ranging from 0 (never) to 6 (always). The internal reliability of the emotional exhaustion subscale of the MBI was $\alpha = .92$ at Time 1, $\alpha = .92$ at Time 2, and $\alpha = .88$ at Time 3. The reliability of the cynicism subscale was $\alpha = .86$ at Time 1, $\alpha = .93$ at Time 2, and $\alpha = .96$ at Time 3, and the reliability of the professional efficacy subscale was $\alpha = .87$ at Time 1, $\alpha = .84$ at Time 2, and $\alpha = .91$ at Time 3.

Stress. Stress was measured using seven items (e.g., "I found it hard to wind down after work") from the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995). I chose the DASS for this study because it is a short measure that effectively discriminates between stress and other adjacent constructs, such as stressors and strain. The DASS has also been used to evaluate changes in stress in non-clinical populations (see Day et al., 2014). Leaders used a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time) to indicate how much each statement applied to them at work over the past week. In the current study, the internal reliability of the DASS subscale was $\alpha = .67$ at Time 1, $\alpha = .83$ at Time 2, and $\alpha = .93$ at Time 3.

Strain. Strain was measured using 20 items from the Strain Symptoms Checklist (Bartone, Ursano, Wright, & Ingraham, 1989). Leaders indicated how often they have

experienced each of a list of complaints (e.g., “general aches or pains”, “trouble sleeping”) on a 6-point Likert scale ranging from 0 (never) to 5 (always). The internal reliability of the scale was $\alpha = .83$ at Time 1, $\alpha = .90$ at Time 2, and $\alpha = .84$ at Time 3.

Weekly Goal Progress. Each week, leaders were asked to assess their leadership behaviour using the GTL (Carless et al., 2000) and their goal progress using a 5-point Likert-type scale ranging from 1 (no progress) to 5 (excellent progress). In the second iteration of the program, leaders were also asked a single self-efficacy question "to what extent were you confident in your leadership skills/decisions" on a 5-point scale 0 (not at all confident) to 4 (extremely confident).

Coach Rated Engagement. The LEAD coaches were asked to evaluate the level of engagement of the leaders who they coached in the LEAD program at the end of the ten weeks. Based on their coaching notes, coaches rated how frequently "the participant was engaged in the program" on a 5-point scale ranging from 1 (none of the time) to 5 (all of the time). Higher scores indicated more engagement in the LEAD program. Additionally, coaches were asked to rate the overall progress they felt each leader had made throughout the program based on their initial leadership skills at the beginning of the program using a 7-point scale ranging from 0 (substantially worse) to 6 (substantially better).

Direct Report Measures

Transformational leadership. Direct reports also completed the direct report version of the MLQ (Bass & Avolio, 1997), as well as the GLQ (Carless et al., 2000). Both scales ask direct reports to describe their leaders’ style as they perceive it, and to rate the frequency each statement (e.g., my leader seeks differing perspectives when

solving problems; my leader encourages thinking about problems in new ways and questions assumptions) fits their leader on a 5-point scale ranging from 0 (rarely or never) to 4 (frequently, if not always). The MLQ had an internal reliability[3] of α = .92 at Time 1, α = .91 at Time 2, and α = .94 at Time 3. The GTL had an internal reliability of α = .95 at Time 1, α = .94 at Time 2, and α = .95 at Time 3.

Self-efficacy. Self-efficacy was measured using the 12-item version of the General Self-Efficacy Scale (GSES-12; Bosscher & Smit, 1998). The GSES-12 asks direct reports to rate their level of agreement to 12 statements across three subscales: initiative (3 items), effort (5 items), and perseverance (4 items; e.g., when trying to learn something new, I soon give up if I am not initially successful; when I make plans, I am certain I can make them work; I do not seem capable of dealing with most problems that come up in my life) on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The initiative subscale had an internal reliability of α = .85 at Time 1, α = .88 at Time 2, and α = .84 at Time 3. The effort subscale had an internal reliability of α = .77 at Time 1, α = .76 at Time 2, and α = .81 at Time 3, and the perseverance subscale had an internal reliability of α = .78 at Time 1, α = .75 at Time 2, and α = .83 at Time 3.

Trust in leader. Trust in leader was measured using the McAllister (1995) affective- and cognitive-based trust scale. Direct reports indicated their level of agreement with 11 statements about their leader (e.g., "I can talk freely to this individual about difficulties I am having at work and know that (s)he will want to listen; this person approaches his/her job with professionalism and dedication") using a 7-point Likert scale

[3] Internal reliabilities for the scales included in the direct report surveys were calculated using all direct report responses at each time point regardless of LEAD group their leader was participating in.

ranging from 1 (strongly disagree) to 7 (strongly agree). The trust in leader scale had an internal reliability of α = .90 at Time 1, α = .90 at Time 2, and α = .86 at Time 3.

Burnout. Burnout was assessed using the three scales of the Maslach Burnout Inventory (MBI; Maslach et al., 1996). In the current study, the emotional exhaustion subscale of the MBI had an internal reliability of α = .92 at Time 1, α = .92 at Time 2, and α = .91 at Time 3. The reliability of the cynicism subscale was α = .84 at Time 1, α = .84 at Time 2, and α = .86 at Time 3, and the reliability of the professional efficacy subscale was α = .83 at Time 1, α = .80 at Time 2, and α = .88 at Time 3.

Stress. Stress was assessed using the 7-item stress subscale of the DASS (Lovibond & Lovibond, 1995). Using a 4-point Likert-type scale, direct reports indicated the extent to which the items applied to them at work over the past week (e.g., "I found myself getting agitated"). In the present study, the DASS Stress scale had an internal reliability of α = .91 at Time 1, α = .88 at Time 2, and α = .88 at Time 3.

Strain. Strain was assessed using the 20-item Strain Symptoms Checklist (Bartone et al., 1989). Using a 6-point Likert-type scale, direct reports indicated the extent to which they had experienced the listed symptoms over the past month (e.g., "difficulty concentrating", "overly tired/lack of energy"). In the current study, it had an internal reliability of α = .92 at Time 1, α = .93 at Time 2, and α = .93 at Time 3.

Results

Level 1: Reactions

Leaders Post-LEAD Feedback. Research Goal 1 was assessed through leaders' post program feedback and reactions to LEAD. Post program feedback indicated that 88% of leaders were happy with the services provided by LEAD, 83% found the program

beneficial, and 51% felt that the program was very helpful. Furthermore, 76% agreed that they would encourage other leaders to participate in the LEAD program. When reflecting on their personal progress and behaviour change throughout the program, 45% of leaders felt that they had made excellent progress, and 50% reported moderate progress. Moreover, 76% reported that they had met their program goals. Qualitative comments highlighted that many leaders felt they had made progress in the quality of conversations with their direct reports, as well as their ability to connect and coach them (e.g., "Taking time to get to know direct reports on a personal level. Trying to support my direct reports in coming to an answer to a problem or question without always being quick to solve things for them").

Participating leaders reported significant changes in their behaviours because of the LEAD program. Most leaders reported that they were able to transfer the skills they learned back to their job (84%), that they had made positive changes at work because of the LEAD program (88%), and that they specifically adapted their behaviours to align with the leadership strategies and behaviours central to the LEAD program (72%). Over half of leaders (56%) indicated that their job performance had improved due to the skills they developed in the LEAD program. Moreover, a third of leaders (35%) indicated that others had noticed the positive changes they had made since starting the LEAD program. Additionally, immediately after the 10th week of the LEAD program 64% of leaders had already noticed positive changes in their direct reports' behaviours, which they attributed to the positive changes they personally made throughout the program.

Almost all the participating leaders (91%) reported that their coach was helpful, and 93% of leaders indicated that they enjoyed the coaching conversations they had with

their coach. The coaching format, both in terms of the one-on-one and telephone elements were found to be helpful by 73% of leaders, and slightly over half of the leaders found the email content on non-coaching weeks to be helpful (54%). Leaders specifically identified the value in coaches being able to tailor and adapt the program to their individual needs (e.g., "Coach's ability to cater the program to my needs and abilities as well as a willingness to follow up"). The coaching conversations were found to be more helpful than the program manual (45%) and its specific content. When it came to the specific topics covered in the manual, the session on goal setting was found to be the most helpful (71%), while identifying resources was found to be the least helpful (38%) (see Appendix G for a full overview of participant feedback).

To assess the consistency across the coaching, groups, and phases, I conducted post-hoc analyses to assess potential leader differences based on coach. There were no significant differences in leaders' post-program reactions based on either the coach they had or on the LEAD Phase (1 or 2) in which they participated. There was a significant difference between Group 1 leaders and Group 2 leaders in terms of the extent to which they agreed that they had noticed positive changes in their direct reports' behaviour ($t(23) = 5.00$, $p < .001$), with Group 2 (M = 3.85, SD = .49) leaders more strongly agreeing that they experienced positive changes than did Group 1 leaders (M = 2.60, SD = .55).

Coach Post-LEAD Feedback. In addition to leaders' feedback on the program, I also asked the five LEAD coaches to rate the level of progress and program engagement of the leaders that they coached (i.e., Research Question 2). Because of the intended flexibility of the LEAD program, as well as accommodating unforeseen scheduling challenges (e.g., participant vacations), not all leaders received precisely the six phone-

coaching sessions outlined in the LEAD program. Some leaders requested additional sessions on weeks where phone-coaching was not scheduled, and some leaders needed to combine sessions because of scheduling constraints. Coaches reported having an average of 6.17 phone calls with their leaders (88% received at least 6 sessions; range = 5-8 sessions, and 65% receiving exactly 6). Post hoc independent sample t-tests indicated no significant differences in key outcomes between leaders who had more or less than the 6 prescribed sessions. Coaches made individual arrangements with leaders that best maintained the integrity of the LEAD program as well as accommodated individual needs.

When reporting on their leaders' engagement in the program, coaches reported that most leaders (i.e., 75%) were engaged in the program and 73% were motivated to achieve their goals. Coaches indicated that a large majority of the leaders read the material (70%), completed the weekly activities (62%), tried out the relative skills and strategies (70%), and were receptive to suggestions (88%). Overall, coaches reported that 78% of participating leaders had made positive changes and progress by the completion of the program. Specifically, 22% of leaders were rated as having made no change, 38% slightly better, 35% quite a bit better, and 5% substantially better. The correlation between coach and leader rating of their progress is non-significant (r = .218, p = .171), indicating that coaches' assessment is providing a unique perspective to the program evaluation.

Post-hoc ANOVAs on coaches' ratings of leaders indicated only one significant difference. Coach A rated their leaders' overall progress significantly lower (M = 3.90, SD = .72) than both Coach B (M = 4.75, SD = .75) and Coach C (M = 5.00, SD = 1.00).

Level 2: Learning

Hypothesis 1: Compared to their responses prior to the LEAD program, leaders are able to provide more examples of effective transformational leadership behaviours after participating in the LEAD program.

To test Hypothesis 1, leaders' knowledge of effective leadership behaviours was assessed both prior to and after their participation in the LEAD program. Two independent raters, who were blind to what group the leaders had been assigned, analyzed the qualitative responses. Both raters were psychology graduate students who had not participated as SMEs in study 1, with research methods backgrounds and with formal leadership experience. Raters were first asked to theme qualitative comments, and then to identify the frequency of comments that referred to transformational leadership behaviours (see Appendix H for rater instructions).

Initial thematic analyses indicated that six themes that represented participant comments: (1) lead by example, (2) support direct reports, (3) develop direct reports, (4) provide effective communication and feedback, (5) display positive attitude, respect, and empathy, and (6) demonstrate competence. A 2x2 (Group: Group 1 - intervention vs. Group 2 - wait-list control) x 2 (pre-LEAD vs. post-LEAD) mixed ANOVA was conducted to test whether the number of the transformational leadership behaviours that leaders identified as representing effective leadership behaviours increased from pre- to post-LEAD. There was a non-significant effect of time ($F(1, 41) = .96$, $p = .333$), but a significant Time by Group interaction ($F(1, 41) = 10.55$, $p = .002$).

Although there was a significant interaction, post-hoc independent t-tests indicate that there was not a significant difference in the volume of transformational leadership

behaviours identified either pre-LEAD ($t(57) = 1.54$, $p = .129$) or post LEAD ($t(41) = 1.18$, $p = .246$) between Group 1 and 2 leaders. Post-hoc paired t-test analyses were conducted independently on the two LEAD groups. The first LEAD group reported an overall significant increase in their knowledge of transformational leadership behaviours ($Mean_{Pre\text{-}LEAD} = 1.04$, SD = .83; $Mean_{Post\text{-}LEAD} = 1.70$, SD = .93; $t(22) = -2.92$, $p = .008$). However, the results were not replicated for the second LEAD group ($Mean_{Pre\text{-}LEAD} = 1.75$, SD = .97; $Mean_{Post\text{-}LEAD} = 1.40$, SD = .97; $t(19) = 0.79$, $p = .110$).

Level 3: Behaviour Change

Hypothesis 2: The LEAD program has a positive effect on leaders' self-reported (a) transformational leadership behaviours, (b) self-efficacy, and (c) well-being (i.e., reduced burnout, stress, and strain).

To examine the effect of the LEAD program on key leader outcomes (i.e., Hypothesis 2), I used a 2 (Group: Group 1 - intervention vs. Group 2 - wait-list control) x 3 (Time 1 vs. Time 2 vs. Time 3) doubly multivariate repeated measures MANOVA (i.e., Hypothesis 2). Leader self-reported transformational leadership and leadership self-efficacy were entered together, and an additional analysis was conducted for the well-being outcomes. The well-being outcomes were addressed in a separate analysis because neither transformational leadership, nor leadership self-efficacy were significantly correlated with the well-being outcomes (see Table 8 means, standard deviations, and correlations of leader self-report data at Time 1, Time 2, and Time 3).

Transformational leadership and leadership self-efficacy. There were significant univariate effects of Time ($F(4, 30) = 61.32$, $p = .000$, $\eta^2 = .891$), but a non-significant multivariate effect for the Group x Time interaction ($F(4, 30) = .641$, $p = .638$, $\eta^2 = .079$).

Univariate tests show the same pattern for transformational leadership (Time: $F(2, 66) = 108.43$, $p = .000$, $\eta^2 = .767$; Time x Group: $F(2, 66) = 1.64$, $p = .203$, $\eta^2 = .047$), leadership self-efficacy (Time: $F(2, 66) = 149.11$, $p = .000$, $\eta^2 = .819$; Time x Group: $F(2, 66) = .68$, $p = .512$, $\eta^2 = .020$). See Figures 2-3 for the pattern of results.

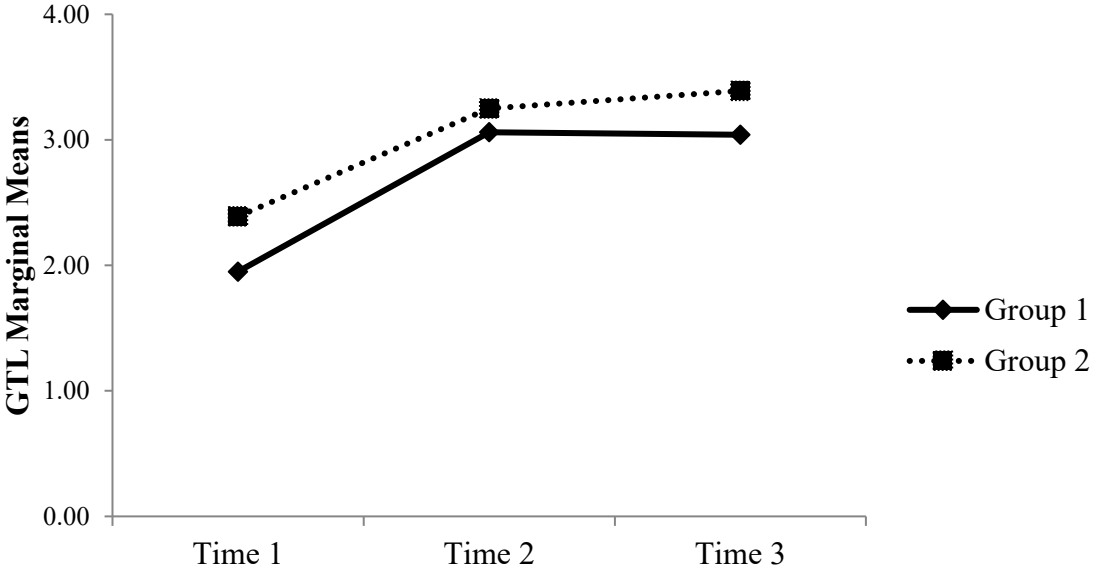

Figure 2. Pattern of change in transformational leadership across times 1, 2, and 3 for Group1 and Group 2 leaders (N = 59).

