

Fostering a Psychologically Healthy Workplace through Leadership

By  
Samantha A. Penney

A Thesis Submitted to Saint Mary's University, Halifax, Nova Scotia  
In Partial Fulfilment of the Requirements for the Degree of  
Doctor of Philosophy in Industrial and Organizational Psychology

September 2019 Halifax, Nova Scotia

Copyright Samantha A. Penney, 2019

Approved:	Dr. Arla Day Supervisor
Approved:	Dr. Lori Francis Committee Member
Approved:	Dr. E. Kevin Kelloway Committee Member
Approved:	Dr. Catherine Loughlin Committee Member
Approved:	Dr. France St-Hilaire External Examiner
Date:	September 3, 2019

**Table of Contents**

**LIST OF APPENDIXES.....IV**

**LIST OF TABLES ..... V**

**LIST OF FIGURES ..... VI**

**ABSTRACT ..... VII**

**ACKNOWLEDGEMENTS..... VIII**

PSYCHOLOGICALLY HEALTHY WORKPLACES COMPONENTS AND BENEFITS ..... 2

*Employee Involvement* ..... 4

*Work-life Balance* ..... 5

*Employee Growth and Development* ..... 5

*Employee Health and Safety* ..... 6

*Employee Recognition* ..... 6

*A Culture of Support, Respect, and Fairness* ..... 7

THE WORKPLACE AS A RESOURCE ..... 7

PSYCHOLOGICALLY HEALTHY WORKPLACE AS A RESOURCE ..... 10

LEADERS AS A RESOURCE ..... 10

TRANSFORMATIONAL LEADERSHIP THEORY ..... 12

OTHER LEADERSHIP THEORIES AND COMPETENCY MODELS ..... 14

LEADERSHIP COMPETENCIES ..... 16

FOSTERING PSYCHOLOGICALLY HEALTHY WORKPLACES THROUGH LEADERSHIP ..... 17

*Developing and Involving Employees* ..... 20

*Providing Employee Feedback and Recognition* ..... 21

*Interpersonally Investing and Supporting Employees* ..... 22

*Effectively Communicating and Promoting Psychologically Healthy Workplaces* ..... 23

*Modeling Psychologically Healthy Workplace Practices and Behaviours* ..... 26

SUMMARY ..... 27

**STUDY 1: SCALE DEVELOPMENT ..... 28**

    LEADERSHIP BEHAVIOURS THAT FOSTER A HEALTHY WORKPLACE ..... 28

**STUDY 1: METHODS..... 29**

    PARTICIPANTS AND PROCEDURE ..... 29

        (1) *Focus Groups and Interviews* ..... 30

        (2) *Theming Behaviours. A separate convenience* ..... 32

        (3) *Item Writing* ..... 32

        (4) *Q-sort Task* ..... 33

        (5) *Item Review* ..... 33

**STUDY 1: RESULTS..... 33**

    (1) *Focus Groups and Interviews* ..... 33

    (2) *Theming Behaviours* ..... 34

    (3) *Item Writing* ..... 34

    (4) *Q-sort Task* ..... 35

    (5) *Item Review* ..... 35

**STUDY 1: DISCUSSION..... 35**

    LIMITATIONS AND FUTURE RESEARCH ..... 36

    CONCLUSION ..... 37

**STUDY 2: SCALE VALIDATION..... 37**

CONSTRUCT VALIDITY .....	38
CRITERION-RELATED VALIDITY .....	39
<b>STUDY 2: METHODS.....</b>	<b>41</b>
PARTICIPANTS .....	41
MEASURES .....	41
<b>STUDY 2: RESULTS.....</b>	<b>43</b>
CONSTRUCT VALIDITY OF HEALTHY WORKPLACE LEADERSHIP BEHAVIOUR SUBSCALES.....	51
CRITERION-RELATED VALIDITY OF HWLB SUBSCALES.....	52
INCREMENTAL VALIDITY OF HWLB SUBSCALES .....	52
<b>STUDY 2: DISCUSSION.....</b>	<b>59</b>
FACTOR STRUCTURE OF THE HWLB SCALE .....	60
CONSTRUCT VALIDITY OF THE HWLB SUBSCALES .....	61
CRITERION-RELATED VALIDITY OF THE HWLB SUBSCALES .....	61
INCREMENTAL VALIDITY OF HWLB SUBSCALES .....	63
LIMITATIONS AND FUTURE RESEARCH .....	63
PRACTICAL IMPLICATIONS .....	64
CONCLUSION.....	65
<b>STUDY 3: PROGRAM DEVELOPMENT AND EVALUATION.....</b>	<b>66</b>
LEADING HEALTHY WORKPLACES PROGRAM OVERVIEW .....	71
<b>STUDY 3: METHODS.....</b>	<b>74</b>
PARTICIPANTS .....	74
<i>Leader Participants</i> .....	74
<i>Direct Report Participants</i> .....	74
PROCEDURE.....	75
<i>Workshop and Training Program</i> .....	76
<i>Leader</i> .....	77
<i>Direct Report Measures</i> .....	79
<b>STUDY 3: RESULTS.....</b>	<b>81</b>
MULTILEVEL MODELING.....	82
LEVEL 1: LEADERS' REACTIONS TO TRAINING .....	83
LEVEL 2: LEARNING FROM TRAINING (KNOWLEDGE ABOUT LEADERSHIP BEHAVIOURS) .....	83
LEVEL 3: BEHAVIOUR CHANGE (HEALTHY WORKPLACE LEADERSHIP BEHAVIOURS) .....	83
<i>Leaders' Perceptions of Healthy Workplace Leadership Behaviours</i> .....	83
LEVEL 3: BEHAVIOUR CHANGE (HEALTHY WORKPLACE LEADERSHIP BEHAVIOURS) .....	90
<i>Leaders' Perceptions of Healthy Workplace Leadership Behaviours</i> .....	90
<i>Leaders' Self-Efficacy, Strain, and Stress</i> .....	92
<i>Direct Reports' Perceptions of Healthy Workplace Leadership Behaviours</i> .....	93
<i>Process Analyses</i> .....	93
LEVEL 4: RESULTS OF TRAINING (WELL-BEING OF LEADERS AND DIRECT REPORTS).....	96
<b>STUDY 3: DISCUSSION.....</b>	<b>96</b>
LEVEL 1: LEADERS' REACTIONS TO TRAINING .....	98
LEVEL 2: LEARNING FROM TRAINING (KNOWLEDGE ABOUT LEADERSHIP BEHAVIOURS) .....	98
LEVEL 3: BEHAVIOUR CHANGE (HEALTHY WORKPLACE LEADERSHIP BEHAVIOURS) .....	98
<i>Leader Motivation to Learn, Readiness for Change, and Knowledge</i> .....	100
LEVEL 4: RESULTS OF TRAINING (WELL-BEING OF LEADERS AND DIRECT REPORTS) .....	100
LIMITATIONS AND FUTURE RESEARCH .....	101
PRACTICAL IMPLICATIONS .....	105
CONCLUSION.....	105

**GENERAL DISCUSSION..... 106**  
**OVERALL CONCLUSION..... 110**  
**REFERENCES..... 112**

**List of Appendixes**

Appendix A	Study 1: Interview/Focus Group Guide.....	135-136
Appendix B	Study 1: Theming Activity .....	137
Appendix C	Study 1: Item Writing .....	138-139
Appendix D	Study 1: Sorting Activity .....	140
Appendix E	Study 1: Item Review .....	141-142
Appendix F	Study 1: Theming Results	143-147

### List of Tables

Table 1	Study 1: Qualitative Scale Development Process.....	31
Table 2	Study 2: Variable Descriptive Statistics, Intercorrelations, and Reliabilities.....	46
Table 3	Study 2: Factor Loadings and Communalities for the Healthy Workplace Leadership Behaviours Scale ( $N = 299$ ; Hypothesis 1).....	48-49
Table 4	Study 2: Fit Indices for the Competing Confirmatory Factor Analyses Models ( $N = 302$ ).....	51
Table 5	Study 2: Regression Analyses of Transformational Leadership and Individualized Consideration on the 5 HWLB Subscales ( $N=472-477$ ; Hypothesis 2).....	54
Table 6	Study 2: Regression Analyses of Strain, Stress, Trust, and Job Satisfaction on the 5 HWLB Subscales ( $N = 412-422$ ; Hypothesis 3)..	55
Table 7	Study 2: Regression Analyses Assessing Incremental Validity of the 5 HWLB Subscales in predicting Strain, Stress, Trust, and Job Satisfaction after controlling for the effects of Transformational Leadership ( $N = 412-421$ ; Hypothesis 4)....	57
Table 8	Study 2: Regression Analyses Assessing Incremental Validity of the 5 HWLB Subscales in predicting Strain, Stress, Trust, and Job Satisfaction after controlling for the effects of Individualized Consideration ( $N = 410-418$ ; Hypothesis 4)....	58
Table 9	Study 3: Leader Variable Descriptive Statistics, Intercorrelations, and Reliabilities at Time 1, Time 2, and Time 3.....	84-86
Table 10	Study 3: Direct Report Variable Descriptive Statistics, Intercorrelations, and Reliabilities at Leader Pre-training and Leader Post-training .....	87-88
Table 11	Study 3: Multilevel Model Fit and ICC Summary.....	89
Table 12	Study 3: Leaders' Reactions to Training ( $N = 68$ ; Research Goal 1)...	90
Table 13	Study 3: Moderated Regression Analysis Assessing the Effect of Motivation to Learn and Readiness for Change on HWLB over time (i.e., Pre-training to Post-training; $N = 71$ ; Hypothesis 6).....	97

**List of Figures**

Figure 1	Study 2: Scree plot for the initial principal components analysis.....	47
Figure 2	Study 2: Scree plot for the final principal components analysis.....	49
Figure 3	Study 2: Confirmatory factor analysis for the 5-factor model.....	53
Figure 4	Study 3: Hypothesized plotted univariate effects (cell means) for the Time 1 Training group and Waitlist Time 2 Training group (Hypothesis 1, 2, 3) .....	67
Figure 5	Study 3: Hypothesized plotted univariate effects (cell means) for stress for the Time 1 Training group and Waitlist Time 2 Training group (Study 3: Hypothesis 7).....	71
Figure 6	Study 3: Proposed Timeline of the Fostering a Psychologically Healthy Workplace through Leadership Training program for the Time 1 Training group and Waitlist Time 2 Training group.....	77

**Abstract**

## Fostering a Psychologically Healthy Workplace through Leadership

By Samantha A. Penney

Although the impact of psychologically healthy workplaces on organizational and employee level outcomes has received increased attention over recent years (e.g., Day & Randell, 2014; Loughlin & Mercer, 2014), leaders and organizations often feel challenged as to how to foster a psychologically healthy workplace (Grawitch, Ledford, Ballard, & Barber, 2009). Given the success of leadership interventions in improving employee and organizational outcomes (e.g., Barling, Weber, & Kelloway, 1996) and the importance of incorporating leaders into interventions (Kelloway & Barling, 2010), this study drew on the Conservation of Resources Theory (Hobfoll, 1998; Hobfoll & Shirom, 2001) the Job Demands Resource Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), and the Effort-Reward Imbalance Model (Siegrist, 2001), and the role of leaders and healthy workplaces as resources in promoting employee well-being. I developed and validated a training program aimed at improving leaders' behaviours that contribute to a healthy workplace and positive employee outcomes. In Study 1, I conducted interviews and focus groups with subject matter experts ( $N = 35$ ) to develop a scale to assess leadership behaviours that contribute to a healthy workplace. In Study 2, I examined the psychometric properties of the scale in terms of reliability, and construct and criterion-validity ( $N = 601$ ). In Study 3, I developed a leadership training program (Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership) and evaluated it using a longitudinal waitlist control training design ( $N = 68$ ). Leaders reported increases in some of their own Healthy Workplace Leadership Behaviours. Direct reports reported perceived increases in one of their leaders' behaviours (i.e., Promotion of a Healthy Workplace).

September 3, 2019



### **Acknowledgements**

This dissertation would not have been possible without the support of people around me. First, I would like to thank my supervisor, Dr. Arla Day for her support, guidance and effort throughout this effort. I would like to acknowledge my internal committee members, Dr. Lori Francis, Dr. Kevin Kelloway, and Dr. Catherine Loughlin, as well as my external examiner, Dr. France St. Hilaire, for their invaluable insight and feedback. Additionally, I would like to express my gratitude to the Industrial/Organizational Psychology faculty that I had the opportunity to work with over my graduate studies.

I would also like to thank my family and husband for their unconditional love, support, and understanding throughout this journey. Living in a separate province throughout my graduate studies made it challenging but your words of encouragement and support meant the world to me. Lastly, I would like to thank my friends and colleagues.