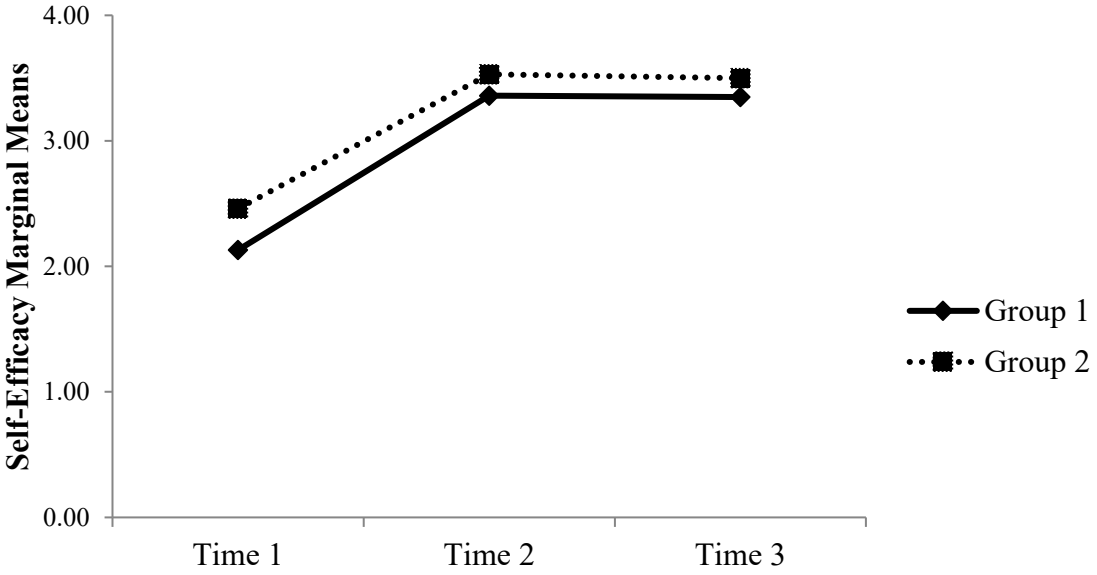

Figure 3. Self-efficacy at times 1, 2, and 3 for Group1 and Group 2 leaders ($N = 59$).

Well-being. Again, there were significant univariate effects of Time ($F(10, 25) = 147.88$, $p = .000$, $\eta^2 = .983$), but a non-significant multivariate effect for the Group x Time interaction ($F(10, 25) = 1.031$, $p = .450$, $\eta^2 = .291$). Univariate tests show the same pattern for stress (Time: $F(2, 68) = 8.03$, $p = .001$, $\eta^2 = .191$; Time x Group: $F(2, 68) = .57$, $p = .571$, $\eta^2 = .016$), strain (Time: $F(2, 68) = 163.68$, $p = .000$, $\eta^2 = .915$; Time x Group: $F(2, 68) = 1.77$, $p = .179$, $\eta^2 = .049$), and burnout (Emotional Exhaustion = Time: $F(2, 68) = 83.38$, $p = .000$, $\eta^2 = .710$; Time x Group: $F(2, 68) = .17$, $p = .845$, $\eta^2 = .005$; Cynicism = Time: $F(2, 68) = 52.01$, $p = .000$, $\eta^2 = .605$; Time x Group: $F(2, 68) = .13$, $p = .878$, $\eta^2 = .004$; Professional Efficacy = Time: $F(2, 68) = 162.88$, $p = .000$, $\eta^2 = .827$; Time x Group: $F(2, 68)$ .31, $p = .733$, $\eta^2 = .009$). See Figures 4 – 8 for the pattern of results. The significant effect of time, in combination with the lack of multivariate effects is concerning for the efficacy of LEAD. There is a consistent pattern of both groups increasing in between Time 1 and Time 2 on all measures, including measures of negative well-being (e.g., strain, burnout). For the first intervention group (Group 1) this

change in self-reported behaviours was expected, although in an unexpected direction for the indices of well-being. However, the similar increases in reported behaviour in the control group (Group 2) was unexpected and problematic.

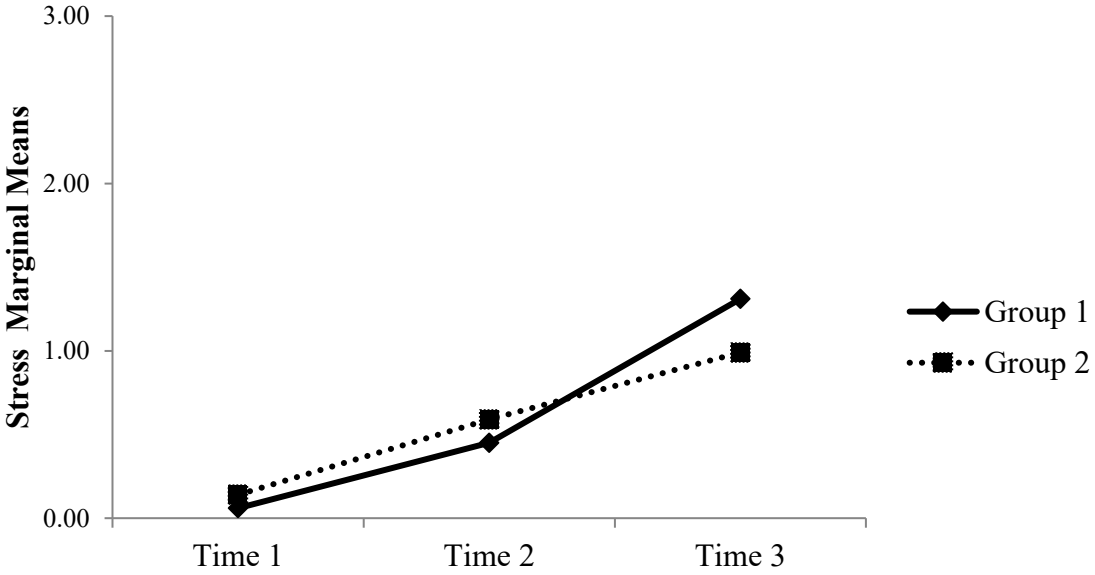

Figure 4. Stress at Times 1, 2 , and 3 for Group1 and Group 2 leaders. (*N* = 59)

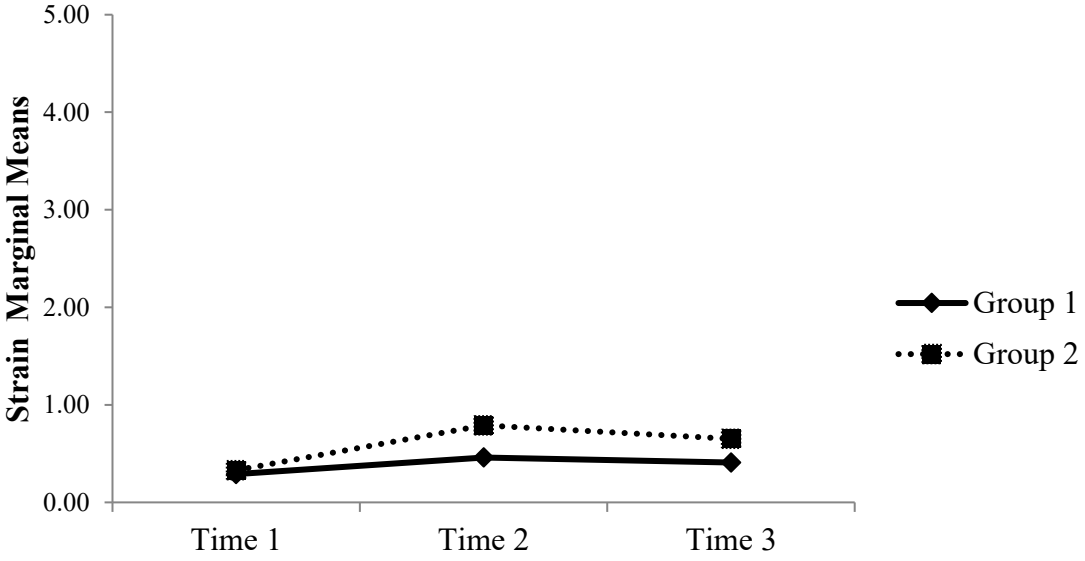

Figure 5. Strain at Times 1, 2 , and 3 for Group1 and Group 2 leaders. (*N* = 59)

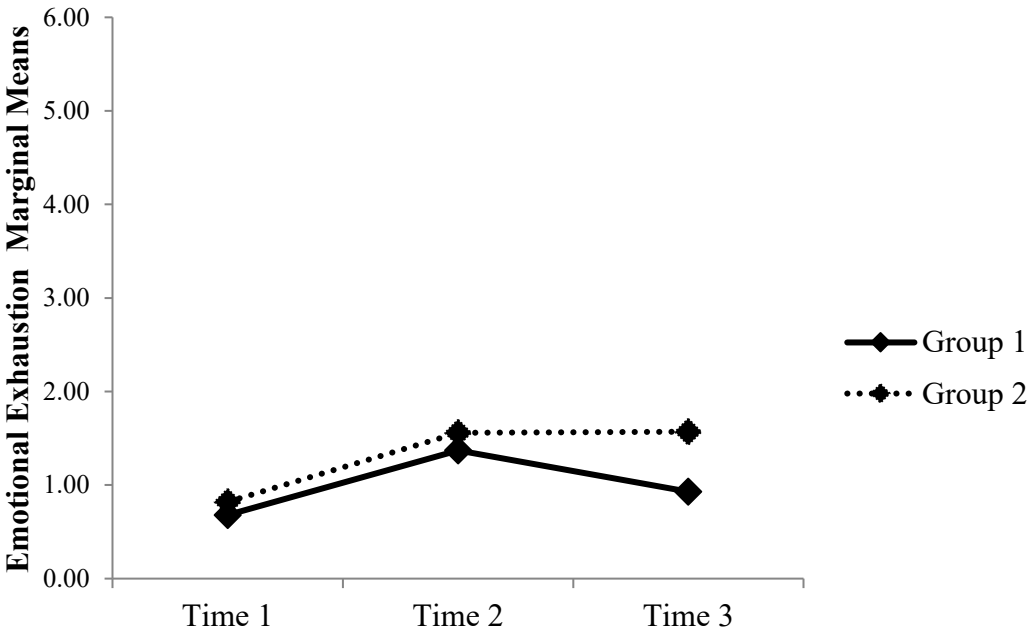

Figure 6. Emotional exhaustion at times 1, 2, and 3 for Group1 (solid line) and Group 2 (dashed line) leaders. (N = 59)

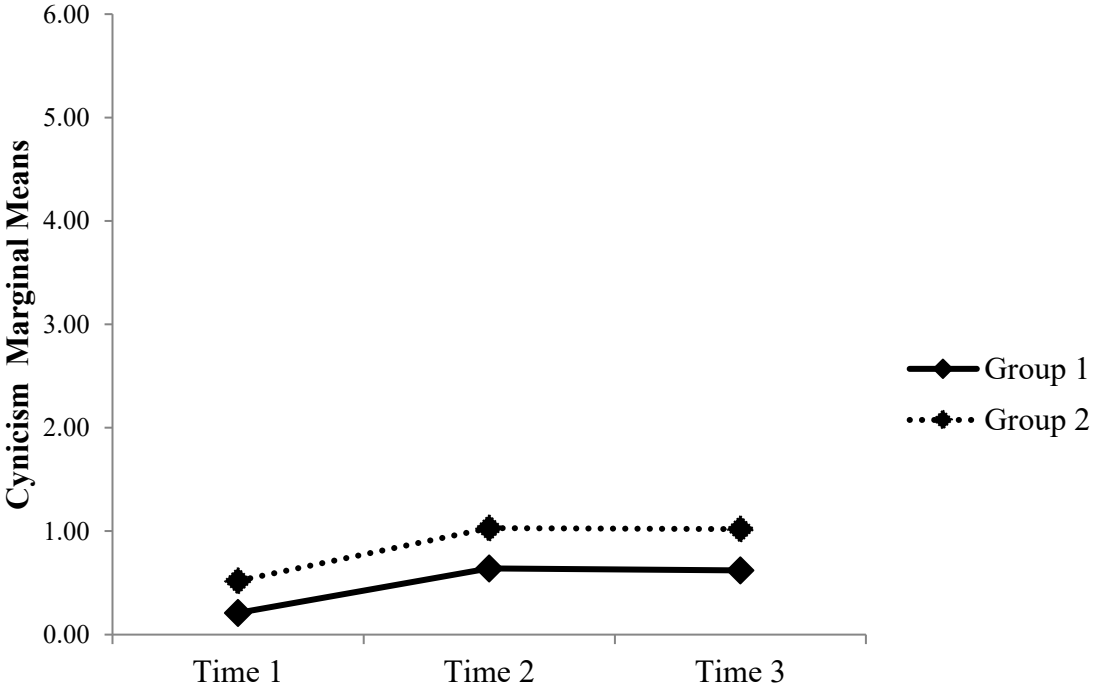

Figure 7. Cynicism at times 1, 2, and 3 for Group1 (solid line) and Group 2 (dashed line) leaders. (N = 59)

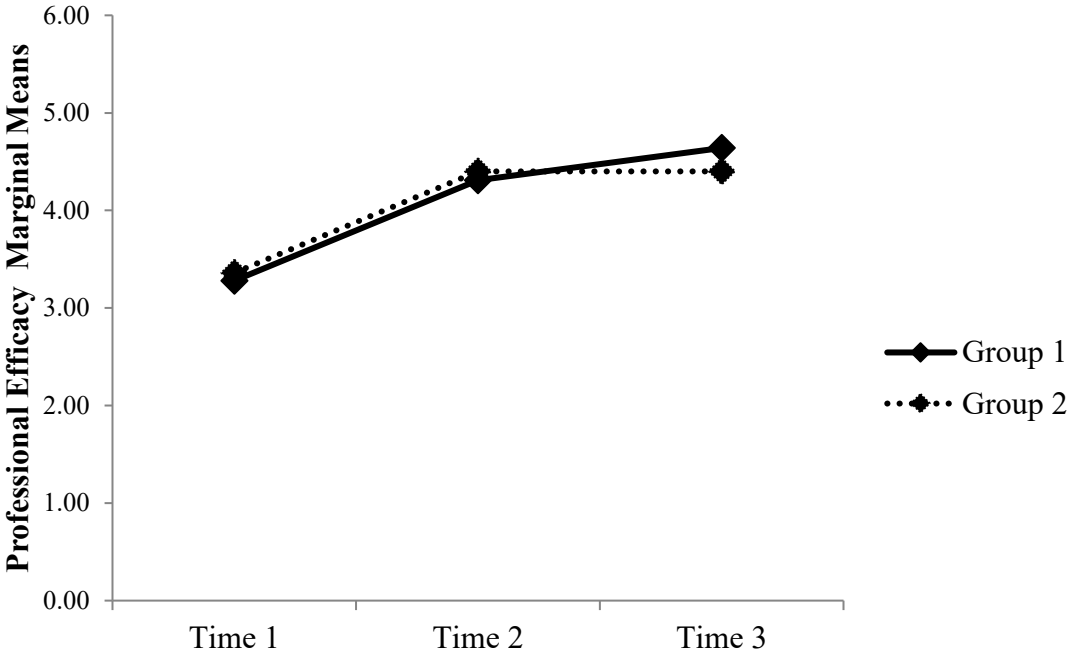

Figure 8. Professional efficacy at times 1, 2, and 3 for Group1 (solid line) and Group 2 (dashed line) leaders. (N = 59)

Table 8. *Correlation Matrix for all Leader Self-Reported Study Variables (Time 1, 2, and 3) for Group 1 (N = 31; below the diagonal) and Group 2 (N = 28; above the diagonal)*

	Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
	M	2.35	2.51	4.09	0.10	0.30	0.76	0.42	3.30	3.23	3.49	3.94	0.48	0.72
	SD	0.46	0.35	0.46	0.21	0.27	0.98	0.91	0.79	0.39	0.40	0.54	0.38	0.50
	Time 1													
1.	Transformational Leadership	--	.48[a]	.14	-.29	-.34	-.28	-.08	.47[a]	.56[b]	.48[a]	.30	-.32	-.28
2.	Leader Efficacy	.50[b]	--	.12	-.08	-.26	-.24	-.21	.28	-.04	.18	-.10	-.26	-.27
3.	LEAD Motivation	.00	.02	--	-.09	-.12	-.26	-.30	.44[a]	.01	.25	.64[c]	-.04	-.05
4.	Stress	.12	.20	.13	--	.50[b]	.75[c]	.08	-.13	-.14	-.18	-.16	.65[c]	.40[a]
5.	Strain	-.16	-.19	.49[b]	.22	--	.51[b]	-.04	-.11	-.29	-.25	-.28	.47[a]	.62[b]
6.	Exhaustion	-.07	.18	.38[a]	.68[c]	.52[b]	--	.12	-.19	-.02	-.24	-.25	.54[b]	.32
7.	Cynicism	-.16	-.15	.00	.28	.29	.31	--	-.37	.12	.01	-.25	.22	.00
8.	Profess. Efficacy	.38[a]	.67[c]	-.21	.17	-.17	-.03	-.24	--	.19	.11	.27	.06	-.14
	Time 2													
9.	Transformational Leadership	.44[a]	.34	.43[a]	.35	.44[a]	.47[a]	.11	.23	--	.46[a]	.36	-.26	-.31
10.	Leader Efficacy	.03	.44[a]	.50[a]	.18	.26	.27	-.02	.22	.69[c]	--	.28	-.27	-.42[a]
11.	LEAD Motivation	.18	.29	.41[a]	-.09	.06	-.07	-.10	.15	.34	.45[a]	--	-.30	-.16
12.	Stress	.35	.18	.21	.22	.49[a]	.38	.20	-.03	.17	-.25	-.03	--	.50[b]
13.	Strain	.31	.16	.50[a]	.22	.44[a]	.45[a]	.15	.02	.36	.06	.14	.65[b]	--
14.	Exhaustion	.28	.25	-.04	.79[c]	.11	.68[c]	.35	-.03	.18	-.13	-.23	.46[a]	.24
15.	Cynicism	-.11	.00	-.08	.11	.00	.20	.76[c]	-.20	-.12	-.34	-.17	.42[a]	.27
16.	Profess. Efficacy	.13	.11	.05	-.10	.00	-.26	-.36	.49[a]	.28	.51[a]	.33	-.44[a]	-.11

Continued below.

Table 8. (continued)

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
	Time 3													
17.	Transformational Leadership	.34	.34	.12	.09	.38	.07	-.09	.22	.82[c]	.52[a]	.37	.13	.05
18.	Leader Efficacy	.27	.64[b]	.45[a]	.13	.10	.19	-.44[a]	.36	.69[b]	.64[b]	.27	.05	.26
19.	LEAD Motivation	.27	.31	.03	-.31	-.04	-.30	-.28	.29	.55[a]	.52[a]	.51[a]	-.30	.00
20.	Stress	.10	-.47[a]	-.19	.03	.32	-.06	.48[a]	-.29	.26	-.19	-.19	.35	.17
21.	Strain	-.01	-.08	.16	.28	.48[a]	.41	.55[b]	-.03	.29	-.12	.17	.82[c]	.76[c]
22.	Exhaustion	.13	.05	-.15	.59[b]	.07	.63[b]	.54[a]	-.17	.05	-.31	-.25	.40	.23
23.	Cynicism	-.12	-.24	-.32	.01	-.08	.04	.80[c]	-.39	-.20	-.41	-.13	.31	.07
24.	Profess. Efficacy	.05	.26	.18	-.03	.33	-.02	-.34	.51[a]	.58[a]	.59[a]	.15	-.19	.14
Time 1 Demographics & Work Variables														
25.	Age	.20	.13	.20	-.21	.09	-.14	-.24	.374[a]	.02	.20	.29	-.30	.01
26.	Gender	.03	-.20	.13	.30	.23	.28	.09	-.10	.33	.01	.41[a]	.09	.16
27.	Time in Org.	.27	.40[a]	.12	-.09	-.06	-.20	-.04	.27	-.02	.14	.07	.00	.38
28.	Direct Reports	.15	.10	.34	.08	.08	.14	.20	-.29	.28	.28	-.05	-.12	.08
29.	All Training	-.43[a]	-.39[a]	-.19	-.12	.30	-.04	.18	-.28	-.04	.03	-.14	-.07	-.21
30.	Leadership Train	.32	.20	.03	-.08	-.16	-.08	.18	-.13	-.41	-.47	-.21	-.03	.03
	M	2.05	2.24	4.06	0.06	0.34	0.83	0.26	3.35	3.08	3.33	3.68	0.53	0.55
	SD	0.55	0.61	0.40	0.13	0.32	1.10	0.44	0.99	0.46	0.46	0.48	0.38	0.47

Note. Statistics for the first LEAD group are below the diagonal and statistics for the second LEAD group are above the diagonal.

Note. Leader Efficacy = Leadership Self-Efficacy; Exhaustion = Emotional Exhaustion; Profess. Efficacy = Professional Efficacy; Time in Org = Number of months in organization; Direct Reports = Number of direct reports; All Training = Number of training courses taken; Leadership Train = Number of leadership training programs taken

Note. Gender: 0 = male; 1 = female

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Continued below.

Table 8. (continued)

	Variables	14	15	16	17	18	19	20	21	22	23	24	25	26
	M	1.66	0.94	4.37	3.34	3.45	3.80	1.04	0.65	1.59	0.98	4.41	41.04	0.57
	SD	0.90	1.17	0.82	0.45	0.43	0.46	0.67	0.42	1.01	1.25	1.00	8.97	0.50
	Time 1													
1.	Transformational Leadership	-.48[a]	-.27	.46[a]	.63[b]	.56[a]	.21	-.26	-.33	-.53[a]	-.36	.44	.12	.03
2.	Leader Efficacy	-.37	-.35	.31	.52[a]	.52[a]	.10	-.18	-.44	-.41	-.40	.29	-.43[a]	.16
3.	LEAD Motivation	-.25	-.30	.55[b]	.46	.31	.49[a]	-.09	-.47[a]	-.54[a]	-.43	.51[a]	-.25	-.05
4.	Stress	.44[a]	.14	-.12	-.30	-.21	-.24	.15	.20	.36	-.04	-.07	-.27	-.08
5.	Strain	.51[b]	.13	-.23	-.51[a]	-.41	-.28	.01	.66[b]	.30	-.03	-.16	-.42[a]	.03
6.	Exhaustion	.82[c]	.17	-.20	-.27	-.08	-.15	.18	.38	.56[a]	-.01	-.05	-.08	.21
7.	Cynicism	.25	.92[c]	-.56[b]	-.31	-.08	-.24	-.05	.11	.71[b]	.90[c]	-.66[b]	.22	-.14
8.	Profess. Efficacy	-.30	-.40[a]	.78[c]	.23	.30	.20	-.17	-.33	-.40	-.44	.68[b]	-.11	-.01
	Time 2													
9.	Transformational Leadership	-.16	.03	.13	.14	.08	-.06	-.03	-.11	-.03	-.04	.19	.16	-.09
10.	Leader Efficacy	-.36	-.07	.05	.52[a]	.50[a]	.13	-.22	-.13	-.28	-.14	-.12	-.04	.00
11.	LEAD Motivation	-.27	-.27	.43[a]	.35	-.09	.38	.14	-.28	-.50[a]	-.41	.44	.15	-.01
12.	Stress	.43[a]	.38[a]	-.04	-.27	-.05	-.36	.17	.20	.46[a]	.34	-.23	-.10	-.12
13.	Strain	.39[a]	.22	-.22	-.53[a]	-.39	-.31	.55[a]	.71[c]	.46[a]	.12	-.24	-.19	.07
14.	Exhaustion	--	.38[a]	-.40[a]	-.59[b]	-.31	-.27	.33	.62[b]	.73[c]	.23	-.32	-.16	.24
15.	Cynicism	.49[a]	--	-.63[c]	-.41	-.18	-.37	.10	.23	.79[c]	.90[c]	-.76[c]	.16	-.07
16.	Profess. Efficacy	-.46[a]	-.55[b]	--	.49[a]	.29	.26	-.13	-.52[a]	-.64[b]	-.56[a]	.81[c]	-.04	-.07
	Time 3													
17.	Transformational Leadership	-.10	-.30	.22	--	.77[c]	.38	-.12	-.68[b]	-.50[a]	-.37	.46[a]	.39	.01

Continued below.

Table 8. (continued)

	Variables	14	15	16	17	18	19	20	21	22	23	24	25	26
18.	Leader Efficacy	-.11	-.38	.25	.62[b]	--	.35	-.13	-.48[a]	-.23	-.21	.20	.36	.19
19.	LEAD Motivation	-.28	-.26	.53[a]	.48[a]	.35	--	-.29	-.22	-.32	-.31	.27	-.02	.00
20.	Stress	.22	.43	-.01	.21	-.33	-.05	--	.36	.32	-.02	.05	.07	.21
21.	Strain	.22	.44	-.21	.14	-.11	-.32	.38	--	.48[a]	.17	-.43	-.40	.18
22.	Exhaustion	.93[c]	.55[a]	-.59[b]	-.20	-.28	-.33	.15	.48[a]	--	.71[c]	-.60[b]	.00	.13
23.	Cynicism	.38	.95[c]	-.52[a]	-.26	-.51[a]	-.22	.52[a]	.43[a]	.57[b]	--	-.74[c]	.21	-.23
24.	Profess. Efficacy	-.48[a]	-.59[b]	.67[b]	.58[b]	.56[b]	.52[a]	-.11	-.12	-.59[b]	-.65[b]	--	.07	-.04
Time 1 Demographics & Work Variables														
25.	Age	-.56[b]	-.63[b]	.57[b]	.06	.12	.31	-.31	-.17	-.50[a]	-.56[b]	.51[a]	--	.10
26.	Gender	.18	.03	.15	.37	.01	.00	.41	.45[a]	.23	.10	.16	-.12	--
27.	Org Time	-.22	-.05	.16	.06	.34	-.04	-.10	-.07	-.28	-.22	.17	.23	-.31
28.	Direct Reports	.26	-.01	-.20	.11	.34	.00	-.10	-.16	.18	-.07	.05	.18	-.14
29.	All Training	-.05	.09	.08	.08	-.17	.02	.30	.05	-.13	.12	.10	-.09	.11
30.	Leadership Train	-.15	.09	-.04	.04	.13	-.24	-.34	.13	.17	-.22	.06	.26	-.18
	M	1.41	0.76	4.21	3.06	3.34	3.83	1.27	0.46	1.03	0.68	4.60	46.10	0.61
	SD	1.19	0.90	0.76	0.47	0.56	0.53	0.59	0.36	0.72	0.97	0.83	8.62	0.50

Note. Statistics for the first LEAD group are below the diagonal and statistics for the second LEAD group are above the diagonal.

Note. Leader Efficacy = Leadership Self-Efficacy; Exhaustion = Emotional Exhaustion; Profess. Efficacy = Professional Efficacy; Time in Org = Number of months in organization; Direct Reports = Number of direct reports; All Training = Number of training courses taken; Leadership Train = Number of leadership training programs taken

Note. Gender: 0 = male; 1 = female

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Table 8. (continued)

	Variables	27	28	29	30
	M	45.61	21.04	1.86	2.46
	SD	53.01	24.20	1.60	1.85
	Time 1				
1.	Transformational Leadership	.21	.00	.18	.40
2.	Leader Efficacy	-.33	-.26	.20	.43
3.	LEAD Motivation	.04	-.26	.12	.59[a]
4.	Stress	-.10	-.24	-.18	.10
5.	Strain	-.18	-.19	.03	.14
6.	Exhaustion	-.01	.06	.08	-.15
7.	Cynicism	.37	-.11	-.23	-.52
8.	Profess. Efficacy	-.10	-.27	.26	.64[a]
	Time 2				
9.	Transformational Leadership	.47[a]	.06	.04	.16
10.	Leader Efficacy	.15	-.06	-.15	.49
11.	LEAD Motivation	.33	-.08	.19	.39
12.	Stress	-.05	-.16	-.26	-.12
13.	Strain	-.11	-.03	.01	-.11
14.	Exhaustion	-.05	.08	.15	-.25
15.	Cynicism	.36	-.05	-.24	-.45
16.	Profess. Efficacy	.04	-.03	.24	.52
	Time 3				
17.	Transformational Leadership	.18	.25	.17	.17

Continued below.

Table 8. (continued)

	Variables	27	28	29	30
18.	Leader Efficacy	.14	.37	.11	.18
19.	LEAD Motivation	-.32	.15	.13	.11
20.	Stress	.07	.20	.40	.16
21.	Strain	-.31	-.03	.05	.06
22.	Exhaustion	.10	-.07	-.09	-.29
23.	Cynicism	.35	-.07	-.41	-.41
24.	Profess. Efficacy	-.07	-.03	.53[a]	.40
	Demographics & Work Variables				
25.	Age	.59[b]	.50[b]	.08	-.42
26.	Gender	.07	.48[b]	.61[b]	.41
27.	Org Time	--	.37	.09	.08
28.	Direct Reports	.17	--	.37	-.06
29.	All Training	-.35	-.07	--	.80[b]
30.	Leadership Train	.19	.92[c]	-.17	--
	M	59.77	33.10	2.10	3.82
	SD	58.42	57.47	2.48	6.51

Note. Statistics for the first LEAD group are below the diagonal and statistics for the second LEAD group are above the diagonal.

Note. Leader Efficacy = Leadership Self-Efficacy; Exhaustion = Emotional Exhaustion; Profess. Efficacy = Professional Efficacy; Time in Org = Number of months in organization; Direct Reports = Number of direct reports; All Training = Number of training courses taken; Leadership Train = Number of leadership training programs taken

Note. Gender: 0 = male; 1 = female

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Hypothesis 3: There will be a progressive increase in transformational leadership across the 10-weeks of the LEAD program. I conducted a latent growth modeling for the self-reported transformational leadership data that leaders completed on a weekly basis during the LEAD program. Only leaders who completed at least one coaching session were included in the analyses. I also included the pre- and post-LEAD transformational leadership scores, which created 12 times points. Pre-LEAD transformational leadership was coded as 0 and the post-LEAD score as 11. Time was the only predictor used in the model, and a random intercept and fixed slope model was the best fit. The model predicted 62% of the variance in transformational leadership, where time was a significant predictor ($t(512) = 12.37$, $p < .001$). Self-reported transformational leadership increased by .07 over the course of each week of the LEAD program. There were significant increases in transformational leadership each week between weeks 1 and 6 where changes ranged from .17 to .66. The change in transformational leadership between weeks 6 and 10 were non-significant but still in the expected direction. Together, this pattern indicates an overall trend of significant improvement in self-reported transformational leadership throughout the LEAD program. See Figure 9 for the pattern of results.

The significant effect of time on weekly reports of transformational leadership were replicated when Group 1 ($t(260) = 12.20$, $p < .001$) and Group 2 ($t(254) = 5.33$, $p < .001$) were analyzed separately. For Group1 there was a .09 increase in transformational leadership with every unit increase in time, and a .04 increase for Group 2.