### Fostering a Psychologically Healthy Workplace through Leadership

Within the occupational health psychology literature, the concept of a psychologically healthy workplace has received increased attention over the past few years, resulting in several models of what conceptualizes a psychologically healthy workplace (e.g., Day & Randell, 2014; Grawitch, Gottschalk, & Munz, 2006; Kelloway & Day, 2005). These models highlight the components of a psychologically healthy workplace that may contribute to employee health, well-being, and organizational effectiveness. Some researchers also have highlighted the importance of incorporating leaders into occupational health interventions (Day & Nielsen, 2017; Kelloway & Barling, 2010; Kelloway, Teed, & Prosser, 2008; Nielsen, 2014) and the importance of creating psychologically healthy workplaces (Kelloway, Penney, & Dimoff, 2017; Loughlin, Hepburn, & Barling, 1995; Nielsen, 2014). The literature demonstrating the effectiveness of leadership interventions on positive employee and organizational outcomes (e.g., Avolio, Reichard, Hanna, Walumba, & Chan, 2009; Barling, Weber, & Kelloway, 1996; Dvir, Eden, Avolio, & Shamir, 2002; Hartling, 2018; Kelloway, Barling, & Helleur, 2000), attests to the importance and effectiveness of a leaders' role as a resource for employees. Despite this literature, leaders and organizations often feel challenged when it comes to fostering a psychologically healthy workplace (Grawitch, Ledford, Ballard, & Barber, 2009). Drawing on the Conservation of Resources Theory (Hobfoll, 1998; 2001), the Job Demands Resource Model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), and the Effort-Reward Imbalance Model (Siegrist, 2001), I argue that leaders and healthy workplaces are essential resources in promoting healthy workplaces and employee well-being. Accordingly, I developed a measure to assess the extent to which leaders engage in effective behaviours in leading a healthy workplace, and I developed a training program to improve these leaders' behaviours and foster positive employee

outcomes. The goals of this program of research were to: (a) develop a measure to assess leaders' behaviours that contribute to a healthy workplace (Healthy Workplace Leadership Behaviours scale; HWLB), (b) validate the measure (in terms of construct and criterion validity), and (c) develop, deliver, and assess the effectiveness of a leadership training program (Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership) that aimed to improve leaders' behaviours that contribute to a psychologically healthy workplace.

### **Psychologically Healthy Workplaces Components and Benefits**

A psychologically healthy workplace is considered a workplace that aims to promote organizational resources and improve employee well-being as well as reduce negative demands and stressors while simultaneously remaining a productive organization (Day & Randell, 2014; Kelloway & Day, 2005). Several models on the antecedents and outcomes of a psychologically healthy workplace have been presented (e.g., Grawitch et al., 2006; Kelloway & Day, 2005; Sauter, Murphy, & Hurrell, 1990). First, Saunter and colleagues (1990) identified the most common categories of work stress: workload and work pace, role stressors (conflict, ambiguity, inter-role conflict), career concerns, work scheduling, interpersonal relationships, and job content and control. Kelloway and Day (2005) developed a model identifying the antecedents (i.e., safety of work environment, work-life balance, culture of support, respect, and fairness, employee involvement and development, work content and characteristics, and interpersonal relationships at work) and outcomes (i.e., individual, organizational, and societal) of a psychologically healthy workplace. Similarly, Grawitch et al. (2006) presented a model with comparable categories and antecedents and outcomes of a psychologically healthy workplace. Grawitch et al.'s (2006) model grouped psychologically healthy workplace practices into the five categories of employee involvement, work-life balance, employee growth and development, health and safety, and

employee recognition. Moreover, Grawitch et al. (2006) presented a framework hypothesizing how healthy workplace practices may be related to employee and organizational outcomes. Specifically, Grawitch et al. (2006) suggested that healthy workplace practices such as promoting work-life balance, emphasizing health and safety, and recognizing staff, and supporting employee growth and involvement may directly contribute to organizational improvements, such as increasing productivity, reducing absenteeism, turnover, and healthcare costs, as well as indirectly improve organizational outcomes by first improving employee well-being.

Most recently, the Mental Health Commission of Canada (2013) released a voluntary standard for protecting, promoting, and guiding changes that may aid in improving psychological health and safety in the workplace. Within the voluntary standard, 14 factors were identified, most of which can be mapped onto the Kelloway and Day (2005) and Grawitch et al. (2006) models. The standard includes the components of psychological support, organizational culture, clear leadership and expectations, civility and respect, psychological job demands, growth and development, recognition and reward, involvement and influence, workload management, engagement, work-life balance, psychological protections, physical safety protection, and other chronic stressors.

More broadly, the World Health Organization (WHO) developed the WHO Healthy Workplace Model, which encompasses avenues to influence healthy workplaces, in terms of the physical work environment, personal health resources, enterprise community environment, and the psychosocial work environment (Burton, 2009). Similarly, Salanova, Llorens, Cifre, and Martinez (2012) outlined three components of healthy workplaces in their Healthy and Resilient Organization (HERO) Model. In particular, they identified three components of a healthy

workplace: healthy organizational resources and practices, healthy employees, and healthy organizational outcomes.

There are apparent overlaps among these healthy workplace models. Specifically, the WHO Model (Burton, 2009) and the HERO model (Salanova et al., 2012) focus on more general components of the workplace (e.g., physical work environment, healthy organizational resources, and practices) whereas the Kelloway and Day (2005) and the Grawitch et al., (2006) models focus on specific components. Despite the importance of these general components of a healthy workplace, highlighted by WHO and HERO Model, they do not address the specific components or mechanisms that could be used to create healthier workplaces. Given that the current study focuses on improving leaders' behaviours that can contribute to a healthy workplace and employee outcomes, I focus on the specific components that may be more directly aligned with behaviours (i.e., Grawitch et al., 2006; Kelloway & Day, 2005) in more detail: (1) employee involvement, (2) work-life balance, (3) employee growth and development, (4) employee health and employee safety, (5) employee recognition, and (6) culture of support, respect, and fairness.

**Employee Involvement.** Employee involvement includes incorporating employees' opinions in decisions (Benson & Lawler, 2016) and increasing their autonomy (APA, 2009; Grawitch, Trares, & Kohler, 2007). Employee involvement initiatives can range from open door policies and requesting employee input in the decision-making process, or involvement in committees, to the implementation of self-managed work teams (Grawitch et al., 2009; Tetric & Quick, 2011). In a healthy workplace context, employee involvement has been related to employee well-being, burnout, organizational commitment, turnover intentions, and perception of healthy workplace programs and policies (Grawitch et al., 2007). Therefore, employee

involvement initiatives have the potential to influence strongly employee outcomes as well as other psychologically healthy workplace initiatives (Grawitch et al., 2009).

**Work-life Balance.** Work-life balance refers to the ability of an individual to balance their demands and satisfy their experiences across work and life domains (Kirchmeyer, 2000). Therefore, the promotion of work-life balance in the workplace refers to workplace programs and policies to promote balance between work and nonwork life (Grawitch et al., 2007). Some examples of work-life balance programs are flexible work arrangements, flex time, telecommuting, and child and elder care assistance (APA, 2009; Grawitch et al., 2007). Work-life balance initiatives can assist in reducing work-life conflict and are associated with adverse work-related outcomes such as absenteeism, turnover intentions, and reductions in organizational commitment, job satisfaction (Allen, Herst, Bruck, & Sutton, 2000), and psychological well-being (Grant-Vallone & Donaldson, 2001). Consequently, initiatives that support employee work-life balance are valuable and are considered an essential component of psychologically healthy workplaces (Hammer & Zimmerman, 2011).

**Employee Growth and Development.** Employee growth and development can be defined as learning opportunities and processes for employees to expand and gain knowledge and skills (APA, 2009; Salas & Weaver, 2016). Employee growth and development initiatives range from tuition reimbursements and on the job training, to career development courses (APA, 2009; Grawitch et al., 2006). Employee growth and development has related to organizational commitment, well-being, (Grawitch et al., 2007), and job satisfaction (Browne, 2000). In addition to employee outcomes, employee growth and development opportunities have also been shown to be related to organizational effectiveness (Browne, 2000) and an organizational competitive advantage over other organizations (Pfeffer, 1994; Van de Van & Poole, 1995).

**Employee Health and Safety.** Workplace health and safety can be conceptualized as programs or policies intended to improve the physical and mental health of employees as well as healthy behaviours (Kelly & Carter, 2016). For instance, employee health and safety initiatives focus on the prevention, assessment, and treatment of health and safety issues (APA, 2009; Grawitch et al., 2007). Employee health and safety initiatives consist of training and safeguards for safety, wellness programs, and satisfactory benefits and resources for employee health (APA, 2009; Grawitch et al., 2007). Grawitch et al. (2007) suggested that satisfaction with health and safety practices was a significant predictor of turnover intentions. Moreover, health and safety initiatives may reduce absenteeism, accidents, and healthcare costs (APA, 2009).

**Employee Recognition.** Employee recognition can be defined as a positive consequence that results from performance or behaviour (Nelson, 2016). Employee recognition initiatives refer to programs that provide monetary or non-monetary rewards to employees individually and collectively (APA, 2009; Grawitch et al., 2007). Employee recognition can occur through monetary (e.g., compensation) or non-monetary (e.g., plaques) rewards (Grawitch et al., 2015). Employee recognition tends to be a predictor of job satisfaction, stress, and organizational effectiveness (Browne, 2000). Although there appears to be limited research on employee recognition and well-being, available research suggests that a lack of recognition may lead to stress, psychological distress, and poor well-being (e.g., Brun & Dugas, 2008; Grawitch, Ballard, & Erb, 2015). For example, Kazi and Haslam (2013) demonstrated that high stress among employees was associated with reduced performance and well-being, with a lack of recognition being a primary sources of stress. Thus, it is not surprising that employees feel personalized recognition is imperative at work (Luthans, 2000).

**A Culture of Support, Respect, and Fairness.** A culture of support, respect, and fairness refers to initiatives that encourage a supportive, respectful, and fair work environment (Day & Randell, 2014; Kelloway & Day, 2005). Initiatives may include written policies, sensitivity/diversity training, and fair decision-making processes (Day & Randell, 2014). A supportive culture is associated with employee retention (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002) and well-being (Gilbreath & Benson, 2004). Likewise, perceptions of workplace fairness are associated with organizational commitment, job satisfaction, and job stress (Elovaino, Kimimaki, & Helkama, 2001). Finally, workplace abuse (i.e., disrespect) is negatively related to well-being and affective commitment (LeBlanc & Kelloway, 2002). Therefore, given the positive benefits associated with previously identified components of psychologically healthy workplaces, it is conceivable that a healthy workplace can act as a valuable resource for employees.

### **The Workplace as a Resource**

The workplace has the potential to be a resource for employees (Day & Randell, 2015). In particular, a psychologically healthy workplace and leadership behaviours that contribute to a healthy workplace have the potential to affect employees positively. Three theoretical occupational stress models, the Conservation of Resources Theory (Hobfoll, 1998; 2001), the Job Demands-Resources Model (Demerouti et al., 2001) and the Effort-Reward Imbalance Model (Siegrist, 2001), provide a basis on which to examine the effect of a healthy workplace and leadership behaviours as resources in promoting employee well-being.

The Conservation of Resources Theory suggests that individuals strive to seek out and maintain resources in order to protect themselves against the threat of resource loss or actual resource loss (Hobfoll, 1998; 2001). Moreover, strain occurs when resources are lost, threatened,



or when resources are not gained following investment (Hobfoll, 2001). In the development of the Conservation of Resources Theory, Hobfoll (1998) identified several resources that may be valued by individuals, including resources that are arguably related to leadership behaviours and psychologically healthy workplaces. In particular, Hobfoll (1998) argued that aspects of the leadership role, such as providing understanding, recognition, autonomy (i.e., the ability to organize tasks, feeling independent), necessary tools, training, and education, as well as support from coworkers are resources that are often valued by individuals. Given that organizations, and more specifically leaders, can play a pivotal role in providing employees with resources (Schaufeli & Taris, 2014) such as feedback, recognition, guidance, and support (e.g., Godkin, Parayitam, & Natarajan, 2010; Kuoppala, Lamminpää, Liira, & Vainio, 2008; Stone, 2016), we would expect that the degree to which leaders engage in healthy workplace leadership behaviours to act as a resource for employees, and consequently reduce direct report stress. Therefore, in accordance with the Conservation of Resources Theory, leaders and psychologically healthy workplaces may be critical resources in reducing stress and strain among employees.

Similar to the Conservation of Resources Theory, the Job-Demands Resources Model posits that job demands and resources can predict burnout, stress, and employee well-being. That is, job demands (such as a demanding workload, role ambiguity, and poor work environment) can lead to adverse outcomes such as strain and burnout (Demerouti et al., 2001). On the other hand, job resources (such as social support, performance feedback, participative decision making, a high-quality relationship with one's supervisor; Bakker & Demerouti, 2007; Bakker, Demerouti, & Euwema, 2005; Demerouti et al., 2001) can lead to positive outcomes such as engagement and organizational commitment. Although job demands and resources can come

from various levels, many of these resources are directly or indirectly related to the role leaders play. Therefore, given that a leaders' role can encompass developing high-quality relationships with employees, being supportive, providing employees with constructive feedback, involving employees in decisions, leaders may be able to assist by providing resources and consequently reducing demands. Moreover, "good" leadership overall has previously been referred to as a resource for employees that can impact employees' well-being (Nielsen & Taris, 2019).

Finally, the Effort-Reward Imbalance Model (Siegrist, 2001) can be used to help explain how leadership behaviours may be viewed as resources. The model posits that stress and strain occurs in the work environment when rewards are not in line with efforts (Siegrist, 2001). Rewards can constitute money, esteem, and career opportunities (Siegrist, 2001). Given that leaders are often the gatekeepers of rewards for employees (Kelloway, Sivanathan, Francis, & Barling, 2005), it is plausible to argue that leaders play a significant role in ensuring that the relationship between effort and reward by employees is fair and equitable. Individually, leaders can listen to employees, provide them with feedback and appropriate rewards (e.g., money, promotion) on their performance, potentially raising their self-esteem and assist in maintaining a fair balance between employees' efforts and rewards. Therefore, given the research linking leadership behaviours and employee well-being (e.g., Harms, Crede, Tyan, Leon, & Jeung, 2017; Kelloway et al, 2008; Mullen & Kelloway, 2011; Skakon, Nielsen, Borg, & Guzman, 2010) and the research suggesting that healthy workplaces are related to employee well-being (e.g., Grawitch et al., 2006; Grawitch et al., 2007), there is potential to suggest that healthy workplaces and leaders are critical resources in reducing stress and strain and promoting employee well-being.

### **Psychologically Healthy Workplace as a Resource**

Psychologically healthy workplaces and healthy workplace practices are related to a plethora of individual, organizational, and societal outcomes (Day & Randell, 2014). For example, Grawitch et al. (2007) found that satisfaction with healthy workplace practices was positively related to employee well-being, organizational commitment and negatively related to emotional exhaustion (Grawitch et al., 2007). In terms of organizational outcomes, healthy workplaces can contribute to applicant attraction (Catano & Morrow Hines, 2016), reduced turnover (Grawitch et al., 2007), and increased productivity (Lloyd & Foster, 2006). Lastly, it has been suggested that at a societal level, healthy workplaces may contribute to healthier communities and reduced national healthcare costs (Day & Randell, 2014). Given the extensive body of research demonstrating how leaders can contribute to a lot of these positive individual outcomes (e.g., well-being; Arnold, Turner, Barling, Kelloway, & McKee, 2007; Mullen & Kelloway, 2011) and organizational outcomes (e.g., productivity; Barling et al., 1996), leaders are the ideal individuals to help foster a psychologically healthy workplace and, consequently, improve employee well-being.

### **Leaders as a Resource**

Evidence from numerous studies suggests that leaders play an important role in employee well-being (e.g., Harms et al., 2017; Kelloway et al., 2008; Mullen & Kelloway, 2011; Skakon et al., 2010). Specifically, in their review of 49 leadership studies, Skakon et al. (2010) concluded that leader behaviours (e.g., support and feedback), the relationship between leaders and employees, and leadership style (e.g., transformational and transactional leadership) all contributed to employee well-being and stress. Similarly, in Harms et al.'s (2017) meta-analysis of 157 studies, positive forms of leadership (i.e., transformational leadership and leader-member

exchange) were negatively associated with stress and burnout among direct reports whereas negative forms of leadership (i.e., abusive leadership) were positively related to direct report stress and burnout. In a recent qualitative study examining factors that influence healthy workplace initiative implementation success, support from leaders (managers) was one of the factors exerting the most influence across 31 organizations (Waterworth et al., 2016). Likewise, management and leadership are precursors of occupational health and safety performance (Shea, De Cieri, Donohue, Cooper, & Sheehan, 2016) and leadership behaviours may be the most crucial factor in the implementation of health and wellness programs (Cooper & Patterson, 2008). Within Canada, the Mental Health Commission of Canada (2013) recently released a voluntary standard to help organizations to develop psychologically healthy and safe workplaces. A qualitative study on employers' perspectives on the voluntary standard indicated that employers identified leadership as an essential ingredient in the effective implementation of the standard (Kalef, Rubin, Malachowski, & Kirsh, 2016). These relationships are not surprising given that a component of a leaders' job is to encourage employee well-being and organizational health (Macik, Quick, & Nelson, 2007) and the impact that leaders can have on employee job stressors and conditions (Gilbreath, 2004; Sauter et al., 1990).

Given the unique role that leaders play in an organization, there are several reasons why leaders are essential in the development of psychologically healthy workplaces. First, leaders play a critical role in influencing employee job conditions, the way that work is organized, work relationships, work requirements, and organizational initiatives that influence employee outcomes such as well-being (Kelloway et al., 2008; Nielsen, 2014; Nielsen & Taris, 2019). Second, leaders can directly influence employees through acting as role models and communicating information to employees (Barling, Christie, & Hopton, 2011; Nielsen, 2014).

Third, through the contagion process or crossover (i.e., feelings, emotions, and attitudes may transfer from one individual to another or be mimicked by another person; Bakker, Emmerik, & Euwema, 2006; Bakker, Westman, & Emmerik, 2009) leaders' well-being may be able to influence direct reports well-being. Fourth, leadership that focuses on promoting a healthy workplace is associated with an employees' perception of a psychological climate for health (Gurt, Schwennen, & Elke, 2011). Finally, there is evidence demonstrating that engaging in good leadership (e.g., transformational leadership), and avoiding bad leadership (e.g., passive leadership, abusive leadership) can profoundly influence employee outcomes (Kelloway et al., 2008). Therefore, it is not surprising that Nielsen (2014) argued that transformational leaders play a pivotal role in fostering psychologically healthy workplaces.

### **Transformational Leadership Theory**

Transformational leadership exists within the full-range leadership theory, which encompasses transformational and transactional leadership behaviours (Avolio & Bass, 1991). Transformational leadership can be described as a superior form of leadership that occurs when leaders "broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they stir their employees to look beyond their own self-interest for the good of the group" (Bass, 1990, p. 21).

Transformational leadership encompasses four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985). Idealized influence occurs when leaders' behaviours are consistently motivated by the desire to do the right thing for both employees and the organization (Bass, 1985). These leaders conduct themselves with high integrity, empower employees, and act as role models (Barling et al., 2011). Inspirational motivation occurs when leaders inspire employees to set goals and standards

that are high, yet achievable (Bass, 1985). These leaders inspire their employees to overcome barriers and work towards goals through fostering resilience, optimism, self-efficacy, and providing meaning for their job duties and tasks (Barling et al., 2011; Judge & Piccolo, 2004). Intellectual stimulation occurs when leaders encourage employees to be innovative and creative in their thinking and problem solving (Bass, 1985). These leaders solicit employees' opinions and encourage them to challenge assumptions, and become involved in decision-making (Barling et al., 2011; Judge & Piccolo, 2004). Finally, individualized consideration occurs when leaders take time for each employee and mentor them based on their individual needs (Bass, 1985). These leaders are genuinely interested in each employees' well-being and interests, and consequently provide support, mentoring, and coaching in order to meet their needs and interests (Barling et al., 2011; Judge & Piccolo, 2004).

There is an extensive amount of literature demonstrating the positive benefits associated with transformational leadership. Transformational leadership has been shown to be related to direct reports' well-being (Arnold et al., 2007; Gilbert, Dagenais-Desmarais, & St-Hilaire, 2017; McKee, Driscoll, Kelloway, & Kelley, 2011) and workplace safety (Inness, Turner, Barling, & Stride, 2010; Mullen & Kelloway, 2009). Transformational leadership is also related to organizational commitment (Barling et al., 1996), organizational citizenship behaviours (Piccolo & Colquitt, 2006), and trust in leaders (Gillespie & Mann, 2004; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). In addition to the positive effects associated with transformational leadership, there is also evidence that transformational leadership is negatively associated with employee job stress (Sosik & Godshalf, 2000) and burnout (Seltzer, Numerof, & Bass, 1989). Not to mention that transformational leadership has been related to non-employee outcomes such as financial performance (Barling et al., 1996). Thus, it is not surprising that transformational

leadership interventions have been effective at influencing positive employee and organizational outcomes (Kelloway & Barling, 2010).

### **Other Leadership Theories and Competency Models**

In addition to the evidence demonstrating the effectiveness of transformational leadership in improving employee outcomes, and the potential that transformational leadership has for promoting psychologically healthy workplaces and employee well-being (e.g., Inness et al., 2010), other leadership theories (e.g., authentic leadership, ethical leadership, leader-member exchange) and competency models also can be examined in order to identify leadership behaviours that might contribute to a healthy workplace and employee well-being. Authentic leadership, which is strongly, positively related to transformational leadership (Banks, McCauley, Gardner, & Guler, 2016; Hoch, Bommer, Dulebohn, & Wu, 2016) encompasses being self-aware, unbiased in processing, and authentic in behaviour and relational orientation (Ilies, Morgenson, & Nahrgang, 2005). Avolio, Gardner, Walumbwa, Luthans, and May (2004) suggested that authentic leaders can influence employee attitudes, behaviours, and performance outcomes. Building on this model, Shirey (2006) suggested that authentic leaders might be valuable in creating healthy work environments among nurses, and she proposed a theoretical model in which hope, trust, and positive emotions might mediate the relationship between authentic leadership and employee attitudes, behaviours, and performance outcomes, specifically in a healthy workplace environment. That is, authentic leaders may be able to foster healthier work environments by being hopeful, trusting, and exhibiting positive emotions, which in turn might influence positive employee attitudes (e.g., commitment, job satisfaction, engagement) and behaviours (e.g., job performance, extra effort), and consequently create a healthier workplace.

Ethical leadership is highly correlated with the idealized influence dimension of transformational leadership (Brown, Treviño, & Harrison, 2005) as well as overall transformational leadership (Hoch et al., 2016). Ethical leadership involves demonstrating appropriate conduct within actions, relationships, communication, reinforcement, and decision making (Brown et al., 2005). Given this definition, it is conceivable that ethical leadership would be related to developing and sustaining critical elements of a healthy workplace. Avey, Wernsing, and Palanski (2012) found that ethical leadership tended to be positively related to employee well-being. That is, employees who rated themselves more highly on well-being tended to rate their supervisors highly on ethical leadership. Thus, it is possible that aspects of authentic leadership behaviours (e.g., being authentic in behaviours and actions) and ethical leadership behaviours (e.g., consistent communication) may help us better understand, identify, develop, and train the leadership behaviours that are important in creating healthy workplaces and positive employee well-being.

Leader Member Exchange (LMX; Graen; 1976) is a theory of leadership that focuses on the relationship between leader and direct report and the amount of support the direct report feels they have from their leader. That is, LMX focuses specifically on the dyadic relational aspect of a leader and direct reports relationship (Graen & Uhl-Bien, 1995). Harms et al., (2016) meta-analysis indicated that high levels of LMX are associated with reduced direct report stress and burnout.

Not surprisingly, many of these different types of leadership theories (e.g., transformational, ethical, authentic, LMX) are very highly correlated with each other (e.g., Hoch et al., 2018), and it is unclear whether one type is 'better' than another (Nielsen & Tattris, 2019), which has led to researchers considering leadership behaviours in terms of competencies.



## **Leadership Competencies**

In addition to leadership theories that have been shown to be related to employee well-being, leadership/management competencies have also been proposed in order to identify potential leadership behaviours that may be related to employee well-being. For instance, Donaldson-Feilder, Yarker, and Lewis (2008) created the United Kingdom Management Competency Framework which identifies 18 leadership/management competencies that may prevent or reduce stress at work. Specifically, they identified managing workload and resources, dealing with work problems, process planning and organization, empowerment, participative approach, accessible/visible, health and safety, feedback, managing conflict, expressing and managing own emotions, acting with integrity, friendly style, communication, taking responsibilities, knowledge of job, empathy, and seeking advice as competencies that may impact work stress and then gave positive and negative examples associated with the competency. Moreover, St-Hilaire, Gilbert, and Lefebvre (2018) identified 24 competencies and 8 larger themes of leadership behaviours that may be related to employee well-being. Many of the competencies proposed by St-Hilaire et al. (2018) are similar to the competencies proposed by Donaldson-Feilder et al. (2008). However, the themes consist of relational practices, informational practices, cooperation practices, assignment practices, team management practices, leadership practices, and ethical practices. Although Donaldson-Feilder et al., (2008) and St.-Hilaire (2018) identified leadership competency that may be related to employee well-being, neither framework currently has been tested or used for leadership training.

## **Leadership Training**

An extensive meta-analysis of 200 leadership development studies by Avolio and colleagues (2009) concluded that leadership interventions are effective at creating positive

leadership changes. Specifically, leadership interventions resulted in a 66% probability of attaining a positive outcome. For example, transformational leadership training has resulted in increases in direct report perceptions of leaders' transformational leadership behaviour (Kelloway et al., 2000), organizational commitment, overall organizational financial performance (Barling et al., 1996), and direct report performance (Dvir et al., 2002). In a more recent meta-analysis, Lacerenza, Reyes, Marlow, Joseph, and Salas (2017) concluded that leadership training is effective in improving reactions, learning, transfer, and outcomes (e.g., organizational and direct reports outcomes; Cohen's  $d$  ranging from .63 to .82). Moreover, moderator analyses indicated that leadership training that incorporates several factors (i.e., a needs analysis, feedback, multiple delivery methods, training sessions spaced over time, on-site, and face-to-face training) is the most effective training (Lacerenza et al., 2017). Finally, in line with previously discussed leadership theories (e.g., transformational leadership, LMX), training skills such as behaviours and interpersonal skills have a greater impact on direct reports and organizational outcomes than training hard skills (e.g., business; Lacerenza et al., 2017). The effectiveness of leadership interventions on positive employee and organizational outcomes attests to the importance and effectiveness of a leaders' role as a resource for employees.

### **Fostering Psychologically Healthy Workplaces through Leadership**

Given the success of leadership interventions, particularly transformational leadership interventions on employee outcomes, and the overlap between leadership behaviours and psychologically healthy workplace components, an intervention focusing on fostering a psychologically healthy workplace through leadership is essential. In fact, Nielsen (2014) argued that leaders are integral in creating psychologically healthy workplaces for employees. Likewise, Jimenez, Winkler, and Dunkl (2017) suggested that the quality of leadership can influence the

health of the workplace. Moreover, Mullen and Kelloway (2011) argued that interventions for leaders should be the primary method to promote occupational health psychology given that a large number of outcomes in occupational health and safety are related to leadership. Moreover, the goals of many leadership development interventions are not only to improve leaders' functioning, but also to improve the functioning of others, such as direct reports (Kelloway & Barling, 2010).