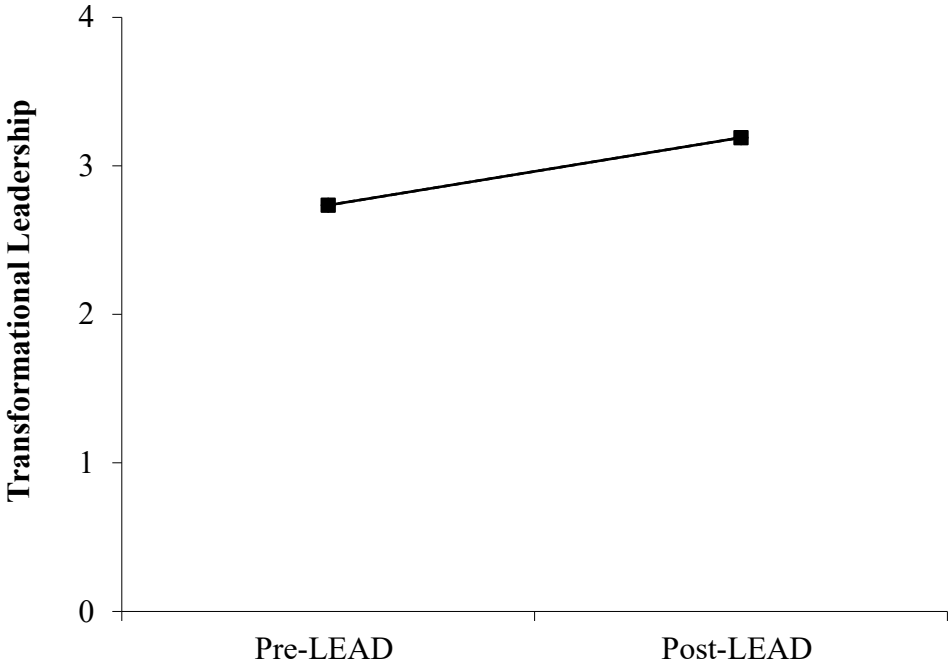

Figure 9. Weekly self-reported transformation leadership scores from pre to post-LEAD and including 10 weeks of weekly self-report data (N = 72).

*Leadership self-efficacy***.** After Phase 1 of data collection, in addition to asking leaders to report on their transformational leadership during phone-coaching weeks, leaders were also asked to report on their leadership self-efficacy. Again, latent growth modeling using the using the pre- and post-LEAD as well as weekly leadership self-efficacy data (single item of self-efficacy) were used. Similar to the results with the weekly transformational leadership behaviour data, there were a total of 12-time points, where pre-LEAD was coded as 0 and post-LEAD as 11. Leaders who didn't complete any weekly coaching were excluded from the analyses. Time was the only predictor used in the model, and a random intercept and fixed slope model was the best fit. The model predicted 40% of the variance in transformational leadership, where time was a significant predictor ($t(267) = 8.00$, $p < .001$). Self-reported leadership self-efficacy

increased by .06 over the course of each week of the LEAD program. There were significant increases in leadership self-efficacy each week between weeks 1 and 3 where changes ranged from .41 to .74. The change in leadership self-efficacy between weeks 4 and 10 were non-significant but still in the expected direction. Together, this pattern indicates an overall trend of significant improvement in self-reported leadership self-efficacy throughout the LEAD program (see Figure 10).

The weekly results were tested separately with Group 1 and Group 2. There was a significant effect of time for Group 1 ($t(139) = 9.45$, $p < .001$) where leadership self-efficacy increased by .10 with every unit increase in time. For Group 2, although the pattern of results was in the expected direction, the effect of time was non-significant ($t(141) = 1.96$, $p = .052$).

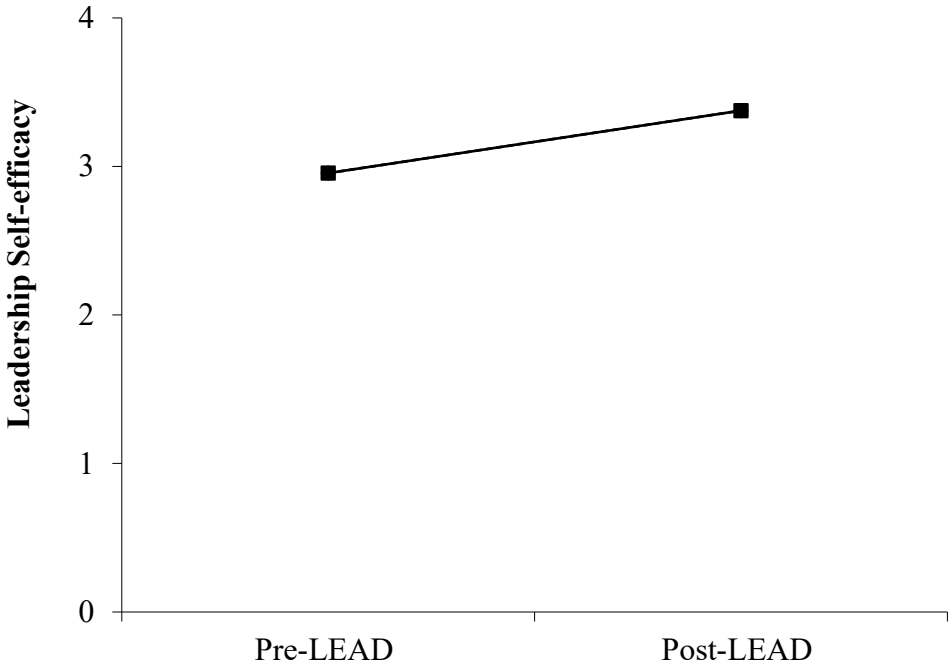

Figure 10. Weekly self-reported leadership self-efficacy scores from pre- to post-LEAD and including 10 weeks of weekly self-report data (N=72).

Hypothesis 4: Compared to their ratings pre-LEAD, direct reports will rate their leaders as being higher in transformational leadership after participation in the LEAD program.

I conducted a latent growth model to address Hypothesis 4. The model that used time as the predictor of the growth in direct-reports' assessments of leaders' transformational leadership pre- and post-LEAD. Only those direct reports whose leaders did not withdraw before the coaching were included in the analyses. Time was coded as 0 for pre-LEAD and 1 for post-LEAD. The model predicted 85% of the variance in transformational leadership, however time was a non-significant predictor ($t(120) = .71$, $p = .478$). See Table 9 for means, standard deviations, and correlations of direct report self-report data pre- and post-LEAD.

Level 4: Results of Training

Hypothesis 5: Transformational leadership (both self-report and direct report ratings pre-LEAD) is a significant predictor of well-being at (a) pre-LEAD and (b) post-LEAD.

Kirkpatrick's fourth level of training evaluation was assessed with latent growth curve modeling used to test Hypothesis 5. In all cases, time was coded as 0 (Time 1), 1 (Time 2) and 2 (Time 3). Analyses collapsing data to examine pre- and post-LEAD coded Time as 0 (pre-LEAD) and 1 (post-LEAD). Effect sizes were calculated as the percent variance accounted for by the model. All models were tested with both fixed and random effects and the best fitting models in all cases were those with a random intercept and fixed slopes. [4]

[4] Similar to the models using leader self-report data, all direct report models were tested as nested models, both nested by leader, and nested within leader. In all cases the fit statistics indicated that the null, un-nested, models were a better fit. The pattern of results was also similar in the nested and un-nested models.

Table 9. *Correlation Matrix for All Direct Report Self-Reported Study Variables (N= 142 – 278)*

	Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1.	Transf Leadership	3.02	0.87	--									
2.	SE Initiative	4.30	0.67	.22[c]	--								
3.	Se Effort	3.91	0.55	.15[a]	.41[c]	--							
4.	SE Persevere	4.15	0.64	.15[a]	.47[c]	.42[c]	--						
5.	Trust	5.49	1.08	.77[c]	.16[a]	.10	.12[a]	--					
6.	Stress	0.83	0.61	-.28[c]	-.20[b]	-.18[b]	-.24[c]	-.25[c]	--				
7.	Strain	0.82	0.65	-.16[c]	-.06	-.20[b]	-.27[c]	-.15[a]	.41[c]	--			
8.	Exhaustion	1.30	1.14	-.23[c]	-.11	-.21[b]	-.25[c]	-.23[c]	.40[c]	.57[c]	--		
9.	Cynicism	1.07	1.06	-.35[c]	-.12	-.07	-.24[c]	-.34[c]	.27[c]	.52[c]	.58[c]	--	
10.	Prof.Efficacy	4.52	0.93	.33[c]	.36[c]	.45[c]	.43[c]	.27[c]	-.27[c]	-.25[c]	-.30[c]	-.28[c]	--
11.	Transf Leadership	3.05	0.93	.86[c]	.25[a]	.15	.15	.81[c]	-.22[a]	-.15	-.29[b]	-.36[b]	.42[c]
12.	SE Initiative	4.41	0.60	.25[a]	.56[c]	.49[c]	.41[c]	.16	-.12	-.10	-.37[b]	-.23[a]	.25[a]
13.	SE Effort	3.98	0.59	.18	.40[c]	.60[c]	.30[b]	.16	-.14	-.12	-.31[b]	-.18	.32[b]
14.	SE Perc	4.23	0.64	.12	.46[c]	.46[c]	.64[c]	.12	-.12	-.25[a]	-.20	-.21	.21
15.	Trust	5.60	1.19	.77[b]	.13	.07	.05	.85[c]	-.20	-.24[a]	-.22[a]	-.39[c]	.37[b]
16.	Stress	0.47	0.49	-.17	-.05	-.13	-.20	-.11	.48[c]	.63[c]	.60[c]	.51[c]	-.12
17.	Strain	0.77	0.66	-.15	-.08	-.19	-.20	-.08	.23[a]	.82[c]	.46[c]	.47[c]	-.07
18.	Exhaustion	1.28	1.10	-.39[c]	-.09	-.30[b]	-.17	-.30[b]	.40[c]	.59[c]	.70[c]	.55[c]	-.28[a]
19.	Cynicism	1.05	1.13	-.52[c]	-.04	-.19	-.19	-.50[c]	.32[b]	.53[c]	.59[c]	.82[c]	-.38[c]
20.	Prof.Efficacy	4.51	0.97	.49[c]	.30[b]	.42[c]	.25[a]	.39[c]	-.19	-.19	-.41[c]	-.37[b]	.63[c]
21.	Age	42.43	11.03	-.11	-.04	.08	.06	-.10	.04	-.25[c]	-.18[b]	-.17[b]	.11
22.	Gender	--	--	.02	.05	.18[b]	.00	.03	-.07	.10	.13	.11	.04
23.	Org Time	84.54	99.61	-.07	-.04	-.01	.03	-.12[a]	.19[b]	-.07	-.03	-.02	-.03
24.	Leader Group	--	--	.13[a]	.02	.02	.04	.10	-.12[a]	.00	-.03	.01	.04

Note: Transf Leadership = Transformational Leadership; SE = Self-Efficacy; Perc = Perseverance; Exhaustion = Emotional Exhaustion; Prof. Efficacy = Professional Efficacy

Note. Gender: 0 = male; 1 = female; Group: 0 = Group 1; 1 = Group 2 [a] =$p<.05$; [b] = $p<.01$; [c]=$p<.001$

Continued below.

Table 9. Continued

	Variable	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Post-LEAD														
12.	SE Initiative	.19[a]	--												
13.	SE Effort	.16	.44[c]	--											
14.	SE Perc	.21[a]	.56[c]	.54[c]	--										
15.	Trust	.82[c]	.14	.04	.10	--									
16.	Stress	-.11	-.21[a]	-.14	-.21[a]	-.09	--								
17.	Strain	-.15	-.11	-.12	-.25[b]	-.16	.64[c]	--							
18.	Exhaustion	-.24[b]	-.23[b]	-.26[b]	-.23[b]	-.30[c]	.54[c]	.60[c]	--						
19.	Cynicism	-.30[c]	-.25[b]	-.18[a]	-.25[b]	-.39[c]	.44[c]	.51[c]	.72[c]	--					
20.	Prof. Efficacy	.39[c]	.42[c]	.52[c]	.44[c]	.25[b]	-.20[a]	-.18[a]	-.31[c]	-.34[c]	--				
Demographic & Work Variables															
21.	Age	-.21[a]	.09	.24[b]	.20[a]	-.09	-.24[b]	-.26[b]	-.22[b]	-.25[b]	.07	--			
22.	Gender	-.01	.02	.04	.11	.05	.11	.10	.07	-.06	.03	-.01	--		
23.	Org Time	-.13	.00	.14	-.01	-.07	-.27[b]	-.20[a]	-.17[a]	-.07	-.05	.40[c]	-.05	--	
Research Variable															
24.	Leader Group	.23[b]	-.03	-.06	-.03	.22[b]	-.04	-.10	-.13	-.09	-.04	-.11[a]	.02	-.28[c]	--

Note: Transf Leadership = Transformational Leadership; SE = Self-Efficacy; Perc = Perseverance; Exhaustion = Emotional Exhaustion; Prof. Efficacy = Professional Efficacy

Note. Gender: 0 = male; 1 = female

Note. Group: 0 = Group 1; 1 = Group 2

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Leader pre-LEAD transformational leadership. I analyzed the relationship between leaders' self-reported transformational leadership pre-LEAD and their self-reported well-being pre- and post-LEAD with linear regression (see Table 10). Looking at pre-LEAD stress, strain, and burnout, there were only two significant relationships. Pre-LEAD transformational leadership predicted 16% of the variance in pre-LEAD stress ($\beta = .40$, $p = .001$), and 33% of the variance in pre-LEAD professional efficacy ($\beta = .58$, $p < .001$). When testing to see if pre-LEAD transformational leadership predicted leader well-being post-LEAD, post-LEAD stress was the only significant relationships with pre-LEAD transformational leadership explaining 18% of the variance in post-LEAD stress ($\beta = .43$, $p = .004$).

There were no significant relationships between leader self-reported transformational leadership pre-LEAD and direct report well-being either pre- and post-LEAD.

Table 10.

Regression Analyses for Leader and Direct Report Well-Being Indices Pre- and Post-LEAD with Pre-LEAD Leader Self-Reported Transformational Leadership as the Predictor (N = 72)

	Stress		Strain		EE		Cynicism		PE	
Leader Outcomes	β	R2Δ	β	R2Δ	β	R2Δ	β	R2Δ	β	R2Δ
pre-LEAD	.40[b]	.16[b]	.16	.03	.23	.05	.20	.04	.58[c]	.33[c]
post-LEAD	.43[b]	18[b]	.19	.04	.17	.03	.04	.00	.18	.40
DR Outcomes										
pre-LEAD	-.02	.00	.05	.00	-.08	.00	.04	.00	-.02	.00
post-LEAD	-.04	.00	-.06	.00	-.23	.05	-.18	.03	-.18	.03

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Note. EE = emotional exhaustion; PE = professional efficacy; DR = direct report

Direct report pre-LEAD reported transformational leadership. Linear regression was also used to analyze the predictive relationships between direct reports' ratings of their leaders' transformational leadership pre-LEAD and direct reports' well-being pre- and post-LEAD. Pre-LEAD transformational leadership was a significant predictor of all well-being indices pre-LEAD (see Table 11). Specifically, direct report ratings of leaders' pre-LEAD transformational leadership predicted 8% of the variance in direct report stress ($\beta = -.28$, $p < .001$), 2% of the variance in strain ($\beta = -.13$, $p = .019$), 5% of the variance in emotional exhaustion ($\beta = -.21$, $p < .011$), 10% of the variance in cynicism ($\beta = -.32$, $p < .001$), and 12% of the variance in professional efficacy ($\beta = .35$, $p < .001$). Direct report' perception of their leaders pre-LEAD transformational leadership was also predictive of the three indices of burnout post-LEAD, but not stress or strain (see Table 11). Specifically, direct report reported pre-LEAD transformational leadership predicted 13% of the variance in post-LEAD emotional exhaustion ($\beta = -.36$, $p = .001$), 24% of the variance in post-LEAD cynicism ($\beta = -.49$, $p < .001$), and 26% of the variance in post-LEAD professional efficacy. See Table 12 for means, standard deviations, and correlations of leader and direct report self-report data pre- and post-LEAD.

Table 11.