Recently, Kelloway et al. (2017) introduced a psychologically healthy workplace model that focuses on how leaders can foster psychologically healthy workplaces. The model consisted of five components: Recognition, Involvement, Growth, Health and Safety, and Teamwork (RIGHT). Similarly, Jimenez et al. (2017) introduced a health-promoting leadership model, highlighting areas of work-life that leaders can influence to create a healthy workplace (i.e., workload, control, reward, community, fairness, values, and health awareness). Thus, in the current study, I integrated and extended Kelloway et al.'s (2017) and Jimenez et al.'s (2017) models and models of psychologically healthy workplaces components (e.g., Grawitch et al., 2006; Kelloway & Day, 2005) to develop a scale to assess leader behaviours that contribute to a psychologically healthy workplace. I also designed and evaluated the effectiveness of a leadership intervention to promote a psychologically healthy workplaces and employee well-being.

Much of the existing leadership literature focuses on how leaders can influence employee and organizational outcomes (Barling et al., 1996). However, research has not examined how specific behaviours (e.g., "concrete managerial behaviours; Westerlund et al., 2010) contribute to psychologically healthy workplaces and direct report perceptions of such behaviours and employee outcomes. For instance, Gilbert and colleagues (2017) argued that although numerous

studies have demonstrated that leadership style (e.g., transformational leadership) can influence direct reports psychological health at work, much less is known about the process by which leadership behaviours influence direct reports. Likewise, Skakon et al. (2010) and Nielsen and Taris (2019) emphasized the importance of understanding the processes linking leadership style and behaviours direct reports well-being in order to develop more effective interventions.

Therefore, in the current research, I examined leadership behaviours, that are within a leaders' control that can contribute to psychologically healthy workplaces. Within the general healthy workplace literature, several components that contribute to a healthy workplace have been proposed (e.g., Grawitch et al., 2006; Kelloway & Day, 2005). Likewise, within the leadership literature, components of leadership behaviours have been proposed (e.g., transformational leadership). However, the leadership behaviours involved in the components that may contribute to a healthy workplace have yet to be systematically identified (e.g., Gilbert et al., 2017; Nielsen & Taris, 2019; Skakon et al., 2010), incorporated into a specific model, and tested.

Thus, the intent of identifying specific leadership behaviours is not to replace previous models of components of a healthy workplace or styles of leadership behaviours, but to supplement the current literature with specific, tangible behaviours and actions that leaders can engage in and develop in order to promote a healthy workplace and employee well-being. Leadership behaviours (behavioural leadership) tend to be related to employee outcomes (see Skakon et al., 2010, for a review) and they can be trained (e.g., Avolio et al., 2009). Moreover, leadership training programs may tend to have a greater impact on direct reports than do programs that train business skills (e.g., problem solving; Lacerenza et al., 2017). Therefore, focusing on behaviours that can be trained and that are within a leader's control may be the most effective approach to fostering healthy workplaces and employee well-being.

Drawing on several areas (e.g., healthy workplace components that have been highlighted in previous research, the notion that leadership behaviours can be trained, and the impact of leaders on the functioning of direct reports), as well as focusing on behaviours that are within a leaders' control, several leadership behaviours were proposed that may contribute to a healthy workplace and employee well-being in terms of: developing and involving employees, providing employee feedback and recognition, interpersonally investing in and supporting employees, effectively communicating and promoting psychologically healthy workplace practices, and modeling psychologically healthy workplace behaviours and practices.

**Developing and Involving Employees.** Gravenkemper (2016) argued that an organizations leadership philosophy is one of the most critical factors in promoting employee involvement (Gravenkemper, 2016). Given that leaders not only work closely with employees but are often personally involved in organizational decisions, they are in a position to increase employee involvement opportunities (Kelloway et al., 2017) through exchanging information and soliciting their opinions and feedback (Grawich et al., 2009). Moreover, transformational leadership tends to be related to perceptions of an employee involvement climate (Richardson & Vandenberg, 2005). Therefore, leaders who exhibit transformational leadership behaviours (such as individualized consideration behaviours) may be able to mentor and empower direct reports to get involved in organizational decision making or merely involve their direct reports in decisions through requesting their feedback (Kelloway et al., 2017). For instance, empowering leadership behaviours (e.g., the delegation of authority, information sharing, coaching for innovative performance) have been associated with the experience of empowerment by employees, job satisfaction, and organizational commitment (Konczak, Stelly, & Trust, 2000). Lastly, in addition to the employee benefits associated with employee involvement (described above),

leaders can also benefit from receiving potentially valuable and insightful information (Grawitch et al., 2009), that they might not have received had they not involved the employees or requested their feedback.

In addition to involving employees in opportunities, leaders play an essential role in developing a climate of learning, growth, and development (Ross, Exposito, & Kennedy, 2017; Mayo, 2000). Specifically, leaders have the ability to inspire employees by focusing on their growth and development needs (Bass, 1996; Bass & Avolio, 1988; Smith, Montagno, & Kuzmenko, 2004), goal setting (Bass, 1985), having formal meetings regarding career guidance (Stone, 2016), and making them feel valued by investing in them (Mayo, 2000). For example, leaders who received transformational leadership training had a more positive impact on direct reports' development than leaders who had not received transformational leadership training (Dvir et al., 2002). The effect of transformational leadership training on direct reports is not surprising given that transformational leaders (especially through intellectual stimulation) focus on encouraging direct reports to think for themselves and approach problems in new innovative ways in order to promote and support direct reports personal growth and development needs (Barling et al., 2011; Bass, 1985). Therefore, leaders are in the position to provide and seek out growth and development opportunities for their employees and encourage and allow them to take advantage of such opportunities (Kelloway et al., 2017).

**Providing Employee Feedback and Recognition.** Although employee feedback and recognition can come from a variety of sources and levels (see Brun & Dugas, 2008), employees perceive and appreciate recognition from individuals within close proximity to them to be the most important, thus suggesting that recognition from leaders is the most influential and appreciated form of recognition (Godkin et al., 2010). These findings make sense given that

leaders are often in the best position to observe employees' behaviours and performance (Godkin et al., 2010; Kelloway et al., 2017; Nelson, 2016). In addition to providing small and informal recognition (e.g., pat on the back for a specific task), leaders can also endorse more formal recognition programs (e.g., years of service, an employee of the month, annual performance reviews). However, some researchers have argued to foster a psychologically healthy workplace, more informal and frequent employee recognition and feedback is more appreciated and effective in changing employee attitudes and behaviour than more formal recognition programs (Kelloway et al., 2017; Tetrick & Haimann, 2014). Therefore, due to leaders' frequent contact and proximity to employees, they are in an optimal position to provide employees with informal recognition, rewards, feedback, and praise for their effort and performance, which are behaviours consistent with contingent reward leadership (Bass, 1985).

**Interpersonally Investing and Supporting Employees.** In accordance with leader-member exchange theory, high-quality relationships between leaders and direct reports encompass mutual respect and trust (Schrisheim, Castro, & Cogliser, 1999), and are associated with employee well-being, job satisfaction, and commitment (Epitropaki & Martin, 2005). Likewise, the 2016 American Psychological Association Work and Well-being survey reported that support from senior leaders was associated with a variety of employee and organizational outcomes including employee motivation, job satisfaction, having a positive relationship with supervisors and coworkers, and lower intentions to quit. Similarly, Kuoppala et al.'s (2008) meta-analysis findings indicated that various styles of leadership: supportive, considerate, and transformational leadership were all related to employee self-ratings of well-being. That is, having leaders that are supportive, considerate, truthful, transformational, and concerned for direct reports' well-being are related to employee well-being (Kuoppala et al., 2008). Likewise,

leader behaviours, such as treating employees fairly, is associated with employee well-being (Van Dierendonck, Haynes, Borill, & Stride, 2004) and perceived supervisor support is related to employee retention (Eisenberger et al., 2002; Maertz, Griffeth, Campbell, & Allen, 2007).

Moreover, respectful leadership encompasses behaviours such as being supportive and acknowledging equality (i.e., fairness; Van Quaquebeke & Eckloff, 2010). Respectful leadership is associated with employee identification with a leader, respect for the leader, job satisfaction, and feelings of self-determination (Van Quaquebeke & Eckloff, 2010). Therefore, by developing high-quality relationships with employees and paying attention to each of their individual needs (i.e., individualized consideration), leaders can foster supportive and respectful relationships.

#### **Effectively Communicating and Promoting Psychologically Healthy Workplaces.**

Grawitch et al. (2006) argued that communication is at the foundation of creating healthy workplaces. Leaders are the individuals within organizations who are responsible for disseminating information whether it be department goals, organizational goals or an organizational vision (Berson & Avolio, 2004; Zaccaro & Klimoki, 2001). It is leaders' responsibility to communicate information, such as the organizational vision, and to translate how such information is related to employee job duties (Berson & Avolio, 2004), allowing employees to instill meaning and purpose in their work by being able to understand how their work is related to shared organizational goals (Arnold et al., 2007; Nielsen, Randall, Yarker, & Brenner, 2008). Moreover, leaders are at the forefront of any organizational change or change process because they are responsible for communicating information (such as healthy workplace practices/initiatives) to employees in an effective manner (Gill, 2002). Therefore, effective communication between leaders and employees can likely influence employees' perceptions and



understanding of organizational and department goals and visions, as well as the importance and communication of healthy workplace practices/initiatives.

With regard to psychologically healthy workplace practices, the communication and promotion of a psychologically healthy workplace entails behaviours such as advocating and encouraging healthy workplace practices such as work-life balance, employee health, and employee safety. In addition, to support from the organization, leader support is essential to the promotion of work-life balance (Hammer & Demsky, 2014). That is, organizations may have formal work-life balance initiatives, family-friendly policies, or work-family supports in place, but it is the implementation, availability, communication, and informal support for the use of these policies by leaders, that will determine whether employees feel encouraged to take advantage of such policies and initiatives (Hammer & Demsky, 2014; McCarthy, Darcy, & Grady, 2010; Ryan & Kossek, 2008). For example, employees of leaders who participated in a work-family intervention experienced improved overall health, job satisfaction, and decreased turnover intentions (Hammer, Kossek, Anger, Bodner, & Zimmerman, 2011). Moreover, if organizations and leaders support work-life balance needs, employees will be less likely to experience work-life conflict and the deleterious outcomes associated with work-life conflict (Hammer & Demsky, 2014). Therefore, leaders are in the position to encourage employees to take advantage of work-life balance initiatives as well as supporting and promoting the use of such initiatives such as encouraging employees to use vacation and family days, take breaks when at work, limit work or requests outside of work hours, monitor workload in order to limit overtime, allow flexibility in work hours and location (e.g., working from home one day a week; telework), and engage in recovery from work.

Leadership also has been identified as a critical component in the promotion of work-life balance as well as in the promotion of positive health and safety climates (Tetrick & Peiro, 2016). For instance, all four components of transformational leadership are related to occupational safety (Barling, Loughlin & Kelloway, 2002). For example, through idealized influence, leaders can convey the importance of safety in their vision or values. Through inspirational motivation, leaders can motivate employees to meet safety statistics that employees did not think they could achieve. Through intellectual stimulation, leaders can challenge employees to think of new ways to improve health and safety. Through individualized consideration, leaders can demonstrate that they are genuinely interested in employees' health and safety (Barling et al., 2002; Kelloway, Mullen, & Francis, 2006). Leadership is related to safety consciousness, perceived safety climate among employees (Barling et al., 2002; Kelloway et al., 2006), and decreases in injuries, and near misses (Zacharatos, Barling, & Iverson, 2005). Not to mention that leaders are typically the individuals to set up health and safety policies and priorities and promote participation in such (Tetrick & Peiro, 2016). Likewise, leaders can influence employee well-being (Donaldson-Feilder, Munir, & Lewis, 2013). Individually, leaders play a pivotal role in employee well-being and stress, with positive forms of leadership being positively associated with employee well-being and negatively associated with employee stress (Kelloway et al., 2008; Mullen & Kelloway, 2011; Skakon et al., 2010).

On the other hand, poor leadership (e.g., unethical, passive/ laissez-faire, or abusive leadership) is associated with poor employee well-being (Barling et al., 2011; Kelloway et al., 2005). For instance, passive leaders lack of communication can suggest that employee health and safety is not a priority (Kelloway et al., 2006). Likewise, abusive leadership is associated with a variety of adverse outcomes including diminished psychological health, employee resistance,

among employees, and poor attitudes and performance (Tepper, Duffy, & Shaw, 2001; Tepper, 2007). Similarly, leaders with socially undesirable personality traits such as narcissism, Machiavellianism, and psychopathy (the dark triad) are associated with poor employee well-being (Mathieu, Neumann, Hare, & Babiak, 2014) and are often perceived as ineffective leaders (Penney, Kelloway, & O'Keefe, 2015). Therefore, there is an abundance of research demonstrating the importance of positive leadership on employee health and safety as well as the adverse effects associated with poor leadership.

**Modeling Psychologically Healthy Workplace Practices and Behaviours.** Leaders are in a unique position not only to promote healthy workplaces and positive well-being, but also to model healthy workplace behaviours (Day, Penney, & Hartling, 2018; Donaldson, Munir, & Lewis, 2013), lead by example, and act as role models (Barling et al., 2011; Nielsen 2014). For example, leaders who model desired attitudes, moods, and behaviours can influence and shape employees' attitudes, moods, and behaviours through the contagion process (Nielsen, 2014; Sy, Cote, & Saavedra, 2005). This contagion process has been supported in several studies (e.g., Dahl-Jørgensen & Saksvik, 2005; Sy et al., 2005). For example, when leaders viewed an organizational intervention focused on improving employees' health and well-being negatively, employees viewed the intervention negatively (Dahl-Jørgensen & Saksvik, 2005). Similarly, when leaders are in a positive mood, their employees are more likely to be in a positive mood as opposed to negative mood (Sy et al., 2005). Therefore, through idealized influence, leaders can model healthy workplace behaviours or act as role models for employees and the organization and influence employees' attitudes towards the promotion of a healthy workplace and well-being as well.

## Summary

Encouraging the development of psychologically healthy workplaces has been at the forefront of many organizations over recent years. At the same time, various models (e.g., Grawitch et al., 2006; Kelloway & Day, 2005) encompassing psychologically healthy workplace components have been developed. However, implementing psychologically healthy workplace components has been challenging (Grawitch et al., 2009). Given that leaders are in a unique position to foster psychologically healthy workplaces, and the positive impact previous leadership development interventions have had on leader behaviour and employee outcomes, training leaders to promote a psychologically healthy workplace and employee well-being seemed like an integral next step in fostering psychologically healthy workplaces.

Therefore, the main objectives of this dissertation were to develop a new healthy workplace measure that assesses leaders' psychologically healthy workplace behaviours, to examine the validity of the scale, and to develop and assess the effectiveness of a leadership training program to help leaders increase their own behaviours that contribute both to a healthy workplace and positive direct report outcomes. I addressed these research goals across three studies: Study 1 involved qualitative scale development using content validity procedures and scale development best practices (Crocker & Algina, 1986; Hinkin, 1998) in order to develop a measure to assess leadership behaviours that contribute to a healthy workplace. Study 2 involved validating the measure using a working sample. Finally, Study 3 involved developing and delivering a half-day training program (with 7 weeks of follow-up phone-based coaching sessions) aimed at helping leaders create healthier workplaces. I examined leaders' behaviours that contribute to a healthy workplace longitudinally (Time 1, Time 2, and Time 3) through direct report and self-report ratings. The longitudinal data was used to assess the extent to which

leaders' healthy workplace behaviours (self-report and direct report) and direct report outcomes could be increased through the training program, and maintained over time.

### **Study 1: Scale Development**

Although the concept of a psychologically healthy workplace has received increasing attention over the last few years, there is little research on how to measure and develop it (see, for example, Day & Randell, 2014). Transformational leaders have been shown to be effective at promoting organizational and employee outcomes (e.g., Barling et al., 1996). Moreover, Mullen & Kelloway (2011) suggested that leaders should be the primary source to drive psychologically healthy workplace initiatives. Therefore, creating a valid measure to assess leaders' behaviours that contribute to a healthy workplace is essential. Developing such a measure is a critical first step in order to be able to assess leadership behaviours that contribute to a healthy workplace and use the measure in assessment, training evaluation, and intervention studies.

### **Leadership Behaviours that Foster a Healthy Workplace**

The psychologically healthy workplace models suggest that several components such as employee involvement, work-life balance, employee growth and development, employee health and safety, employee recognition, and a culture of support, respect, and fairness may contribute to a psychologically healthy workplace (e.g., Day & Randell, 2014; Grawitch et al., 2006; Kelloway & Day, 2005). However, not all of these components of a healthy workplace are within a leaders' control. Moreover, these initiatives do not necessarily identify the specific leadership behaviours within these components (e.g., being supportive, providing employees with recognition and feedback) that help promote a healthy workplace and employee well-being. Therefore, it is essential to identify the specific leadership behaviours that may foster a psychologically healthy workplace, and consequently, employee well-being.

Drawing on the healthy workplace models that have been highlighted in previous research as well as focusing on behaviours that are within a leaders control, several leadership behaviours are proposed that may contribute to a healthy workplace and employee well-being in terms of: developing and involving employees, providing employee feedback and recognition, interpersonally investing and supporting employees, effectively communicating and promoting psychologically healthy workplace practices, and modeling psychologically healthy workplace behaviours and practices. Nevertheless, in order to ensure that the entire content domain of behaviours that contribute to a healthy workplace is fully understood, I used scale development best practices (Crocker & Algina, 1986; Hinkin, 1998). Specifically, these best practices included consulting the literature, seeking guidance from subject matter experts (SMEs), leaders, and employees, and developing items that tap into these leadership behaviours that contribute to a healthy workplace. Therefore, the goal of Study 1 was to examine healthy workplace behaviours that contribute to a healthy workplace through consultation with SMEs, leaders, and employees and develop a scale to assess such behaviours.

### **Study 1: Methods**

#### **Participants and Procedure**

Leaders, employees, consultants, and industrial/organizational (I/O) psychology graduate students and researchers (i.e., SMEs), participated in the scale development steps. Participants were recruited through a convenience sample of graduate students and existing organizational contacts, as well as by cold-contacting consultants in I/O Psychology. Based on scale development best practices (Crocker & Algina, 1986; Hinkin, 1998), I: (1) conducted focus group and interviews with leaders, employees, and SMEs in order to identify leadership behaviours that contribute to a healthy workplace and employee well-being (see Appendix A);

(2) used SMEs in the theming of the behaviours (see Appendix B); (3) engaged SMEs in the writing of items based on themes and description of themes (see Appendix C); (4) conducted a Q-sort task where SMEs were given a list of items and asked to sort them into predetermined themes (see Appendix D); and (5) used SMEs to review the items for readability, clarity, accuracy, grammar, and relevance, and ensure that the entire content domain was covered (see Appendix E). See Table 1 for a brief overview of these steps and participant demographic information.

This scale development process entailed a combination of an inductive and deductive scale development best practices. I consulted the literature in order to identify the typical behaviours that have been investigated (Hinkin, 1995; 1998). In order to ensure that key leadership aspects were not excluded, participants were asked to provide critical incidents and descriptions of things that leaders can do to create a healthy and/or unhealthy workplace.

**(1) Focus Groups and Interviews.** A total of six people (4 women; 2 men) participated in the focus group. The focus group was used in order to understand a range of behaviours (Kruger & Casey, 2009) that leaders can do to contribute to a healthy workplace (see Appendix A). Participants were first asked to individually identify leadership behaviours that could contribute to a healthy/unhealthy workplace. After each participant individually identified behaviours, each participant shared their individual list with the group in order to generate a final list as a group. As a second part of the focus group, as a group, participants were asked to group all the behaviours into themes. Interviews participants ( $N = 29$ ; 21 women; 8 men) were asked the same questions as the focus group participants. Interviews were conducted until data saturation occurred (i.e., no new information emerged; Guest, Bunce, & Johnson, 2006).

Table 1

*Study 1: Qualitative Scale Development Process*

Scale Development Step	Sample	Sample description	Appendix
(1) <i>Focus groups and interviews</i> Entailed asking participants to answer questions about leaders' behaviours that they think contribute to a healthy workplace	<i>N</i> =6	Focus groups: 4 women; 2 men Graduate students with expertise in leadership and healthy workplaces.	A
	<i>N</i> =29	Interviews: 21 women; 8 men Mean age: 43.10 (range 25 – 68 years) Occupations: police officer, human resource coordinator, manager of occupational health and safety, senior consultant, senior advisor, consulting director, secretary	
(2) <i>Theming behaviours</i> SMEs were given a list of leadership behaviours that can contribute to a healthy workplace and asked to sort them into themes.	<i>N</i> =5	4 women; 1 man Graduate students and faculty member in I/O Psychology with expertise in leadership and healthy workplaces.	B
(3) <i>Item writing</i> SMEs were given definitions of proposed subscales and asked to write 5-7 items per subscale.	<i>N</i> =2	2 women Graduate students in I/O Psychology with expertise in leadership and healthy workplaces.	C
(4) <i>Q-sort task</i> SMEs were given a list of items and asked to sort them into themes, noting any cross-loadings, or missing themes.	<i>N</i> =9	9 women 6 I/O practitioners and 3 faculty members in I/O Psychology with expertise in leadership and healthy workplaces.	D
(5) <i>Item review</i> SMEs will be asked to review all of the items for readability, clarity, grammar, and relevance	<i>N</i> =4	4 women 3 Graduate students and 2 faculty members in I/O Psychology and with expertise in leadership and healthy workplaces	E



**(2) Theming Behaviours.** A separate convenience sample of SMEs included 4 Ph.D. students (4 women; 1 man) and 1 female faculty member with training in Industrial/Organizational (I/O) Psychology and who had expertise in healthy workplaces and leadership. The theming task was used to establish and confirm themes that emerged during the focus groups. The themes were used to help develop items pertaining to specific behaviours that a leader can engage in to contribute to a healthy workplace for the Healthy Workplace Leadership Behaviours (HWLB) measure. As a group, the SMEs were provided with each of the behaviours and asked to inductively sort them into as many themes as they saw appropriate (see Appendix B). The SMEs also were encouraged to identify if a behaviour was associated with more than one theme and were then encouraged to identify the theme that they felt most represented the behaviour.

Another purpose of theming the behaviours was to help ensure that there were no themes that were missing or redundant. During the theming activity, the SMEs discussed cross-loading behaviours and agreed upon the themes that they felt most represented the behaviours. It should also be noted that inter-rater reliability was not assessed given that the SMEs themed the behaviours as a group. It was these behaviours that were themed and used to create items (Hinkin, 1995;1998).

**(3) Item Writing.** Two female Ph.D. students with expertise in healthy workplaces, leadership, and I/O Psychology were recruited to write five to seven items for each of the proposed healthy workplace leadership behaviour themes. Definitions of each of the themes were provided. All SMEs had previous experience with item writing and scale development, and thus followed item development best practices when writing items (e.g., items should be short, simple, positively framed, and not ‘double-barreled’; Hinkin, 1998). All of the participants’

items were amalgamated with the researchers' items that were also developed using the above process.

**(4) Q-sort Task.** A separate convenience sample of SMEs ( $N = 9$ ; 6 female practitioners, 3 female faculty members) in I/O Psychology were recruited to participate in a Q-sort task. The SMEs were asked to review the list of items and sort them into the proposed leadership behaviour themes that emerged in the Theming Behaviours task (i.e., content domains) or a 'not applicable' theme. Conducting a Q-sort is considered a best practice for assessing the content validity and content adequacy of the items (Hinkin, 1985; 1998).

**(5) Item Review.** In the final step of the scale development process, four female PhD students who were expert in the areas of scale development and OHP reviewed the 34 items for readability, clarity, accuracy, grammar, relevance, and redundancy (Hinkin, 1995; 1998).

### **Study 1: Results**

**(1) Focus Groups and Interviews.** The focus group and interview participants identified behaviours that leaders could do to contribute to a healthy workplace. After combining duplicate behaviours, and eliminating suggestions that were not actual behaviours (e.g., conscientiousness), there were 94 behaviours identified (e.g., "gives constructive feedback," "encourages people when appropriate," "communicates effectively," "actively listens to employees," "provides on-the-job training," "leads by example"). Focus group participants were asked to inductively theme the behaviours they identified (i.e., group these things into themes; use as many themes as you deem appropriate). Five themes were identified (communication, employee development, modeling, personality characteristics, and being supportive).

**(2) Theming Behaviours.** At the completion of the 2-hour theming activity, the SMEs theming results provided support that the themes generated in the focus group were appropriate grouping themes for the behaviours reported.

The major themes were the same across the focus group theming participants and the theming behaviour participants. Therefore, there were no theming differences to rectify. Minor theming changes were made by the researcher based on the results of the theming assignment. For example, 'Personality Characteristics' emerged as a theme; This theme was removed given that there are no specific behaviours that represent the very broad theme of personality characteristics. Rather, specific behaviours can be themed and then linked to specific personalities characteristics. Based on discussion with SMEs and existing literature on healthy workplaces, employee development was split into two themes (i.e., 'Provides feedback' and 'Involves and develops employees'). Modeling was renamed 'Promotes a psychologically healthy workplace' (see Appendix F).

Overall, five leadership behaviour themes emerged: (1) Supports employees (i.e., is available to employees); Communicates effectively (i.e., communicates the organizational information and expectations); (3) Provides feedback (i.e., gives feedback – both positive and negative); (4) Involves and develops employees (i.e., provides development opportunities and asks employees their opinions); and (5) Promotes a psychologically healthy workplace (i.e., models appropriate behaviour). The theme names were created based on discussions with SMEs and on the existing literature on healthy workplaces.

**(3) Item Writing.** SMEs wrote multiple items for each of the above themes individually and the items were pooled and evaluated. After all redundant items were deleted, a total of 56 items remained, resulting in 10 – 13 items per theme.

**(4) Q-sort Task.** Based on keeping items that were correctly sorted by 75% percent of participants (i.e., a minimum of 75% of SMEs correctly sorted the item into the appropriate theme; Hinkin, 1998), removing 10 items that cross-loaded (i.e., were sorted into more than one theme), removing 15 redundant items (based on qualitative feedback from SMEs), and adding three items to ensure the entire content domain was captured (following the deletion of cross-loading items), 34 items were remained.

**(5) Item Review.** Based on the feedback from SMEs who reviewed the items, five additional items were added in order to ensure the entire content domain was covered, and seven items were reworded to enhance clarity further. Thus, the final Healthy Workplace Leadership Behaviours scale resulting from Study 1 consisted of 39 items, 6-9 items per subscale (see Appendix E).