Regression Analyses for Direct Report Well-Being Indices Pre- and Post-LEAD with Pre-LEAD Direct Report Reported Transformational Leadership as the Predictor (Pre-LEAD N = 339; Post-LEAD N = 83)

	Stress		Strain		EE		Cynicism		PE	
	β	R2Δ	β	R2Δ	β	R2Δ	β	R2Δ	β	R2Δ
pre-LEAD	-.28[c]	.08[c]	-.13[a]	.02[a]	-.21[c]	.05[c]	-.32[c]	.10[c]	.35[c]	.12[c]
post-LEAD	-.18	.03	-.11	.01	-.36[b]	.13[b]	-.49[c]	.24[c]	.51[c]	.26[c]

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Note. EE = emotional exhaustion; PE = professional efficacy

Table 12. *Correlation Matrix for All Leader and Direct-Report (aggregate by leader) Self-Reported Study Variables Pre- and Post-LEAD (N = 72)*

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
Leader														
Pre-LEAD														
1. Transformational Leadership	2.61	0.77	--											
2. Leader Efficacy	2.84	0.81	.79[c]	--										
3. LEAD Motivation	4.01	0.47	.00	-.02	--									
4. Stress	0.26	0.35	.43[b]	.43[b]	-.23	--								
5. Strain	0.52	0.46	.20	.16	.00	.57[c]	--							
6. Exhaustion	1.22	1.09	.24	.303[a]	.00	.55[c]	.52[c]	--						
7. Cynicism	0.58	0.92	.27[a]	.23	-.23	.50[c]	.35[b]	.41[b]	--					
8. Prof. Efficacy	3.83	1.04	.55[c]	.64[c]	.03	.32[a]	.06	.06	-.17	--				
Post-LEAD														
9. Transformational Leadership	3.20	0.47	.41[b]	.45[b]	.35[a]	.12	.06	.13	-.10	.42[b]	--			
10. Leader Efficacy	3.39	0.45	.14	.37[a]	.19	.10	-.01	.08	-.05	.28	.74[c]	--		
11. Stress	0.76	0.59	.43[b]	.34[a]	.11	.41[b]	.62[c]	.45[b]	.26	.16	.12	-.09	--	
12. Strain	0.60	0.45	.19	.13	.11	.21	.55[c]	.52[c]	.20	-.12	-.05	-.15	.46[b]	--
13. Exhaustion	1.49	1.10	.17	.11	-.25	.42[b]	.28	.68[c]	.54[c]	-.19	-.07	-.16	.36[a]	.34[a]
14. Cynicism	0.86	1.07	.04	.05	-.28	.28	.11	.23	.79[c]	-.27	-.22	-.25	.15	.22
15. Prof. Efficacy	4.30	0.88	.18	.10	.26	-.07	-.08	-.21	-.54[c]	.61[c]	.39[a]	.35[a]	-.05	-.25
Direct Report														
Pre-LEAD														
16. Transformational Leadership	3.10	0.55	.18	.33[a]	.01	.12	.10	.11	-.05	.340[a]	.29	.26	.03	.01
17. SE Initiative	4.32	0.50	.10	.16	.11	.07	.18	.08	.10	.07	.23	.17	.23	.09
18. SE Effort	3.93	0.36	-.03	.07	.34[a]	-.19	-.02	.02	.05	-.04	.25	.22	.08	.11
19. SE Perseverance	4.11	0.35	-.06	-.05	.14	.07	.08	.12	.06	.02	.08	.07	-.05	.03

Continued below.

Table 12. (continued)

	Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
20.	Trust	5.60	0.58	.28[a]	.37[b]	-.08	.18	.04	.20	.16	.17	.25	.33[a]	.16	.04
21.	Stress	0.76	0.46	-.01	-.17	-.07	-.08	-.21	-.20	-.18	.00	-.03	-.07	-.11	-.01
22.	Strain	0.81	0.40	.13	.11	-.20	.17	-.06	.19	.08	-.02	.23	.24	-.01	.05
23.	Exhaustion	1.33	0.72	-.03	-.08	-.10	.20	-.01	.10	.19	-.24	.01	.07	.04	.00
24.	Cynicism	1.08	0.59	.07	.04	.02	.09	-.08	.19	.17	-.20	.20	.15	.07	.02
25.	Prof. Efficacy	4.52	0.67	-.03	.04	.15	.10	-.01	.09	.07	.08	.39[a]	.37[a]	-.03	-.07
Direct Report: Post-LEAD															
26.	Transformational Leadership	3.11	0.63	.22	.29	-.39[a]	.39[a]	-.03	.18	.13	.18	-.04	.06	-.04	-.17
27.	SE Initiative	4.40	0.42	.09	-.06	.03	.02	.16	-.10	.00	.05	-.01	-.12	.26	.17
28.	SE Effort	3.91	0.56	-.19	-.14	.09	-.30	-.08	-.06	.05	-.13	-.31	-.03	-.09	.17
29.	SE Perseverance	4.17	0.50	-.14	-.26	.00	.08	.16	.06	.01	-.10	-.32	-.26	.07	.20
30.	Trust	5.64	0.81	.35	.46[a]	-.43	.27	-.41	-.19	-.03	.33	-.01	.09	-.12	-.34
31.	Stress	0.47	0.32	-.05	.00	-.06	.05	-.09	-.03	.02	-.12	-.18	-.30	-.12	-.09
32.	Strain	0.82	0.41	-.05	-.01	-.19	-.02	.02	.02	.27	-.11	-.20	-.27	.13	.05
33.	Exhaustion	1.30	0.70	-.22	-.36[a]	-.12	.12	.11	.11	.18	-.35[a]	-.29	-.39[a]	.10	.08
34.	Cynicism	0.96	0.64	-.18	-.14	.01	.15	.09	.07	.15	-.20	-.05	-.05	-.01	.20
35.	Prof. Efficacy	4.52	0.74	-.17	-.16	-.11	-.12	.03	.15	.07	-.25	-.37	-.13	-.10	.07
Research Variable															
36.	Leader Group	--	--	.78[c]	.77[c]	-.13	.61[c]	.42[b]	.39[b]	.37[b]	.49[c]	.28	.14	.435[b]	.11

Note. Leadership Efficacy = Leadership Self-Efficacy; SE = Self-Efficacy; Perc = Perseverance; EE = Emotional Exhaustion; Prof. Efficacy = Professional Efficacy

Note. Lead Group: 0 = Group1; 1 = Group 2

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Continued below.

Table12. (continued)

Variable	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Leader: Post-LEAD														
14. Cynicism	.58[c]	--												
15. PE	-.50[b]	-.64	--											
Direct Report														
Pre-LEAD														
16. Transformational Leadership	.03	.07	.30	--										
17. SE Initiative	-.07	.10	.29	.36[b]	--									
18. SE Effort	-.03	.12	-.04	.24	.39[b]	--								
19. SE Perseverance	.04	.13	.20	.07	.40[b]	.48[c]	--							
20. Trust	.28	.17	.04	.77[c]	.24	.14	.02	--						
21. Stress	-.11	-.15	.11	-.34[a]	-.17	-.31[a]	-.19	-.22	--					
22. Strain	.18	.10	-.04	-.03	.18	-.32[a]	-.32[a]	.11	.43[b]	--				
23. Exhaustion	.28	.20	-.17	-.15	-.01	-.36[b]	-.31[a]	-.02	.30[a]	.64[c]	--			
24. Cynicism	.14	.05	-.17	-.21	.14	.01	-.31[a]	-.07	.23	.62[c]	.63[c]	--		
25. Prof. Efficacy	-.04	.12	.19	.43[b]	.43[b]	.50[c]	.44[b]	.30[a]	-.20	-.17	-.42[b]	-.25	--	
Post-LEAD														
26. Transformational Leadership	.23	.09	-.01	.42[a]	-.01	-.47[b]	-.08	.48[b]	.09	.24	.00	-.30	.22	--
27. SE Initiative	-.04	-.07	.33	.25	.17	-.29	-.05	.31	.17	.20	.11	.02	.00	.32
28. SE Effort	-.16	.02	.04	.03	-.02	.14	.35[a]	.10	-.07	-.10	-.10	-.33	-.02	.16
29. SE Perseverance	.06	-.06	.14	.02	-.02	-.24	.40[a]	.08	-.05	-.09	.07	-.28	-.22	.31
30. Trust	.33	.07	-.07	.43	-.11	-.22	-.22	.65[b]	.23	.04	-.31	-.45[a]	.22	.90[c]
31. Stress	.00	.26	-.19	-.22	.05	-.29	-.10	-.25	.30	.23	.42[a]	.14	-.10	.12
32. Strain	.10	.45[a]	-.36	-.09	-.03	-.44[b]	-.46[b]	-.08	.30	.45[b]	.44[b]	.24	-.04	.10
33. Exhaustion	.14	.22	-.27	-.19	.19	-.34[a]	-.31	-.18	.16	.34[a]	.71[c]	.50[b]	-.18	-.12
34. Cynicism	-.11	.25	-.09	-.11	.37[a]	-.04	-.11	-.26	-.01	.23	.54[b]	.58[c]	-.06	-.35[a]
35. Prof. Efficacy	.06	-.12	-.05	.08	-.08	-.08	.28	.11	-.10	-.06	-.05	-.34[a]	.10	.47[b]
Research Variable														
36. LEAD Group	.08	.11	.11	.23	.22	.04	-.02	.23	-.23	.12	.02	.14	.04	.19

Continued below.

Table 12. (continued)

	Variable	27	28	29	30	31	32	33	34	35	36
27.	SE Initiative	--									
28.	SE Effort	.31	--								
29.	SE Perc	.54[b]	.66[c]	--							
30.	Trust	.40	.11	.03	--						
31.	Stress	-.12	-.06	-.10	-.12	--					
32.	Strain	-.02	-.09	-.31	.00	.57[c]	--				
33.	Exhaustion	-.13	-.20	-.14	-.33	.47[b]	.64[c]	--			
34.	Cynicism	-.30	-.33[a]	-.29	-.67[b]	.48[b]	.37[a]	.68[c]	--		
35.	Prof. Efficacy	.35[a]	.73[c]	.64[c]	.32	-.09	-.07	-.15	-.43[b]	--	
Research Variable											
36.	LEAD Group	-.13	-.19	-.19		.02	.00	-.03	.12	-.21	--

Note. Leadership Efficacy = Leadership Self-Efficacy; SE = Self-Efficacy; Exhaustion = Emotional Exhaustion; Prof. Efficacy = Professional Efficacy

Note. Lead Group: 0 = Group1; 1 = Group 2

Note. $N = 72$ represents the leaders who completed at least one coaching program. Because of participant withdrawal or missing data over the course of the three measurement occasions there was a significant difference in the N between correlations (range = 17 – 72).

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Hypothesis 6: The increases in transformational leadership are moderated by leaders' pre-LEAD levels of (a) leadership self-efficacy and (b) LEAD motivation.

Latent growth curve modeling was used to test Hypothesis 6. For leader data[5] two models were tested: The first model, which examined the effect of predictors on leaders, and the second model examined the predictive effects on leaders nested within organization.[6,7] In all cases time was coded as 0 (Time 1), 1 (Time 2) and 2 (Time 3). Analyses collapsing data to examine pre- and post-LEAD coded Time as 0 (pre-LEAD) and 1 (post-LEAD). Effect sizes were calculated as the percent variance accounted for by the model. All models were tested with both fixed and random effects and the best fitting models in all cases were those with a random intercept and fixed slopes.

*Model 1 pre- post- LEAD***.** A model using Time, pre-LEAD leadership self-efficacy, and pre-LEAD motivation for the program as predictors of the growth in transformational leadership pre- and post-LEAD was tested. Time, self-efficacy, and the Time x self-efficacy interaction were all significant predictors. Together 11% of the growth in transformational leadership was predicted by the model. Time ($t(63) = 7.54$, $p < .001$) was a significant predictor where there was a .83 growth in transformational leadership over time. Leadership self-efficacy was also a significant predictor ($t(109) = 11.68$, $p < .001$), such that there was a .84 growth in transformational leadership over

[5] For all analyses N = 72, representing the 59 leaders who completed the LEAD program and the 13 who completed at least one coaching session (session frequency of participate who withdrew: one = 1; two = 4; three = 3; five = 1; seven = 3; eight = 1). The pattern of significance did not change with the exclusion of the 13 participants who withdrew before completing all 10 coaching sessions and were retained given that they still participated in significant parts of the program (e.g., feedback).

[6] In all cases the un-nested models were a better fit based on BIC and AIC criteria (i.e., lower values for the un-nested models). This was true for both Hypothesis 5 and 6.

[7] Models with demographic predictors (i.e., gender, age, organization, time in organization, coach) were tested. Null models had a better fit than the alternate models with the demographic predictors. This was true for both Hypothesis 5 and 6.

time with every unit increase in pre-LEAD self-efficacy. The interaction between Time x Self-efficacy ($t(60) = -5.28$, $p < .001$), such that there was a .57 decrease in the growth of transformational leadership over time for those who were higher in leadership self-efficacy, indicating that those with lower levels of self-efficacy reported the most improvement in their transformational leadership over time. Motivation was not a significant predictor ($t(109) = .53$, $p = .561$), nor were any of the interactions with motivation (Time x motivation: $t(61) = 1.63$, $p = .108$); Leadership Self-Efficacy x Motivation: $t(109) = 1.22$, $p < .225$; Time x Self-Efficacy x Motivation: $t(58) = -.85$, $p = .39$; see Table 13 for model statistics).

Model 2 weekly data. A model was also tested looking at the growth in weekly transformational leadership and whether Time, pre-LEAD self-efficacy and pre-LEAD motivation were meaningful predictors. The model predicted 51% of the variance in weekly transformational leadership. Time was a significant predictor ($t(516) = 12.57$, $p < .001$), such that there was a .09 growth weekly transformational leadership with every unit increase in time. Pre-LEAD leadership self-efficacy was also a significant predictor ($t(93) = 7.52$, $p < .001$) with a .62 growth in transformational leadership for every unit increase of Self-Efficacy. The Time x Self-Efficacy interaction also was significant ($t(526) = -4.35$, $p < .001$), such that there was a decline in transformational leadership over time for those with higher levels of pre-LEAD self-efficacy. This finding indicates that leaders who had lower leadership self-efficacy prior to LEAD showed the strongest growth over time. The interaction between Time x Motivation also was significant ($t(520) = 2.36$, $p = .019$), such that there was a .02 growth in transformational leadership over time with every unit increase in pre-LEAD motivation for the program. This finding

indicates that those who were more motivated for the program also saw the most growth in their self-reported transformational leadership over time. There also was a significant interaction between Self-Efficacy x Motivation ($t(94) = 2.23$, $p = .028$), such that with every unit increase in self-efficacy and motivation there was a .19 growth in transformational leadership. Finally, there was a significant three-way interaction between Time x Self-Efficacy x Motivation ($t(518) = -2.53$, $p < .001$), such that over time increased levels as self-efficacy and motivation resulted in less growth in transformational leadership (-.02). That is, leaders who had high motivation and low self-efficacy prior to LEAD tended to experience the most growth in their transformational leadership over time (see Table 13 for model statistics).

Both model 1 and 2 also were run as a replication between Groups 1 and 2. For both the pre- and post-LEAD and the weekly data, there were inconsistent results between the Groups. In both cases there were significant predictive effects for Group 1, but not for Group 2 (see Appendix I for the model statistics).

Table 13

Growth Curve Models Testing the Prediction of Time, Time 1 Leadership Self-Efficacy, Motivation, and Their Interactions on the Growth in Transformational Leadership (N=72)

Transformational Leadership	Model 1		Model 2	
	Pre- Post LEAD		Weekly	
	Est FE	SE	Est FE	SE
Constant	-.31[c]	(.07)	-.47[c]	(.08)
Level 1				
Time	.83[c]	(.11)	.09[c]	(.01)
Leadership Efficacy (LSE)	.84[c]	(.07)	.62[c]	(.08)
Motivation	.04	(.07)	-.04	(.08)
Time x LSE	-.57[c]	(.11)	-.03[c]	(.01)
Time x Motivation	.18	(.11)	.02[a]	(.01)
LSE x Motivation	.09	(.08)	.19[a]	(.09)
Time x LSE x Motivation	-.10	(.11)	-.02[a]	(.01)
% Variance Explained	11%		51%	

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Note. Est FE = Estimate of fixed effects; SE = standard error; LSE = leadership self-efficacy

Hypothesis 7: Increases in direct report (a) self-efficacy, and (b) trust in leader mediate the relationship between increases in direct report ratings of their leaders' transformational leadership and increases in their own self-reported well-being (i.e., decreases in stress, strain, and burnout).