### **Study 1: Discussion**

Although several researchers have identified components of a healthy workplace (e.g., Day & Randell, 2014; Grawitch et al., 2006; Kelloway & Day, 2005) and researchers have focused on the role that leaders can play in psychologically healthy workplace initiatives (e.g., Mullen & Kelloway, 2011) and employee outcomes (e.g., Barling et al., 1996), no study has explicitly examined the specific leadership behaviours that may contribute to a healthy workplace. Therefore, the aim of Study 1 was to explore the content domain of leadership behaviours that contribute to a healthy workplace and use effective scale development practices (Crocker & Algina, 1986; Hinkin, 1998) to develop the HWLB scale using both deductive and inductive methodologies. Through these practices, five overall themes of healthy workplace leadership behaviours were identified: (1) supports employees; (2) communicates effectively; (3) provides feedback; (4) involves and develops employees; and (5) promotes a psychologically

healthy workplace. Therefore, Study 1 extended previous research by developing a scale that measured leadership behaviours that contribute to a healthy workplace and employee well-being.

### **Limitations and Future Research**

Although efforts were made to obtain a diverse sample for the focus group and interview participants, the participants were a convenience sample with the majority of participants working in business or office jobs (e.g., secretary, senior consultant, manager) with only a few participants in other types of jobs (e.g., police officer). Therefore, the leadership behaviours identified may be more relevant to office-based occupations, and may not reflect the entire range of leadership behaviours across jobs and industries. Similarly, participants also were predominantly women so results may not generalize to men. Finally, because of the nature of the study, the subject matter experts needed to have sufficient work experience in order to be considered an 'expert'. Thus, most managers had more than 10 years of experience, and most employees had more than 20 years of experience. Although this experience is considered necessary in order for the sample to be able to accurately identify key leadership behaviours, perhaps their work experience may lead them to view leadership in a different way than more junior employees and managers. Thus, future research might benefit from including a more diverse sample to ensure that no key leadership behaviours were omitted from the measure.

In order to ensure a valid set of leadership behaviours that represented the full content domain, I used a combination of deductive and inductive scale development best practices to develop the scale. Although utilizing this dual focus is a stringent process to help develop a valid measure, there still are some potential limitations to the process. It is possible that using inductive reasoning may over-rely on the specific experiences of the participants, and thus miss some key experiences of other workers and leaders. Similarly, because the interview and focus

group participants were asked only about critical incidents and behaviours that leaders could do to contribute to a healthy workplace/unhealthy workplace, there is a possibility that actions/behaviours not explicitly considered part of a leader's role could have been missed (e.g., developing organizational healthy workplace initiatives). Interestingly, by using SMEs who had knowledge of the healthy workplace literature, their conceptualized themes could have been influenced by their knowledge of theoretical models given that it is not possible to theme behaviours in an epistemological vacuum (Braun & Clarke, 2006). Future research may consider using more leaders and employees in addition to SMEs in leadership and psychologically healthy workplaces to adequately sample the domain. Moreover, future research may consider asking more general questions first such as 'what creates a healthy/unhealthy workplace' and then subsequently asking what leaders can specifically do to contribute to a healthy workplace, in order to increase the possibility of covering the entire content domain and reducing the risk of how SMEs may conceptualize leadership behaviours.

## **Conclusion**

In conclusion, I used scale development best practices to explore the content domain of leadership behaviours that can contribute to a healthy workplace, and I developed the HWLB scale. The HWLB Scale consists of five subscales (provides feedback, communicates effectively, involves and develops employees, promotes a psychologically healthy workplace, and supports employees). Study 1 provided preliminary evidence to support the content validity of the HWLB scale. In Study 2, I examined the HWLB scale in more depth.

### **Study 2: Scale Validation**

Preliminary evidence of content validity for the Healthy Workplace Leadership Behaviours (HWLB) scale was developed in Study 1 by using classical test theory and scale

development practices (e.g., Crocker & Algina, 1986; Hinkin, 1998). Building on this work, Study 2 was designed to examine the psychometric properties of the HWLB scale, in terms of its reliability and construct and criterion-related validity. More specifically, I wanted to examine evidence of the HWLB scales validity in terms of its theoretical factor structure, its relationships with theoretically similar constructs, and its relationships with employee and leader-level outcomes (e.g., well-being, stress).

### **Construct Validity**

In order to provide some evidence of construct validity, the factor structure of the HWLB scale should reflect the five proposed themes from Study 1, and it should be related to relevant constructs. Therefore, construct validity was assessed by examining the HWLB scales theorized factor structure and its relationship with other constructs.

***Hypothesis 1:*** The HWLB scale clusters into five distinct and reliable factors (i.e., provide feedback, communicate effectively, involve and develop employees, promote a psychologically healthy workplace, and support employees).

Moreover, in order to establish further evidence for construct validity of the HWLB subscales, the subscales should be related to theoretically associated constructs. For example, given that positive leadership should be related to the promotion of healthy workplace behaviours (e.g., Inness et al., 2010), healthy workplace leadership behaviours should be related to supportive leadership behaviours (e.g., ethical leadership, authentic leadership, transformational leadership; Kelloway et al., 2017, Kelloway et al., 2008, Nielsen, 2014). Therefore, we would expect that HWLBs will be related to other forms of positive leadership, such as transformational leadership. More specifically, because the HWLB scale emphasizes the interpersonal interactions between a leader and an employee (e.g., supporting individuals,

feedback to individual employees, developing and mentoring individual employees based on their needs), I also expect the HWLB subscales to be positively related to the individualized consideration subscale of the MLQ. That is:

***Hypothesis 2:*** The subscales of the HWLB scale are related to (a) a global measure of transformational leadership and (b) individualized consideration.

### **Criterion-Related Validity**

In addition to construct validity, I also assessed the criterion-related validity of the measure, in terms of the scales' relationships with theoretically relevant outcomes. In line with the Conservation of Resources Theory (Hobfoll, 1998; Hobfoll & Shirom, 2001), the Job-Demands Resources Model (Demerouti et al., 2001), and the Effort-Reward Imbalance Theory (Siegrist, 2001), healthy workplaces and leadership behaviours that contribute to a healthy workplace may be able to act as resources or rewards for employees. Resources, or a balance between efforts and rewards, can predict both stress and employee well-being (Demerouti et al., 2001; Hobfoll, 1998; Hobfoll & Shirom, 2001; Siegrist, 2001). Leaders play a role in providing employees feedback, support, recognition, rewards, promoting career advancement, and communicating about available resources (e.g., Godkin et al., 2010; Kuoppala et al., 2008; Stone, 2016). Thus, we would expect that healthy workplace leadership behaviours (which encompasses behaviours related to support, communication, feedback, growth and involvement, and promotion) would be negatively associated with employee stress and positively associated with employee well-being.

Therefore, in order to collect additional validity evidence for the scale, I examined the scales relationship with expected employee outcomes. Specifically, because healthy workplaces and leadership behaviours are associated with employee well-being (e.g., Grawitch et al., 2006;



Grawitch et al., 2007; Kelloway et al, 2008; Mullen & Kelloway, 2011; Skakon et al., 2010), the HWLB scale should theoretically also be related to positive employee outcomes such as employee well-being (i.e., low stress, strain, and high job satisfaction, given that job satisfaction is considered an additional indicator of employee well-being; Judge & Bono, 2001). Moreover, given that trust in a leader is an outcome associated with good leadership (e.g., Casimir, Waldman, Bartman, & Yang, 2006; Jung & Avolio, 2000; Liu, Siu, & Shi, 2010), it is expected that trust in a leader should also be associated with the HWLB subscales. That is, I expect that direct reports who rate their leaders as higher in the five HWLB subscales will report lower levels of stress and strain and higher levels of satisfaction and trust.

***Hypothesis 3:*** The subscales of the HWLB scale are related to employees' levels of: decreased (a) strain, (b) stress, and increased (c) trust in leader, and (d) job satisfaction.

As noted above, I predicted that transformational leadership and the HWLB subscales will be positively correlated with each other because of their conceptual overlap. However, if the transformational leadership scale and the HWLB subscales overlap too much, there may be little value in having a new scale. Given that the HWLB subscales focuses on leaders' behaviours and how such behaviours can contribute to a psychologically healthy workplace, as opposed to just measuring the four dimensions of transformational leadership I expected that the HWLB subscales will predict additional variance in employee outcomes beyond transformational leadership. Therefore, in order to make a valuable contribution, the HLWB measure should explain additional variance in the employee outcomes over and above what is explained by transformational leadership and individualized consideration. Therefore, I hypothesized:

***Hypothesis 4:*** After controlling for the effects of (a) the global transformational leadership measure and (b) the individualized consideration subscale the subscales of the HWLB

scale account for incremental variance in employee outcomes, in terms of: (a) strain, (b) stress, (c) trust in leader, and (d) job satisfaction.

## Study 2: Methods

### Participants

Participants were recruited to participate in a survey about their leaders' behaviours and their own outcomes. Participants were recruited through a convenience sample. Specifically, organizational contacts were asked to send a recruitment script to employees describing the study. At the same time, the recruitment script also was posted on social media platforms describing the study. Interested participants were asked to complete an online survey consisting of the following measures using Qualtrics. A total of 601 participants completed the survey. However, only 416 participants completed the demographics section (because this section was at the end of the survey). Of the available data, there were 284 women, 129 men, and 3 participants who identified as an other gender identity (e.g., nonbinary). All participants who responded indicated that they were employed part-time or full-time with an average age of 32.75 ( $SD = 10.46$  years); and an average tenure for their current positions of 3.76 years ( $SD = 5.36$  years). Most of the participants had some post-secondary education (i.e., 92.2 percent).

### Measures

**Demographics Questionnaire.** Participants provided information on their age, gender, education, tenure, industry, and leadership status.

**Healthy Workplace Leadership Behaviours.** This new scale developed in Study 1 was used to assess employees' perceptions of their leaders' behaviours that contribute to a psychologically healthy workplace. Participants rated the degree to which they agreed with each item (e.g., "My leader actively supported efforts to promote physical and psychological health at

work”) on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). In the current study, Cronbach’s alpha for the 4-item subscales ranged from  $\alpha=.89$  to  $\alpha=.93$ .

**Transformational Leadership.** Transformational leadership was assessed with the direct report version of the General Transformational Leadership scale (GLT; Carless, Wearing, & Mann, 2000). Participants rated the degree to which the item (e.g., “My leader gives encouragement and recognition to staff”) was reflective of their leader on a 5-point frequency scale from 0 (*rarely or never*) to 4 (*frequently, if not always*). In the current study, Cronbach’s alpha was  $\alpha=.95$ .

**Individualized Consideration.** Individualized consideration was assessed with the individualized consideration dimension of the Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1997). Participants rated the degree to which the item (e.g., “My leader considered me as having difference needs, abilities, and aspirations from others”) was reflective of their leader on a 5-point frequency scale from 0 (*rarely or never*) to 4 (*frequently, if not always*). In the current study, Cronbach’s alpha was  $\alpha = .87$ .

**Strain.** Strain was assessed with the 12-item General Health Questionnaire (GHQ; Goldberg, 1972). Participants rated the extent to which they agreed with each item (e.g., “Have you been feeling unhappy and/or depressed?”) using a 7-point scale from 1 (*not at all*) to 7 (*all the time*). Higher scores on the GHQ are indicative of higher levels of strain or poor psychological well-being. In the current study, Cronbach’s alpha was  $\alpha = .92$ .

**Stress.** Participants completed the stress subscale of the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) in order to assess stress. The seven-item stress subscale measures areas such as nervousness, tension, and difficulty relaxing. Participants rated the extent to which each item applied to them over the past week (e.g., “I found it difficult to relax”), using

a 4-point scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). In the current study, Cronbach's alpha was  $\alpha = .90$ .

**Trust in Leader.** Trust in the leader was assessed with 4-items adapted from Cook and Wall (1980) and Podsakoff et al.'s (1990) trust in leader measures. The scale asked employees to rate their agreement with each item (e.g., "I think my leader is trustworthy") on a 5-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). In the current study, Cronbach's alpha was  $\alpha = .96$ .

**Job Satisfaction.** Job satisfaction was measured with a 1-item scale (Scarpello & Campbell, 1983). Participants responded to the following item ("How satisfied are you with your job, in general?") using a 5-point Likert-type scale from 1 (*strongly dissatisfied*) to 5 (*strongly satisfied*).

## Study 2: Results

Descriptive statistics (means, standard deviations, and Cronbach's alpha coefficients) and intercorrelations are presented in Table 2. In order to address Hypothesis 1, data were split into two files. With one half of the data ( $N = 299$ ), a Principal Components Analysis (PCA) with oblimin rotation was conducted with the HWLB items that were developed in Study 1. The initial PCA identified five eigenvalues greater than one. Based on Cattell's scree test (Cattell, 1966), examination of the scree plot suggested either a 1-factor or 5-factor solution (see Figure 1), and therefore, both solutions were examined. The 1-factor solution accounted for 58.86% of the solution with the communality values ranging from .29 to .77. The 5-factor solution accounted for 74.17% of the variance in the solution with communality values ranging from .50 to .84. An examination of the pattern matrix provided evidence for a factor structure consistent with the five theorized sub-facets (i.e., Supporting Employees, Communicates Effectively,

Providing Feedback, Involving and Developing Employees, and Promoting a Psychologically Healthy Workplace). With the exception of 7 items, all of the items loaded on their predicted factors. However, there were 7 complex items, such that the item loaded not only on its intended factor but also on another factor. Given that both theory and the PCA tended to support the 5-factor model, I proceeded with the 5-factor model in the analyses. In terms of reliability, Cronbach's alpha for the five subscales ranged from  $\alpha = .89$  to  $.93$ . Overall, there was support for a 5-factor model, thus supporting Hypothesis 1.

In order to create a more parsimonious scale, based on theoretical evidence, subscale reliabilities, item-total correlations, and the factor analysis, 19 items were deleted, and each subscale was reduced to four items. Specifically, items that did not load on their predicted factor, items that were complex, items that did not correlate highly with each other/had lower item total correlations, items that reduced the subscale Cronbach's Alpha by maintaining the item, and items that were theoretically redundant (i.e., similar items) were criteria for deletion. Following good modeling practice, additional PCAs were conducted as items were removed to ensure the factor structure was still being maintained. Each subscale was reduced to four items based on the above scale development best practices and the practical convenience of administering a shorter scale with other scales in a survey. Therefore, using the same sample ( $N = 299$ ), I conducted another PCA of the remaining 20 items to assess whether this reduced scale would still demonstrate a 5-factor structure and be reliable (see Table 3). The PCA identified a 5-factor solution explaining 81.02% of the variance with communality values ranging from  $.68$  to  $.88$  (see Figure 2). An examination of the pattern matrix suggested that the factor structure was consistent with the theorized subscales, with the factor loadings for the solution ranging from  $.42$  to  $.93$ . Two items had cross-loadings above  $.30$  (i.e., contributes to my professional development and

provides me with opportunities for growth). However, these items had higher primary loadings of .42 and .52 on their theorized factors. Given the theoretical importance of these two items, they were retained for the final scale.

The five subscales are summarized below:

- (1) *Support Employees*. A four-item supports employees subscale measured the extent to which leaders genuinely cared about and supported employees as individuals and was available when needed (e.g., takes the time to get to know me). In the present sample, item loading ranged from .51 to .66 and a Cronbach's alpha of  $\alpha = .93$ , with all item-total correlations ranging from .67 to .87.
- (2) *Communicate Effectively*. A four-item communicate effectively subscale measured the extent to which leaders communicated information, reasons for decisions, and expectations in an effective manner (e.g., "clearly communicates expectations to me"). In the present sample, item loadings ranged from .76 to .85 with a Cronbach's alpha of  $\alpha = .90$ , with all item-total correlations ranging from .63 to .76.
- (3) *Provide Feedback*. A four-item feedback subscale measured the extent to which leaders provided employees with positive and constructive feedback (e.g., "provides me with positive feedback by acknowledging me for my work"). In the present sample, item loadings ranged from .53 to .93 with a Cronbach's alpha of  $\alpha = .91$ , with all item-total correlations ranging from .64 to .81.

Table 2

*Study 2: Variable Descriptive Statistics, Intercorrelations, and Reliabilities*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	32.79	10.45	-													
2. Gender	0.70	.48	-.08	-												
3. HWLB Scale	3.47	1.03	-.10 <sup>a</sup>	-.02	(.97)											
4. Feedback	3.66	1.05	-.13 <sup>b</sup>	-.01	.89 <sup>c</sup>	(.91)										
5. Communicate	3.40	1.15	-.08	-.04	.87 <sup>c</sup>	.75 <sup>c</sup>	(.90)									
6. Involve & Dvpt	3.28	1.24	-.07	.00	.86 <sup>c</sup>	.69 <sup>c</sup>	.65 <sup>c</sup>	(.89)								
7. Promote PHW	3.33	1.16	-.09	.02	.88 <sup>c</sup>	.71 <sup>c</sup>	.73 <sup>c</sup>	.68 <sup>c</sup>	(.91)							
8. Support	3.70	1.22	-.08	.02	.92 <sup>c</sup>	.79 <sup>c</sup>	.73 <sup>c</sup>	.78 <sup>c</sup>	.77 <sup>c</sup>	(.93)						
9. Transformational Leadership	2.36	1.18	-.12 <sup>a</sup>	-.01	.89 <sup>c</sup>	.78 <sup>c</sup>	.75 <sup>c</sup>	.80 <sup>c</sup>	.80 <sup>c</sup>	.81 <sup>c</sup>	(.95)					
10. Indiv Consider	2.23	1.14	-.15 <sup>b</sup>	.01	.86 <sup>c</sup>	.75 <sup>c</sup>	.70 <sup>c</sup>	.80 <sup>c</sup>	.75 <sup>c</sup>	.81 <sup>c</sup>	.86 <sup>c</sup>	(.85)				
11. Strain	3.04	1.18	-.05	.01	-.48 <sup>c</sup>	-.41 <sup>c</sup>	-.44 <sup>c</sup>	-.38 <sup>c</sup>	-.46 <sup>c</sup>	-.44 <sup>c</sup>	-.42 <sup>c</sup>	-.43 <sup>c</sup>	(.92)			
12. Stress	2.06	0.75	-.07	.04	-.28 <sup>c</sup>	-.24 <sup>c</sup>	-.30 <sup>c</sup>	-.17 <sup>c</sup>	-.30 <sup>c</sup>	-.27 <sup>c</sup>	-.27 <sup>c</sup>	-.24 <sup>c</sup>	.72 <sup>c</sup>	(.90)		
13. Trust in Leader	5.06	1.75	-.11 <sup>a</sup>	.01	.85 <sup>c</sup>	.75 <sup>c</sup>	.73 <sup>c</sup>	.69 <sup>c</sup>	.78 <sup>c</sup>	.81 <sup>c</sup>	.84 <sup>c</sup>	.79 <sup>c</sup>	-.47 <sup>c</sup>	-.34 <sup>c</sup>	(.96)	
14. Job Satisfaction	3.50	1.22	-.02	.02	.67 <sup>c</sup>	.55 <sup>c</sup>	.60 <sup>c</sup>	.59 <sup>c</sup>	.62 <sup>c</sup>	.62 <sup>c</sup>	.61 <sup>c</sup>	.63 <sup>c</sup>	-.62 <sup>c</sup>	-.38 <sup>c</sup>	.59 <sup>c</sup>	-

*Note.* <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$

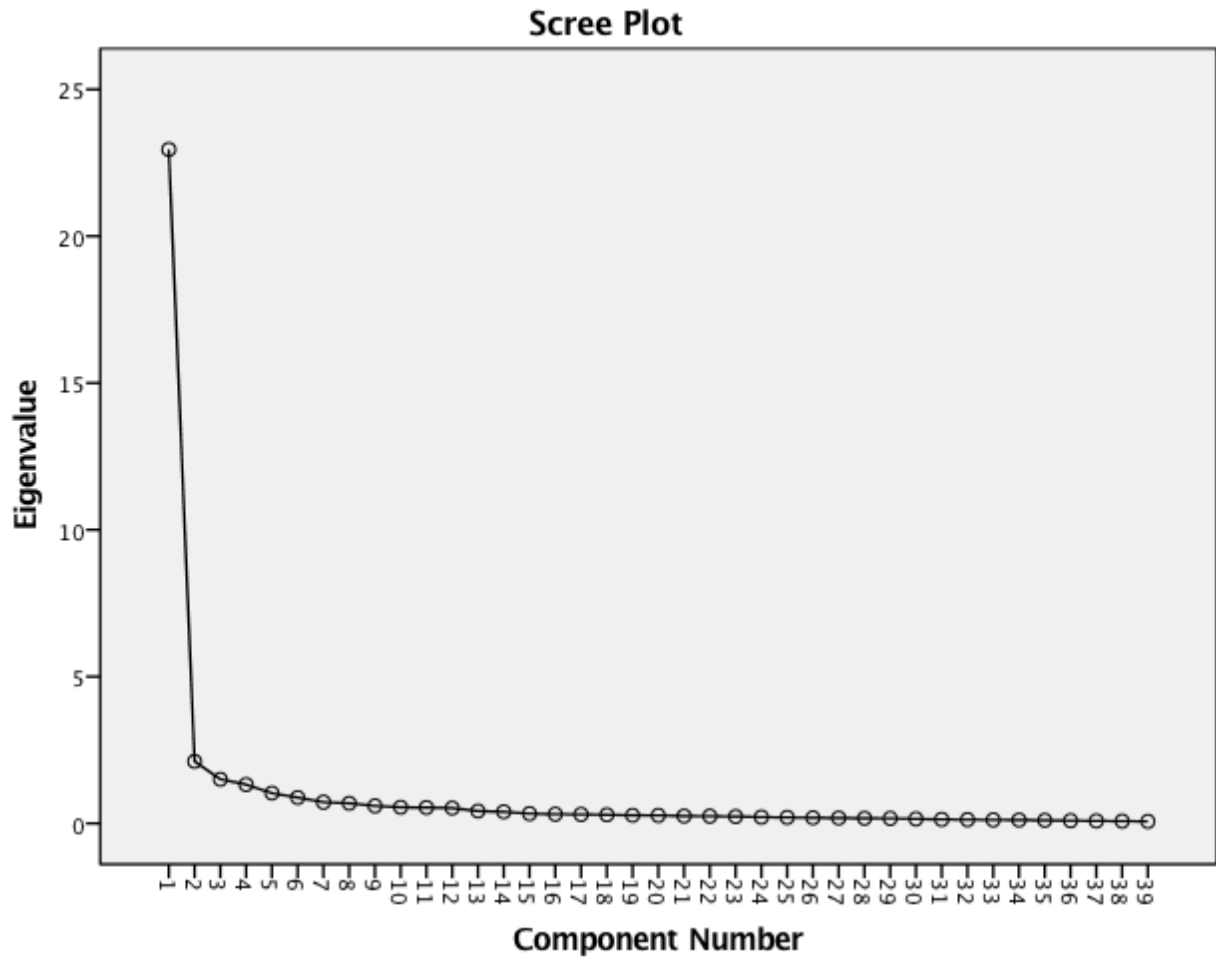


Figure 1. Study 2: Scree plot for the initial principal components analysis

(4) *Involve and Develop.* A four-item involve and develop subscale measured the extent to which leaders contributed to employees' professional development and involved them in decisions (e.g., provides me with opportunities for growth). In the present sample, item loadings ranged from .42 to .85 with a Cronbach's alpha of  $\alpha = .89$ , with all item-total correlations ranging from .58 to .82.



Table 3

*Study 2: Factor Loadings and Communalities for the Healthy Workplace Leadership Behaviours Scale (N = 299)*

Item	Communalities	1	2	3	4	5
<b>Provides Feedback</b>						
... is respectful when providing negative feedback to me.	.88	<b>.93</b>	.02	.07	-.04	.00
... provides me with positive feedback by acknowledging me for my work.	.68	<b>.53</b>	-.26	-.03	.07	-.17
... frames feedback to me in a constructive manner.	.87	<b>.79</b>	-.08	.06	.08	-.04
... provides me with honest feedback in a respectful manner.	.85	<b>.72</b>	.00	.08	.17	-.07
<b>Communicates Effectively</b>						
... clearly communicates expectations to me.	.80	-.13	.05	.11	<b>.85</b>	-.13
... clearly communicates to me.	.83	.17	.08	-.04	<b>.75</b>	-.19
... checks that I understand the message when communicating with me.	.76	.15	-.01	-.02	<b>.79</b>	.04
... communicates clear explanations for all decisions to me.	.82	.07	-.28	.04	<b>.76</b>	.19
<b>Involve and Develop</b>						
... contributes to my professional development.	.80	-.03	<b>-.42</b>	.15	.20	<b>-.37</b>
... provides me with opportunities for growth.	.77	.02	<b>-.52</b>	.10	.11	<b>-.33</b>
... seeks my input on decisions.	.82	.13	<b>-.85</b>	-.05	-.02	-.03
... involves me in important decisions.	.84	-.02	<b>-.83</b>	.16	.04	.01
<b>Promotes a Psychologically Healthy Workplace</b>						
... promotes a healthy workplace.	.78	.12	-.13	<b>.61</b>	.12	-.07
... endorses healthy workplace initiatives and policies.	.77	-.08	-.01	<b>.93</b>	-.05	-.02
... models healthy workplace behaviours.	.80	.17	.03	<b>.83</b>	.06	.12

... actively supports efforts to promote physical and psychological health at work.	.81	.03	-.03	<b>.77</b>	.03	-.13
<b>Supports Employees</b>						
... takes the time to get to know me.	.82	.07	-.23	.02	.09	<b>-.66</b>
... genuinely cares about my well-being.	.88	.22	-.11	.16	.03	<b>-.62</b>
... supports me.	.88	.29	-.06	.17	.04	<b>-.58</b>
... is there for me when needed.	.80	.11	.04	.17	.29	<b>-.51</b>

Note. All factor loadings over .30 have been bolded.