Because the premises of Hypothesis 7 were not supported (i.e. direct report outcomes were not significant increased), Hypothesis 7 could not be tested. That is, there was no significant increase in direct reports' rating of their leaders' transformational leadership (i.e., Hypothesis 4). Of the three indices of well-being (stress, strain, and burnout) the only direct report outcome that had a change was stress, where a paired t-test

indicated a significant decrease direct report stress from pre-LEAD to post-LEAD ($t(82) = 9.30$, $p < .001$). The significant decrease in stress was replicated in Group 1 ($t(54) = 8.99$, $p < .001$) and Group 2 ($t(27) = 3.80$, $p = .001$). There was significant increases in the effort factor of direct self-efficacy ($t(82) = -3.41$, $p = .001$). However, when the groups were examined separately, there was a significant increase in direct report effort for Group1 ($t(54) = -4.16$, $p < .001$) but not Group 2 ($t(27) = -.29$, $p = .774$). There was also a significant increase in direct report trust ($t(82) = -2.00$, $p = .048$), but when the paired t-tests were analyzed separately for the two groups, the results were no longer significant (Group 1: $t(54) = -1.37$, $p = .175$; Group 2: $t(27) = -1.58$, $p = .126$).

Study 2: Discussion

Study 2 was designed to examine the efficacy and effect of the LEAD program in improving leadership behaviours as well as the well-being of leaders and their direct reports. Using the four components of Kirkpatrick's (1996) model of training evaluation, I evaluated the extent to which leaders held positive reactions to the program and reported changes in their own behaviour. I also examined direct report's perceptions of their leaders' behaviours. Finally, I examined both leaders' and direct reports' well-being over the course of the LEAD program.

Level 1: Reactions

Level 1 of Kirkpatrick's model (i.e., reactions towards the training), and the first research goal of this study, was supported. Leaders felt that the program was beneficial, they reported having made progress throughout the 10-weeks of the LEAD program, and most felt they had met their program goals. The format of LEAD was derived through focus groups with SMEs, which clearly resulted in a design that resonated with leaders.

Leader feedback spoke to the practicality of the program design, indicating that the skills they learned were transferable to their workplace. Their ability to transfer the skills of the LEAD program was largely attributed to the coaching format, flexibility of the coaching and program design, and the rapport that leaders had with their individual coaches.

The design of LEAD purposefully respected leaders' schedules and flexed to their individual interests and needs. Although this created inconsistencies in the participant experience, leaders clearly responded to its tailored approach.

Level 2: Learning

One singular formal learning focus of the program was for leaders to have a deep understanding of the full leadership model and what a transformational leader 'looked' like. There was no significant increase in leaders' ability to identify effective transformational leadership behaviours over the course of the LEAD program. However, the overarching themes of effective leadership that were identified prior to the program (i.e., support and develop direct reports, effective communicator) already spoke to a high level of awareness of transformational leadership. Moreover, the open-ended question that leaders were asked (*what are the qualities and behaviours that make an effective leader?*) was not specific to transformational leadership, and in no instances did a leader identify a characteristic that was not either transformational or an adaptive part of the full leadership model. These findings indicate that even prior to the LEAD program, participating leaders were aware of effective leadership behaviours.

Based on the leader and coach feedback and participant learning, there are elements of the program that stand out as opportunities for refinement. The first are the formalized program materials. The formal learning material was used to create a common

language and baseline knowledge to anchor coaching conversations. Finding ways to make the formal content more engaging would benefit the program. In its current form, the LEAD manual asked leaders to read content each week to prepare for the topic of their coaching session. Adding in more interactivity in this pre-work may benefit the program design and leader engagement. Finding podcasts, and videos that use storytelling to make the content feel more relevant to the participants could be a simple and worthwhile program enhancement. Storytelling is known to be an effective way to solidify learning in organizational training (Vaara, Sonenshein, & Boje, 2016). Using external storytelling mechanisms may create a richness to the formal learning opportunities that would augment the current material.

Level 3: Behaviour Change

Transformational leadership and self-efficacy.

The significant effect of time, and non-significant Group x Time interaction in the analyses of both changes in transformational leadership and leadership self-efficacy is problematic. Although Group 1, the first intervention group, significantly improved their self-reported transformational leadership and leadership self-efficacy, so did Group 2 during the control period. It is possible that completing the survey at Time 1 provided Group 2 leaders with enough of a framework for transformational leadership behaviours that they were able to purposefully concentrate on those behaviours prior to their coaching.

The weekly data for both transformational leadership and leadership self-efficacy strengthen the case for the efficacy of the program. In both instances, there were significant increases in the behaviours reported over time, with the rate of change being strongest in the first 6 weeks of the program. The replication of the weekly results again

supported the idea that the LEAD program was successful in improving leaders' transformational leadership and self-efficacy.

Further to the leader self-report data, I hypothesized that leaders' direct reports would also report a significant increase in their leaders' transformational leadership over the course of the LEAD program. This hypothesis was not supported. Although, the results were trending in the expected direction, direct reports did not report a significant change in their leaders' transformational leadership over the 10-weeks of the LEAD program.

Together, the strongest changes in weekly data taking place at the beginning of the LEAD program, and the lack of significant changes observed by direct reports may indicate a lack of momentum in the latter weeks of the program. It is possible that by extending the program or increasing the number of successive coaching conversations that stronger effects may have emerged. Moreover, matching the leaders self-reported weekly data collection with similar direct report data could have highlighted nuances in the temporal arc of transformational leadership as observed by direct reports.

Self-efficacy and motivation. In addition to increases in leadership self-efficacy because of the LEAD program, leadership self-efficacy and motivation for the LEAD program were hypothesized to predict growth in transformational leadership. This analysis indicated that leaders who entered the program with the lowest levels of self-efficacy in their transformational leadership reported the most growth in transformational leadership. Moreover, although motivation for the LEAD program itself was not a significant predictor of transformational leadership growth, the interactions between motivation for the program and Time, leadership self-efficacy, and the three-way

interaction between motivation, leadership self-efficacy, and Time was significant. Together these results suggest that the leaders who made the most significant gains throughout the 10-weeks of the LEAD program were those who were the most motivated for the program and had the lowest levels of leadership self-efficacy prior to the program. These results reaffirm self-efficacy as a precursor to transformational leadership change and suggest criteria for future iterations of the LEAD program. The LEAD program in its current state may be best suited to more inexperienced leaders who lack confidence in their leadership abilities but are motivated to develop in this space.

Leader Well-being.

Along with transformational leadership and leadership self-efficacy, I hypothesized that the LEAD program would improve the well-being of participating leaders and their direct reports. The results did not support this hypothesis. There were significant changes in leader well-being over the course of the LEAD program; however, these changes were not in the hypothesized direction, aside from professional efficacy. Leaders reported their stress, strain, emotional exhaustion and cynicism as increasing over the course of the LEAD program.

It is possible that the effort-reward model (Siegrist, 1996) is at play in the early stages of transformational leadership development. The effort-reward model suggests that employee well-being is negatively affected when the demands of one's job outweigh the rewards. Based on direct-report responses of their leaders they were not able to see a significant increase in transformational leadership behaviour over the 10-weeks of the LEAD program. However, the weekly results from leaders and overall results of leadership self-efficacy and professional efficacy suggest that leaders noticed changes in their confidence and the beginning of changes in their leadership behaviour. This

suggests that leaders were putting forward significant effort to improve their leadership, possibly without any positive reinforcement in the short-term for this effort, and eventually depleting their personal resources. This effort reward imbalance and resource depletion could explain the decrease in leader well-being during the LEAD program.

Level 4: Results of Training

Transformational leadership as a predictor for well-being.

Leader well-being. Pre-LEAD transformational leadership was a significant predictor of post-LEAD leader stress. In both cases transformational leadership unexpectedly predicted an increase in leaders' experience of stress. Again, the effort-reward model can explain this positive relationship. A lack of positive reinforcement from direct reports may explain the increase in stress experienced by leaders. It also is possible that the psychosocial environment of the workplace is not always supportive of transformational leadership behaviours. Low person-organizational value congruence is positively related to employee burnout (Siegall & McDonald, 2004). The disconnect of valuing and demonstrating transformational leadership in an environment that does not value or reward the behaviours could lead to decreased leader well-being. Leaders' organizational value congruence was not be tested in this study, however future work would benefit by its inclusion.

Direct report well-being. Leaders' self-reported transformational leadership pre-LEAD did not significantly predict direct report well-being either pre- or post-LEAD. However, direct reports' perspective on their own leaders' pre-LEAD transformational leadership was a significant predictor of direct repot stress, strain, and burnout pre-LEAD, and burnout post-LEAD. Unlike leader well-being, in all cases the relationship

between transformational leadership and direct report well-being was in the expected direction (i.e., transformational leadership was negatively related to stress, strain, and burnout). Together indicating that direct reports' perspective on their leaders' behaviour has a significant short-term effect on their well-being, and a lasting effect on experiences of burnout. Although direct reports did not recognize a significant improvement in their leaders' transformational leadership behaviour over the course of the LEAD program, the fact that pre-LEAD transformational leadership was no longer a significant predictor of post-LEAD stress and strain does suggest that positive changes were being experienced and were already influencing direct report well-being. Leadership had a longer lasting effect on experiences of burnout, which was the only measure of well-being contextualized in the workplace. The leader-direct report relationship is also contextualized in the workplace, the shared environment could explain why the relationship has more longer lasting effects.

There was no significant relationship between leaders' self-report and direct report responses of leaders' transformational leadership. Correlations between the two reporting sources were both non-significant (r = .18 pre-LEAD, r = -.04 post-LEAD). The lack of relationship between the two reporting sources highlights the importance of multi-source data when evaluating intervention programs like the LEAD program. Although together the data make it challenging to report on a single source of truth, the reality is that both data sources reflect the experience of their respondents. The non-significant relationship between leader and direct report reported transformational leadership helps to explain why direct report perspective predicted direct report indices of well-being, but not leaders self-report. These relationships provide insights for both consultants and academics as

they plan on how to best evaluate their leadership programs. It is critical to capture feedback and insights from the population the program is looking to effect, as data from different sources, at least in this program, have dissimilar trends.

Future Directions & Limitations

The LEAD program design used a model that allowed leaders to immediate apply, practice, and get feedback on new skills, and this was a design that resonated with leaders. Although the evaluation provided weak evidence for the efficacy of the program, significant changes in weekly self-reported transformational leadership and leadership self-efficacy were seen. Future leadership development opportunities should consider embracing this model, while being more directive about other elements like social learning. Social learning theory (Bandura, 1978) recognizes the power of learning from ones' environment. During the LEAD program leaders were encouraged to model certain behaviours (e.g., health behaviours like taking breaks) that would promote social learning in their direct reports. The extent to which this happened is unknown in the current study, however future research should prioritize collecting data specifically around these social aspects and the program designed to more deliberately integrate such social modeling into the program.

Future research should also consider the value of leveraging the cohort more explicitly in the program design. Technology is enabling learning and program design, and creating opportunities for both individually tailored development, like the LEAD program, while also adding cohort elements that could drive social support and social learning. Team and group learning approaches have been successful in training mental health awareness (Dimoff & Kelloway, 2016) and civility (Leiter et al., 2012). Delivering

the LEAD program to the entire leadership team within an organization could promote culture change and providing social support for the change. Future iterations should test this approach compared to the mixed cohort approach taken in the current study.

The evaluation of the LEAD program did show that transformational leadership has a significant positive relationship with direct report well-being, and unexpectedly a negative relationship with leaders' own well-being (increases in stress). Future research should consider extending this work to look at the effect of leadership on other forms of well-being, particularly more positive measures of well-being (e.g., engagement, life satisfaction). Inceoglu et al. (2018) in their review of the literature on leadership and employee well-being suggested that leadership may affect different kinds of well-being in different ways and through different processes. Addressing this gap in the literature will be important for better understanding the effect of leadership on employee well-being. Furthermore, future research should extend that recommendation by looking at different forms of well-being on not only direct report but also leaders' own well-being.

Just-in-time learning is a trend in learning and development that is rapidly being adopted (Riley, Rivera, Atienza, Nilsen, Allison, & Mermelstein, 2011). Technology is now able to enable just-in-time learning by building mobile applications to support interventions and successfully promote behaviour change (Fjeldsoe, Marshall, & Miller, 2009). For future versions of the LEAD program, a mobile platform could be leveraged to house resources, connect leaders to other leaders, and potentially provide in-the-moment coaching support. In pursuing technology to augment program design, the participant experience must be top-of-mind including inclusiveness, and simplicity.

The current dissertation contributes to our theoretical understanding of whether leadership development interventions can affect leaders' behaviours and well-being, and ultimately, direct reports' well-being. However, there were limitations to the study that future research should address when necessarily furthering work in this area.

Sample size and drop-out. There were some methodological limitations to this research that must be taken into consideration when evaluating the results and should be addressed with future research. The small sample size limited the analyses that could be conducted. Future research should look to increase the number of leaders who go through the intervention to more thoroughly evaluate the effects the intervention. In the current study I saw several outcomes trending in the expected direction. In the case of LEAD I reached out to a number of different organizations to recruit leaders, however within the organizational recruitment there was varying levels of a bold sponsorship for the program. Working more consistently with a pool of leaders within a smaller number of organizations where leaders understand the value that their organization places on the initiative would serve as an improvement for future intervention research.

On average 27% of direct reports provided feedback. Future research should aim to increase this proportion to assure that the data does not suffer from selection bias. Selection bias has been a chronic concern of social research (Heckman, 1990), and continues to be a concern for the interpretation of the data in the current study. Given the lower response from direct reports, it is possible that those with extreme views were motivated to provide feedback creating a skewed representation. Future research would benefit from mitigating direct report drop out through innovative ways to incentivize responses across time, such as structuring a process and toolkit to support leaders sharing

back how and what they have learned from the training with their direct reports. Although the LEAD program encouraged leaders to share the information with their teams, there were no specific processes in place to support the activity aside from the leader manual. The act of engaging direct reports more directly in the research through knowledge sharing may have engaged them and encouraged more consistent responses to the pre- and post-LEAD surveys. Another solution that should be considered is to minimize the length of the measurement tools for both direct reports and leaders. Employees are asked to provide considerable feedback to their organizations over the course of a year, and subsequently tolerance for traditional surveys is weaning. Survey fatigue needs to be a consideration for evaluation practices within organizations, and for academics looking to conduct organizational research.

Additionally, consideration should be given to providing aggregate feedback from the leadership reports to both leaders and their direct reports as an incentive to direct reports for their continued participation in the research. Such transparency could be reported on an individual leader level, organizational level, or whole sample level. Shared leadership reporting would likely enhance direct report engagement in the intervention as well as providing further accountability to leaders to act on their direct reports' feedback. Furthermore, although beyond the intent or scope of the current intervention and research, future intervention designs should consider how to incorporate direct reports more integrally into the design of the intervention. This could be accomplished by holding information sessions about the intervention, offering workshops and information on some of the same topics that the intervention would be covering with the leaders (e.g., communication, conflict, coping strategies). Taking a more integrational approach with

the intervention may help not only with the matched response rate across measurement occasions but may also positively affect the efficacy of the intervention.

Random assignment. One of the biggest strengths of the methodological design of the current research was the wait-list control design. Initially the intention was to randomly assign all participants and participating organizations to be part of either the first intervention or a wait-list control group. In practice, complete random assignment was not possible. There were two organizations whose participation relied on their whole leadership team participating in the intervention. For all other organizations who participated, participants were initially randomly assigned to be in either the intervention or wait-list control group. In three cases, participants were moved into another group to accommodate work and life demands that were not easily managed otherwise.

The nine organizations that participated in the LEAD program spanned several industries (i.e., healthcare, non-profit, technology, financial services, retail, emergency services, and telecom). The leaders from the organizations were educated – over 60% had post-secondary degrees and were tenured in their careers. Although there were no notable demographic differences between the organizations, Group 1 did have more representation from the healthcare and retail sectors, and all leaders from the financial services and telecom sectors were assigned to Group 2. Despite the lack of demographic differences between leaders from the different organizations, there could be cultural differences that were not assessed, or elements of the organizational cycle (e.g., fiscal year-end activities) that could have influenced the results. Moreover, the lack of notable demographic differences between leaders in the nine organizations also limits the generalizability of the results.

Participants also were randomly assigned to their LEAD coach. There were two exceptions to coach random assignment: The first exception was that during the first iteration of the LEAD program there was one internal organizational coach (which was the organizations' requirement for their participation in the program). All the participants from that organization were asked if they felt more comfortable with an internal or external coach. All participants who favoured an external coach were randomly assigned to one of three external coaches available, and those who favoured an internal coach were assigned to that individual. The other exception to coach random assignment was during the second phase of the program. When this iteration of the program began there was only one coach available for participants and the first five participants were assigned to this coach. When more participants were recruited, a second coach was brought on board and the remaining participants were assigned to that coach.

Post hoc analyses reveal that there were no significant differences in the demographics of the groups that were randomly assigned to their coach compared to those who were not. Post hoc analyses were also conducted to look at differences between the groups on their progress throughout the program. Again, there were no significant differences found between the participants on transformational leadership, leadership self-efficacy, motivation for the LEAD program, or transfer of training.

Demand Effects. The control group (i.e., Group 2) significantly increased on all key outcomes, transformational leadership, self-efficacy, stress, strain, burnout, during the control period of the study. The only notable difference between groups 1 and 2 was that Group 2 leaders consistently reported significantly higher transformational leadership than Group 1 leaders. It is possible that there was an effect of the time of year

that the study took place, although that is unlikely given that the same trend in the control group was seen across the two phases of the LEAD program. The most plausible reason is that Group 2 was influenced by demand effects. That is, the anticipation of their participation in the program primed them to focus on their leadership behaviours, and they felt that they made positive changes in their leadership over the control period. Notably they also experienced the same increase in stress, strain, and burnout as Group 1, which contributes to the theory that focused concentration on leadership behaviour change may have a negative effect on leaders' well-being in at least the short-term. Future research should consider seeking direct report feedback during the control period as well as leaders self-report data to have another observational source of any behaviour change.

Program breadth. One of the challenges of evaluating a program such as the LEAD program is breadth of topics that are covered throughout the program. In one sense the program breadth is an advantageous aspect of the program, allowing for varied yet related conversations with the leaders that allow them to consider how their leadership effects varying aspects of an organization (e.g., employee well-being, psychologically healthy workplaces). On the other hand, it is very difficult to isolate the effect of the individual aspects of the program. In future iterations of the LEAD program I would continue to leverage discussions on a breadth of topics, while allowing leaders to focus in more depth on some topics of interest, while passing over others. Although this change would further complicate the isolation of specific effects, tailoring the program content and materials to individual participants may increase engagement and have an ultimately positive effect on outcomes of interest.

Conclusion

Overall, Study 2 provides an emerging story of the efficacy of the LEAD program, and the effect that transformational leadership has on well-being. Despite the small sample, there is some compelling evidence that the LEAD program is viewed positively and although inconsistent, some analyses indicated that LEAD was effective in increasing leaders' self-efficacy in their transformational leadership, the first expectation of behaviour change. Unfortunately, these positive outcomes were not experienced by leaders' direct reports. Moreover, these outcomes were at the cost of leaders' short-term well-being. However, low-level, short-term, and well-managed stress may be ultimately beneficial to meaningful behaviour change if it does not overwhelm the individual.

Both leader and direct report well-being was predicted by transformational leadership. For leaders, transformational leadership was positively related to stress, and professional efficacy. Although these relationships were not hypothesized, they are not entirely unexpected. Any behaviour change requires belief, intention and effort in terms of time, energy, and other resources. Moreover, the self-regulation required in changing long-held behaviours can be very challenging and may deplete resources and create stress (Freedy & Hobfoll, 2017). In some environments there is an effort-reward imbalance in acting in a transformational manner, raising questions about the scope of change and organizational readiness that is required to support leadership interventions.

Although the relationship between leaders' transformational leadership and their well-being was not in the hypothesized direction after the LEAD program, the positive relationship between direct reports' perspective of their leaders' transformational leadership and their own well-being in the current study aligns with past research (e.g.,

Kelloway et al., 2012; Lee & Ashworth, 1996). The current study further supports the critical role of self-efficacy in understanding the relationship between direct reports perspectives of their leaders' transformational leadership and their own well-being.

Future research should continue to focus on the effect of leadership on employee well-being. The focus on direct report well-being has strong momentum, but better understanding the relationship between transformational leadership and leaders' well-being could inform more broadly effectual organizational initiatives, given the scope of influence that leaders naturally have. Lastly, Study 2 informs the research on training design and transformational leadership training specifically. Although there are improvements that could and should be adopted in future iterations of the LEAD program, there is compelling evidence to suggest that distance coaching is effective, and that brief low-touch coaching programs can have meaningful effect on behaviour change.

General Discussion: Summary of Studies 1 and 2

This dissertation consisted of two studies. Study 1 involved the design of the LEAD program and materials informed by interviews with subject matter experts. There were 10 clear and consistent themes that emerged as critical to successful leadership intervention programs. These 10 themes, along with the literature on employee well-being became the framework for the LEAD program.

Study 2 tested both the efficacy of the LEAD program, as well as mechanisms that support the relationship between transformational leadership and well-being. The multi-method design used in Study 2 where feedback was solicited from both the leaders themselves and their direct reports provided insights into the temporal nature of behaviour change. There was emerging evidence through the weekly data that the LEAD

program successfully increased transformational leadership behaviours and leadership self-efficacy, as reported by the leaders themselves. However, direct reports did not report a significant change in their leaders' behaviour. Direct report responses were only captured pre- and post- their leaders' participation in the LEAD program, and it could take longer for direct reports to notice the behavioural change that leaders were seeing in themselves.

The other focus of Study 2 was to test both the efficacy of the LEAD program in improving leader and subsequently direct report well-being, and better understanding the mechanisms behind transformational leadership and well-being. I was unable to find support for the LEAD program improving leader or direct report well-being. However, Study 2 did provide insights into the relationship between transformational leadership and well-being. For leaders' transformational leadership predicted increased stress, strain, and burnout. This was not predicted. Although the focus of the literature to date has been on direct report and not leader well-being, there was still emerging evidence to suggest that transformational leaders would experience improved well-being (Harms et al., 2017). There was no relationship between leaders' and direct reports' assessment of leaders' transformational leadership, and subsequently leaders' assessment of their transformational leadership did not significantly predict direct report well-being. These results reaffirm the call by Nielsen, Taris, & Cox, (2010) for multi-source evaluations of intervention research, and further highlight the need for consideration in which sources are being used to evaluate which outcomes. In Study 2 direct reports' assessment of transformational leadership was significantly predictive of direct report well-being in the expected direction. Moreover, the positive effects of transformational leadership on direct

report burnout was seen three-months later. Study 2 added support to the growing literature that has found direct report self-efficacy to be a critical mechanism in the transformational leadership and well-being relationship but failed to provide support for trust in leader. One of the goals of this study was to look at this mediated relationship with the changes in behaviours over the course of the LEAD program, however the lack of significant changes in direct report outcomes prevented testing this hypothesis. Future research should continue to explore this relationship, as the LEAD program or other leadership development programs become more consistent in their positive effect on leader and direct report behaviour change.

Theoretical Contributions

This dissertation addresses several gaps in the literature. First, it answers the call for more multi-source evaluations of intervention research (Nielsen et al., 2010). Second, it adds to the growing body of research on the psychological mechanisms that explain the relationship between transformational leadership and direct report well-being (e.g., Liu et al., 2010; Skakon, et al., 2010). Third, it extends the research and provides further momentum to understanding not only the relationship between transformational leadership and direct report well-being, but also the effect that transformational leadership has on leaders themselves. Lastly, this dissertation explored leadership development as an intervention in occupational health psychology (Kelloway and Barling, 2010).

Based on the literature and the results of this dissertation leaders have a significant effect on their direct reports well-being, and transformational leadership is a positive influence. This positive relationship between direct report well-being and

transformational leadership was not supported with leaders themselves. The minimal research that existed prior to this study focusing on leadership and leader well-being was mixed, and the current results suggest that acting in a transformational way may be detrimental to leaders' well-being, at least in the short-term. Future work should continue to better understand the theoretical framework that could explain the negative relationship between transformational leadership and leader well-being. Mechanisms such as leader-organization value congruence, effort reward imbalance, and conservation of resources have potential to explain this relationship and better inform how leadership interventions could target specific characteristics to more successfully act as an occupational health intervention.

Practical Implications

The LEAD program provides several practical considerations for organizational development. The format of the program was well received by leaders in its flexible, and individualized approach. Internal and external consultants should leverage this design framework and find ways to incorporate elements of the program design and scale them to reach a wider population of leaders. This could be accomplished by leveraging peer or internal coaches, and through a model where participants become coaches for future program iterations over time.

This dissertation highlights the relationship between leadership and employee well-being. Transformational leadership is a strong theoretical model for organizations to adopt in their leadership development where they are looking to improve their employees' work experience. However, organizations should also consider the possible strain that the

expectation of leadership development places on their leaders and look to resources that can mitigate any negative effects on employee well-being.

Although there were no significant effects of gender in this study, future research should continue to explore differing expectations that are directed at male and female leaders and how to address that through leadership development. Gender effects are well reported in the leadership literature and specifically with transformational leadership, where females appear to be more transformational than males (Bass, 1999; Carless, 1998; Eagly, Johannesen-Schmidt, & Van Engen, 2003). However, despite this natural inclination for transformational behaviours, women are still underrepresented in leadership positions (Catalyst, 2016). Moreover, there are different social expectations held for male and female leaders. Female leaders are expected to act in more socially-oriented ways and males in more achievement-oriented ways (Kidder & Parks, 2001), and when female leaders act against these social expectations there can be consequences, such as negatively impacting direct reports job satisfaction (Abel, 2019). Future research should explore integrating content into leadership development to address these dispersive social expectations for female and male leaders, or even adapting the content and program delivery with these differing expectations in mind.

Lastly, organizational interventions and development need to consider the evaluation criteria of their programs during the design phase (Arthur, Bennett, Edens, & Bell, 2003). The use of multi-source data and pre- and post- evaluations allowed for a fulsome understanding of the benefits and opportunities of the LEAD program in its current state. The focus of the LEAD program was on increasing transformational leadership skills, and well-being, but with more access to employees, like organizations

have, the evaluation could have been extended to look at performance and ultimately ROI. Organizations should more consistently rely on research to inform program design and ensure that all leadership development programs are piloted and evaluated to ensure their efficacy. Clear evaluation criteria can also highlight the employees best suited for a specific intervention, like LEAD facilitating the strongest change in leaders who had lower levels of self-efficacy at the beginning of the program but high motivation for the program.

Conclusion

Organizations are changing at a rapid pace. For example, McKinsey and Company (2018) predict that AI and automation will dramatically change the workforce and the skills that are needed over the next 15 years. Transformational leaders are well-equipped to help their direct reports navigate this rapidly changing environment by understanding individual competencies and helping their reports have confidence in their ability to adapt. The changes that AI and automation will bring (and already have brought) to the workplace will be industry agnostic. Although there have been similarly disruptive moments in the history of industrialized work (Cascio & Aguinis, 2008), to which workers and organizations have adapted, organizations still must help their employees to transition through strong leadership. Employee and leader well-being should be front of mind because these changes ensure both the successful re-skilling of the workforce and continued organizational performance.

The LEAD program begins the work to understand how leadership development can support occupational health. As employee health and well-being continues to be understood as a significant predictor of individual and organizational success, both

academics and practitioners should direct their focus to occupational health and to leaders as influencers of organizational well-being. Moreover, the continued research and evaluation of transformational leadership such as the LEAD program are critical to understand how to best equip the workforce for the future.

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Appendix A

Study 1: Interview Questions

Interview Protocol # 1: For Subject Matter Experts who conduct training:

1. What does a successful leadership development program look like to you?
2. What do you think makes leadership development programs unsuccessful?
3. What do you think the top three critical components to a successful leadership development program are?
4. What do you think the biggest challenges are in delivering leadership development programs?
5. What aspect(s) of leadership development programs do you think leaders benefit from the most?
6. What aspect(s) of leadership development programs do you think are the least beneficial?
7. What are the top reasons you believe leadership development programs don't work?
8. What do you think are the top barriers that prevent participants from transferring their leadership development knowledge to the workplace?
9. What qualities/characteristics do you think are important to have in a leadership development coach?
10. What do you think the top thing is that the leadership development coach can do to ensure that participants transfer their skills to the workplace?

Interview Protocol # 2: For Subject Matter Experts who have received training:

1. Why did you choose to participate in a leadership development program?
2. Describe the leadership development program(s) you have participated in.
3. What specific aspects of the program(s) did you find the most valuable to your leadership role?
4. Which, if any, aspects of the program(s) did you not find valuable to your leadership role?
5. What, if any, barriers did you face when trying to implement what you learned through the program(s) to your leadership role?
6. What aspects or components of the program(s) would you change or add to have made it more useful for you in your leadership role?
7. What characteristics did the individual(s) who facilitated the program(s) have that you found particularly useful?
8. What characteristics did the individual(s) who facilitated the program(s) have that you felt could be improved to make the program(s) better?
9. Are there any aspects of the program(s) that you found particularly engaging, or anything that you would change to make the program(s) more engaging for you?
10. Aside from specific leadership skills are there other topics that you think leaders would benefit from having a deeper understanding of?

Appendix B

Study 1 SME Design Factors

Table B1

Independently identified training design factors elicited from Study 1 subject matter experts (N = 9).

	Training Design Factors	Frequency	Thematic Alignment
Successful Program Elements			
1.	Engaging	1	Interactive program content
2.	Interactive	3	Interactive program content
3.	Classroom and role play	3	Interactive program content
4.	Spread out over time	2	Incorporate program to role
5.	Self-awareness component	2	Quant leadership assessment
6.	Evidence-based	1	Quant leadership assessment
Unsuccessful Program Elements			
7.	Trainer is just a lecturer	2	Interactive program content Not overly theoretical
8.	Not supportive to help participants incorporate their learning	2	Incorporate program to role maintenance plan
9.	When leaders don't do what they say	1	Facilitate leader's ownership
10.	No support from the organization	1	Incorporate program to role
11.	Attrition (because what they are being asked to do isn't clear)	1	Maintenance plan
12.	Cynicism	1	Facilitate leader's ownership
13.	Not enough time to trial behaviours	1	Interactive program content Maintenance plan
Critical Components			
14.	Active and engaging (Have activities about why they want to change)	2	Interactive program content
15.	Can work with peers	2	Interactive program content
16.	Strong content with a coach who can bring in examples	1	Not overly theoretical
17.	Someone to be accountable to	2	Rapport with coach
18.	Goal setting	1	Immediate feedback
19.	Using quantifiable measures (e.g., 360)	3	Quant leadership assessment Immediate feedback
20.	Having the program be face-to-face	1	---

21.	Having tips and take-aways at the end of each session	1	Not overly theoretical
Challenges			
22.	Maintaining motivation	1	Facilitate leader's ownership
23.	Getting participants to apply learning	1	Incorporate program to role
Most Beneficial Elements			
24.	Having a community of leaders	2	Interactive program content
25.	Leaving with "tools" or "skills"	1	Not overly theoretical
26.	Seeing leadership as a continuous learning opportunity (science)	1	---
27.	Having a facilitator that knows the organization	1	---
28.	Having specific scenarios	1	Not overly theoretical
29.	Making it memorable	1	Interactive program content
30.	Deal with in the moment problems, have someone that you can speak with immediately when something comes up	1	Flexible
31.	Sharing what you are learning with your subordinates	1	Incorporate program to role
Least Beneficial Elements			
32.	Articles to read without any discussion or how to incorporate it	1	Interactive program content Incorporate program to role
33.	Content is too vague and not related to the organizational culture	1	Individualized Incorporate program to role
Barriers to Training Transfer			
34.	Lack of maintenance (need to make learning and take-aways sustainable)	1	Maintenance plan
35.	Not being flexible enough if something isn't working	1	Flexible
36.	Not having their direct reports/leader involved in some way	1	Interactive program content Incorporate program to role
37.	Making "knowledge" to theoretical and not applicable	3	Not overly theoretical
38.	Not having coaching components where participants	1	Interactive program content Not overly theoretical Incorporate program to role

	consider their own ways how to apply the material		Maintenance plan
39.	Not enough participant ownership	1	Facilitate the leader's ownership
40.	Seeing the disconnect with what they want to accomplish and how they get there	1	Interactive program content Incorporate program to role
41.	Not having immediate feedback	2	Quant leadership assessment
42.	Not having organizational support	1	Incorporate program to role
Coach Qualities			
43.	Support the participant in developing their own ownership	2	Facilitate leader's ownership
44.	Listen and ask powerful questions (ask questions – add –suggest)	2	---
45.	Being familiar with the content and having "real life" examples (credibility)	5	Interactive program content Not overly theoretical
46.	Providing constructive feedback	2	Immediate feedback
47.	Being self-effacing	1	Rapport with coach
48.	Getting participants to open-up and facilitate them contributing to the session	1	Individualized
49.	Building rapport with the leader	1	Rapport with coach
50.	Being able to adapt content examples for the individual	2	Flexible
Facilitate Training Transfer			
51.	Regular follow-ups	1	Maintenance plan
52.	Having concrete deadlines	2	Incorporate program to role
53.	Being supportive	1	Rapport with coach
54.	One-on-one coaching	1	Individualized
55.	Being realistic about what they/the program can offer you	1	Facilitate leader's ownership
	10 Predominant Themes		
1.	Interactive program content	26	
2.	Not overly theoretical	15	
3.	Incorporate program to role	15	
4.	Quantifiable leadership assessment	8	
5.	Facilitate leader's ownership	7	
6.	Maintenance plan	7	

7.	Immediate feedback	6
8.	Rapport with coach	5
9.	Flexible	4
10.	Individualized	3

Appendix C

LEAD Program Session Overview

Session #		Summary
Session 1 	The LEAD program and You	▪ How to use the LEAD resources ▪ Expectations of the LEAD program ▪ Introduction to leadership ▪ *Activity*: Identify the qualities of "good" and "bad" leaders ▪ *Activity*: Self-assessment of your leadership style
Session 2 	Effective Leadership	▪ Different leadership styles ▪ Transformational leadership ▪ Four I's of transformational leadership ▪ Outcomes of transformational leadership ▪ *Activity*: What transformational leadership styles are you already exhibiting ▪ *Activity*: 360° assessment of your leadership style ▪ *Activity (to send to coach)*: Identify five leadership goals
Session 3 	Goal Setting	▪ Identify SMART goals ▪ Deal with barriers to achieving your goals ▪ *Discussion*: The results of your 360° assessment ▪ *Activity*: Make your goals SMART and identify potential barriers ▪ *Activity (for next session)*: Create your action plan
Session 4 	Goal Setting: Creating an Action Plan	▪ *Discussion*: Your action plan ▪ Identify steps to putting your plan into action ▪ Barriers to training transfer ▪ *Activity*: Finalize, formalize, and print out your action plan ▪ *Activity*: What are your barriers?

Session 5 	Goal Setting: Putting Your Plan Into Action	▪ Barriers to your action plan ▪ Prioritizing ▪ Time management ▪ *Activity*: Have to, want to, ought to chart ▪ *Activity*: Complete action plan feedback chart
Session 6 	Action Plan Feedback	▪ *Discussion*: Review and revise your goals and action plan ▪ *Activity*: Identify barriers to your goal progress and resources that can help overcome them
Session 7 	Leadership and Communication	▪ Verbal and non-verbal communication ▪ Active listening ▪ Working through conflict ▪ Communication styles ▪ *Activity*: Effective communication ▪ *Activity*: Assertive communication
Session 8 	Your Effect on Employee Well-Being	▪ Your Action Plan: Feedback ▪ Effect of leadership on employee well-being ▪ Coping strategies ▪ Work-life balance ▪ Demands and resources ▪ Employee development ▪ *Activity*: Your demands and how you cope
Session 9 	Your Workplace	▪ Creating a psychologically healthy workplace ▪ Policies and practices offered by organizations ▪ *Activity*: Identify potential workplace barriers to your employees performance and well-being ▪ *Activity*: What resources does your organization offer? ▪ *Activity*: What could you do to help your employees develop ▪ *Activity*: Create your maintenance action plan
Session 10 	Leadership Behaviours Review & Maintenance	▪ Review of key content and strategies that you've learned so far ▪ *Discussion*: How to maintain your leadership skills and continue your goal progress ▪ *Activity*: Finalize your post-LEAD action plan

Appendix D

Overview of Coach Training for LEAD

LEAD coaches were trained in two ways: (1) through three half-day training sessions, and (2) through weekly meetings throughout the duration of the LEAD program. These coaching sessions ensured both consistency in how the program content was being delivered and provided the coaches with support in tailoring the content to their individual leaders.

Training Sessions

LEAD coaches were trained in three half-day sessions that included learning about the LEAD design, their role as coaches, a detailed overview of the content of each session, and role playing the first two sessions.

LEAD Training Schedule

Day	Activities
Friday December 4th	**9-9:20 am** Introductions & Housekeeping
	9:20-10 am LEAD Program Overview ▪ Program timeline ▪ Session overview
	10-10:30 am Coach's Role ▪ Responsibilities ▪ Qualities a successful coach
	10:30-10:45 am Theory Behind LEAD
	10:45-11am Wrap-Up
Monday December 7th	**10-10:15 am** Review & Recap
	10:15-11 am A Typical Coaching Session
	11-11:30 am Goal Setting (session 3)
	11:30 am-12:30 pm Session 1-2 Content
	12:30-1 pm *Lunch Break*

	1-1:45 pm Session 4-5 Content
	1:45-2 pm Wrap-Up
Tuesday December 8th	**10-10:15 am** Review & Recap
	10:15-12:00 am Session 6-10 Content
	12-12:30 pm *Lunch Break*
	12:30–1:30 pm Role Play Coaching Call
	1:30-1:45 pm Next Steps
	1:45-2 pm Wrap-Up
January 2016 (Week of January 11)	Brightspace
	Logistical Questions

Tailoring the LEAD Content

Coaches met on a weekly basis to review the content for the following session, discuss any challenges, brainstorm solutions, and ensure that there was consistency in how the program was being delivered. The balance of consistency in delivery and tailoring the content to the participant needs

Coaches had latitude in how they brought examples to life for participants (e.g., referencing their goals, and highlighting the connections between the content and participants experiences). Coaches also had latitude to have deeper discussions on content that was directly related to a participants' personal goals. Lastly, additional resources were provided to participants based on their individual goals (e.g., articles, podcasts).

Appendix E

Participant Demographics by LEAD Coach

Table D1

Participant demographics by LEAD coach (N = 59).

		Group 1	Group 2	Overall
Phase 1	Coach A	*n* = 8 Gender: W = 6 M = 2 Age: 50.38 (7.17) Tenure: 63.88 (71.52) Direct Reports: 11 (6) Prev Train: 2.38 (3.29)	*n* = 12 Gender: W = 14 M = 6 Age: 42.75 (8.94) Tenure: 58.25 (61.91) Direct Reports: 27 (24) Prev Train: 2.33 (1.37)	*n* = 20 Gender: W = 14 M = 6 Age: 45.80 (8.94) Tenure: 60.50 (64.12) Direct Reports: 21 (20) Prev Train: 2.35 (2.25)
	Coach B	*n* = 7 Gender: W = 5 M = 2 Age: 43.71 (12.33) Tenure: 82.71 (62.59) Direct Reports: 80 (105) Prev Train: 2.29 (2.36)	*n* = 6 Gender: W = 4 M = 2 Age: 39.17 (10.46) Tenure: 46.33 (41.39) Direct Reports: 32 (34) Prev Train: 2.33 (2.16)	*n* = 13 Gender: W = 9 M = 4 Age: 41.62 (11.27) Tenure: 65.92 (55.03) Direct Reports: 58 (81) Prev Train: 2.31 (2.18)
	Coach C			*n* = 5 Gender: W = 4 M = 1 Age: 40.80 (9.09) Tenure: 46.20 (21.87) Direct Reports: 34 (42) Prev Train: 3.00 (3.94)
	Coach D			*n* = 1 (male) Age: 51.00 Tenure: 18.00 Direct Reports: 4.00 Prev Train: 2.00
Phase 2	Coach A	*n* = 5 Gender: W = 2 M = 3 Age: 48.40 (4.62)	*n* = 3 Gender: W = 2 M = 1 Age: 44.00 (8.19)	*n* = 8 Gender: W = 4 M = 4 Age: 46.75 (6.04)

	Tenure: 47.40 (39.32) Direct Reports: 28 (28) Prev Train: 1.60 (0.55)	Tenure: 78.00 (72.40) Direct Reports: 11 (11) Prev Train: 1.00 (1.73)	Tenure: 58.87 (51.30) Direct Reports: 22 (24) Prev Train: 1.38 (1.06)
Coach E	*n* = 5 Gender: W = 2 M = 3 Age: 44.60 (6.19) Tenure: 55.40 (83.14) Direct Reports: 11 (11) Prev Train: 1.00 (1.73)	*n* = 7 Gender: W = 2 M = 5 Age: 38.43 (8.98) Tenure: 9.43 (8.46) Direct Reports: 6 (9) Prev Train: 1.00 (1.16)	*n* = 12 Gender: W = 4 M = 8 Age: 41.00 (8.25) Tenure: 28.58 (55.79) Direct Reports: 9 (10) Prev Train: 1.00 (0.85)

Note. Coach A was the only coach to support both Phases of the LEAD program, Coach C only supported Group 1 of Phase 1, as did Coach D who was internal to a participating organization. Prev Training = Previous Training. Tenure is reported in months with their current organization.

Post hoc analyses did not reveal consistent meaningful differences between the coaches. There were three significant differences: (1) The leaders of Coach B significantly more direct reports (M = 58, SD = 81) than Coach E (M = 9, SD = 10); (2) Leaders of Coach A had higher scores on a measure of professional efficacy pre-LEAD (M = 4.24, SD = 0.75) than Coach B (M = 3.32, SD = 1.38) or Coach C (M = 2.67, SD = 0.59); and (3) Leaders of Coach A less emotional exhaustion post-LEAD (M = 1.25, SD = 0.81) than Coach C (M = 2.80, SD = 1.49). As Coach D only coached a single participant, they were excluded from post-hoc analyses.

Appendix F

Participants Withdrawals

Table E1

Participants who withdrew from the LEAD program, the week, and reason for their withdrawal (N = 28).

Week of LEAD	N	Gender	Age	Reason for Withdrawal
Pre-LEAD	15	Women = 7 Men = 8	44.00 (9.20)	Unknown
1-5	9 Group 1 = 7 Group 2 = 2	Women = 6 Men = 3	42.38 (10.91)	▪ Unknown (n=3) ▪ Time commitment (n=3) ▪ Retired (n=1) ▪ Poor rapport with coach (n-1) ▪ Illness (n=1)
6-10	4 Group 1 = 3 Group 2 = 1	Women = 2 Men = 2	48.50 (8.51)	▪ Missing too many sessions because of work demands (n=3) ▪ Leave of absence from work (n=1)

Note: Post hoc analyses indicated three differences between participants who withdrew from the study Pre-LEAD and those who completed all 10 coaching sessions. Participants who withdrew Pre-LEAD had participated in more training programs (Pre-LEAD withdrawal: M = 4.67, SD = 7.71; LEAD: M =1.98, SD = 2.10), their level of motivation for the LEAD program was lower (Pre-LEAD withdrawal: M =3.74, SD = 0.44; LEAD: M =4.08, SD = 0.42), and they had less affective commitment for their organization (Pre-LEAD withdrawal: M =3.45, SD = 0.91; LEAD: M =4.02, SD = 0.73). There were no statistically significant differences between participants who withdrew after starting coaching and either the Pre-LEAD withdrawals or participants who completed LEAD.

Appendix G

Participant Feedback

Table E1

Participant feedback post-LEAD program (N = 42).

Feedback Questions		**Percentage of Respondents**		
		Disagree	**Neutral**	**Agree**
General Feedback	I am happy with the service provided by LEAD	2.4	9.5	88.1
	I found the LEAD program beneficial	4.8	11.9	83.3
	I would encourage other leaders to use LEAD	2.4	21.4	76.2
Progress	I felt that I met my program goals	9.5	14.3	76.2
Change in Self	I am able to transfer the skills learned in the LEAD program back to my actual job	4.7	11.6	83.7
	Through the LEAD program I have made positive changed at work	2.4	9.8	87.8
	I have changed my job behaviour in order to be consistent with the material taught in the LEAD program	2.3	23.3	72.1
	My actual job performance has improved due to the skills that I developed in the LEAD program	2.3	41.9	55.8
	Others have noticed positive changes I have made since starting the LEAD program	11.6	53.5	34.9
Change in Others	I have noticed positive changes in my direct reports behaviours due to the skills that I learned in the LEAD program	8.0	28.0	64.0
Coaching	My coach was helpful	0	9.5	90.5
	I enjoyed talking with my coach	0	7.1	92.9

	Personal one-on-one coaching	4.9	22.0	73.2
	Telephone-based coaching method	7.3	19.5	73.2
	Email contact from my coach	12.2	34.1	53.6
Manual Content	LEAD Participant Manual	19.1	35.7	45.2
	Goal Setting	4.8	23.8	71.4
	Setting Priorities	11.9	33.3	54.8
	Time Management	14.1	31.0	54.8
	Coping	21.4	28.6	50.0
	Identifying Resources	19.1	42.9	38.1
		Slightly Helpful	**Helpful**	**Very Helpful**
	Overall LEAD program	7.3	41.5	51.2
		No Progress	**Moderate Progress**	**Excellent Progress**
	How much progress have you made since you started the LEAD program	4.8	50.0	45.2

Note: Participants answered their level of agreement to the feedback questions, with the exception of two questions: (1) *Overall LEAD program*, where participants rated how helpful they found the program, and (2) *How much progress have you made since you started the LEAD program*. All questions were asked on a scale from 1 to 5, where higher scores represented more agreement/helpfulness/progress. The five-point rating scale was collapsed such that scores of 1-2 and 4-5 were combined.

Appendix H

Instructions for Raters of Study 2 Learning Data (Level 2)

Thank you for your support with the qualitative analyses of the LEAD program. If you have any questions about the instructions below please contact Dr. Day, or myself.

There are going to be two parts to the qualitative analyses. Once you're done the first part, I will send\ instructions for the second part.

Part 1:

There are two documents attached (LEAD-J1; LEAD-A1) with participants' comments about the qualities participating leaders thought made the most effective leaders.

1) Go through each document separately and derive common themes through the comments. It does not matter how many themes, do whatever makes sense to you. As general guidance, somewhere between 3 and 7 would be likely.
2) Once they have completed the thematic analyses for the four documents reach back out and you will be sent the instructions for Part 2.

Part 2

1) Go back through the "effective leadership" documents and revisit them through the lens of the four transformational leadership dimensions. See below for descriptions of the four transformational leadership dimensions.
2) Look to see the frequency of those transformational behaviours being identified between documents J and A.

Behaviour (definition)	Standout Quotes	Frequency of Comments
Idealized Influence *Considering the ethical responsibility towards the organization and direct reports.*		
Inspirational Motivation *Articulating a vision that is appealing and inspiring to direct reports.*		
Intellectual Stimulation *Challenging employees' assumptions, taking risks, encouraging creativity, and soliciting direct reports' ideas.*		
Individualized Consideration *Attending to each direct reports' individual needs, mentoring them, and listening to their concerns.*		

Appendix I

Model Statistics for Pre-Post LEAD Replications

Table H1

Growth curve models testing the prediction of time, Time 1 leadership self-efficacy, motivation, and their interactions on the growth in transformational leadership for weekly data as a replication (N=72).

Transformational Leadership	Weekly Data			
	Group 1		Group 2	
	Est FE	SE	Est FE	SE
Constant	-.60[b]	(.17)	-.09	(.25)
Level 1				
Time	.14[c]	(.02)	.01	(.02)
LSE	.56[b]	(.17)	.21	(.26)
Motivation	.28	(.17)	.00	(.20)
Time x LSE	.01	(.02)	.04	(.02)
Time x Motivation	-.04[a]	(.02)	-.02	(.02)
LSE x Motivation	.50[b]	(.17)	.09	(.21)
Time x LSE x Motivation	-.08[c]	(.02)	.02	(.02)
% Variance Explained	50%		47%	

[a] = $p<.05$; [b] = $p<.01$; [c] = $p<.001$

Note. Est FE = Estimate of fixed effects; SE = standard error; LSE = leadership self-efficacy