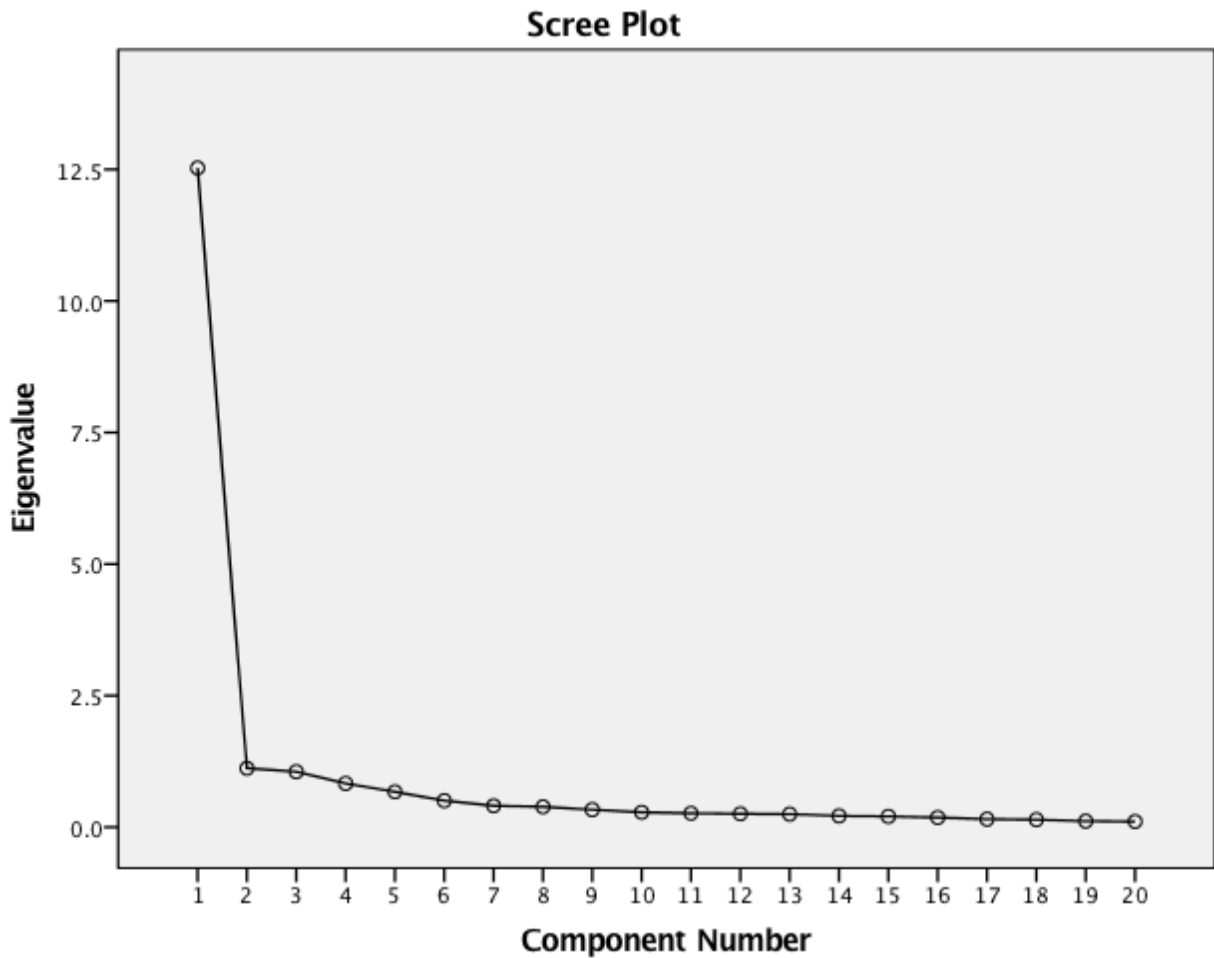


Figure 2. Study 2: Scree plot for the final principal components analysis

(5) *Promote a Psychologically Healthy Workplace*. A four-item promotes a psychologically healthy workplace subscale measured the extent to which leaders modeled and encouraged healthy workplace behaviours and promoted healthy workplace policies and practices (e.g., “promotes a healthy workplace”). In the present sample, item loading ranged from .61 to .93 and a Cronbach’s alpha of  $\alpha = .91$ , with all item-total correlations ranging from .68 to .74.

Given that it has been argued that an EFA can be considered exploratory and is not necessarily designed to test hypotheses or theories (Costello & Osborne, 2005), a Confirmatory Factor Analysis (CFA) was conducted with the other half of the sample ( $N = 302$ ) in order to examine the fit of a 5-factor structure of the 20-item scale and to evaluate competing models using MPlus. The hypothesized 5-factor structure was a good fit to the data,  $\chi^2 (160, N = 302) = 369.74, p < .001; CFI = .96, TLI = .95, RMSEA = .07$ ), and all items loaded on their expected factors. Following good modeling, I compared the hypothesized 5-factor model against one competing theoretical model: 1-factor (see Table 4 for CFA results comparing different models and Figure 3 for factor loadings for the 5-factor model). Further, a chi-square difference test  $\chi^2_{\text{difference}} (1042.04 - 369.74 = 673.30$ , which is distributed with  $170 - 160 = 10$  degrees of freedom; critical value of  $\chi^2$  with 10 degrees of freedom is 18.31), indicated that the obtained value is greater than the critical value for  $\chi^2$ , concluding that there is a significant difference between the two models. Although the 5-factor model was more parsimonious and fit the data better than the 1-factor model, it should be noted that the 5 factors were highly correlated. Thus, there is also evidence to support the utility of the scale as a 1-factor model. However, for theoretical purposes and given that the 5-factor model met the minimum fit requirements (i.e.,  $CFI = > .95, TLI = > .95, RMSEA = < .08$ ; e.g., Hu & Bentler, 1999; Kelloway, 2014), I

proceeded with the 5-factor model. In terms of reliability, the overall Cronbach's alpha for the five subscales ranged from .89 to .93. Therefore, Hypothesis 1 was supported: The HWLB scale clustered into five reliable factors.

Table 4

*Study 2: Fit Indices for the Competing Confirmatory Factor Analyses Models (N = 302)*

Model	$\chi^2$	<i>df</i>	<i>CFI</i>	<i>TLI</i>	<i>RMSEA</i>
1-factor	1042.04 <sup>c</sup>	170	.84	.82	.13
5-factor	369.74 <sup>c</sup>	160	.96	.95	.07

*Note.* CFI = comparative fit index, TLI = Tucker-Lewis index, and RMSEA = root mean square error of approximation; <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$

### **Construct Validity of Healthy Workplace Leadership Behaviour Subscales**

I conducted multiple regression analyses to examine the extent to which the employees' perceptions of their leaders' healthy workplace leadership behaviours (i.e., HWLB subscales) were related to their perception of their leaders' transformational leadership behaviours (i.e., global transformational leadership scale and individualized consideration; Hypothesis 2). The HWLB subscales accounted for 78% of the variance in global transformational leadership ( $R^2 = .78$ ,  $F(5, 471) = 347.13$ ,  $p < .001$ ), with all 5 HWLBs being uniquely associated with transformational leadership (see Table 5). Likewise, the HWLB subscales accounted for 75% of the variance in individualized consideration dimension of the MLQ ( $R^2 = .75$ ,  $F(5, 466) = 286.17$ ,  $p < .001$ ), with 4 of the HWLB subscales being uniquely associated (communication was not uniquely associated with Individualized Consideration; see Table 5). That is, 78% of the variance in global transformational leadership, and 75% of the variance in individualized consideration was associated with the HWLB subscales (see Table 5). Therefore, Hypothesis 2

was supported: 5 of HWLBs were related to leaders' transformational leadership and 4 of the HWLBs were related to leaders' individualized consideration.

### **Criterion-Related Validity of HWLB Subscales**

Four multiple regressions were conducted to examine whether employees' perceptions of their leaders' healthy workplace leadership behaviours (i.e., HWLB subscales) were related to employees' well-being (i.e., stress, strain), trust in leader, and job satisfaction (i.e., Hypothesis 3). The HWLB subscales accounted for 24% of the variance in employee strain ( $R^2 = .24$ ,  $F(5,406) = 25.26$ ,  $p < .001$ ), 12% of the variance in employee stress ( $R^2 = .12$ ,  $F(5,408) = 11.19$ ,  $p < .001$ ), 74% of the variance in employee trust in leader ( $R^2 = .74$ ,  $F(5,412) = 234.70$ ,  $p < .001$ ), and 45% of the variance in employee job satisfaction ( $R^2 = .45$ ,  $F(5,416) = 68.39$ ,  $p < .001$ ; see Table 6). Therefore, Hypothesis 3 was supported: The HWLB subscales were related to employee well-being (stress, strain), trust in the leader, and job satisfaction.

### **Incremental Validity of HWLB Subscales**

Four hierarchical regressions were conducted in order to assess whether employees' perceptions of their leaders' healthy workplace leadership behaviours (i.e., HWLB subscales) explained additional variance in employee outcomes (i.e., strain, stress, trust in leader, and job satisfaction) over and above the variance explained by transformational leadership and individualized consideration (i.e., Hypothesis 4).

**Transformational Leadership.** When entered in the first step, global transformational leadership accounted for 17% of the variance in employee strain ( $R^2 = .17$ ,  $F(1,410) = 83.77$ ,  $p < .001$ ), 7% of the variance in stress ( $R^2 = .07$ ,  $F(1,412) = 32.79$ ,  $p < .001$ ), 72% of the variance in trust in leader ( $R^2 = .72$ ,  $F(1,415) = 1055.50$ ,  $p < .001$ ), and 36% of the variance in job satisfaction ( $R^2 = .36$ ,  $F(1,419) = 238.25$ ,  $p < .001$ ). When entered in the second step, the five

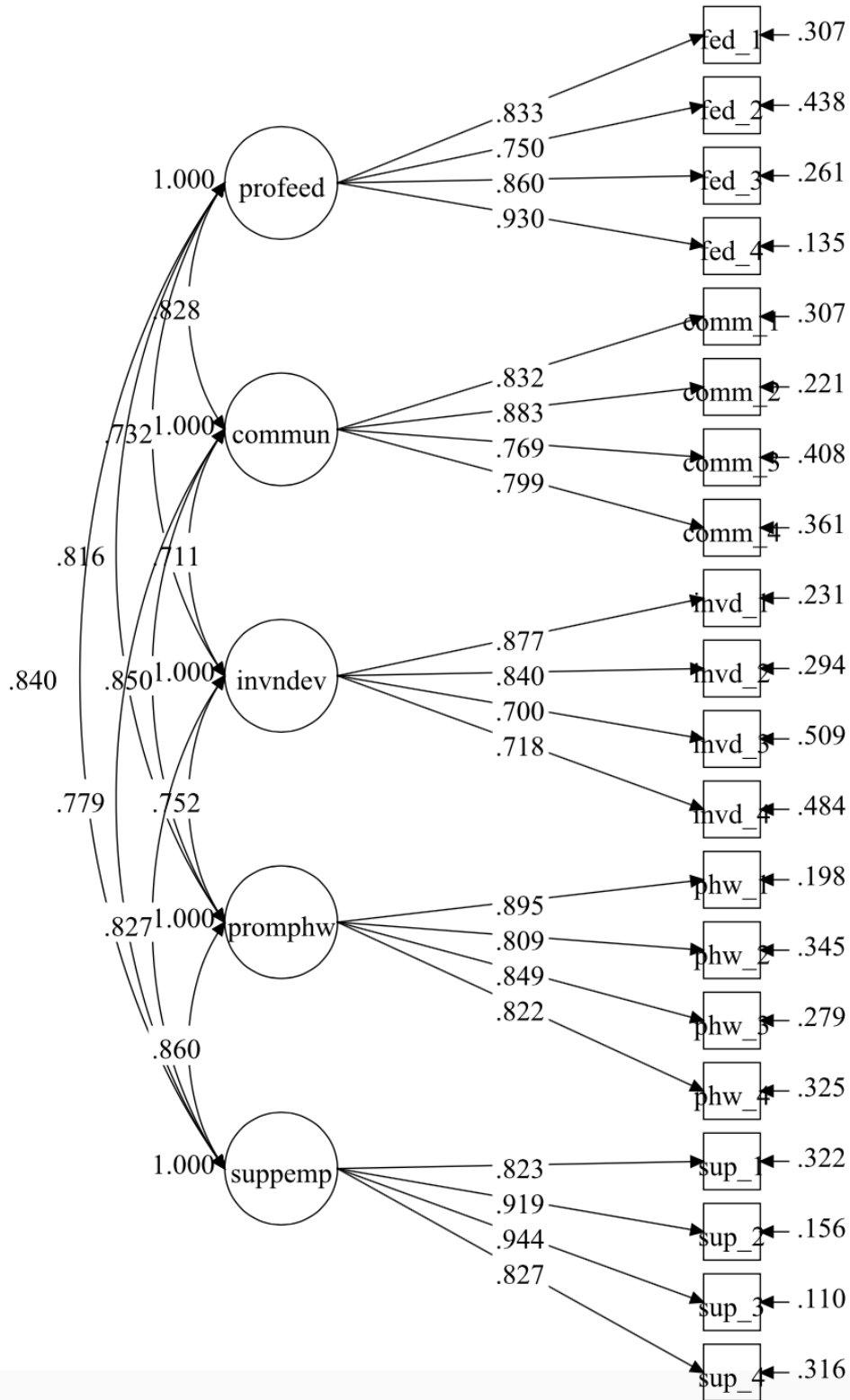


Figure 3. Study 2: Confirmatory factor analysis for the 5-factor model ( $N = 302$ )

Table 5

*Study 2: Regression Analyses of Transformational Leadership and Individualized Consideration on the 5 HWLB Subscales (N=472-477; Hypothesis 2)*

Predictor	Transformational Leadership			Individualized Consideration		
	$\beta$	<i>SEB</i>	$R^2$	$\beta$	<i>SEB</i>	$R^2$
			.78 <sup>c</sup>			.75 <sup>c</sup>
Support	.11 <sup>a</sup>	.04		.23 <sup>c</sup>	.05	
Communication	.15 <sup>c</sup>	.04		.04	.04	
Feedback	.20 <sup>c</sup>	.04		.15 <sup>b</sup>	.05	
Involve & Develop	.29 <sup>c</sup>	.03		.32 <sup>c</sup>	.04	
Promote a Healthy Workplace	.26 <sup>c</sup>	.04		.16 <sup>c</sup>	.04	

*Note.* <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$

HWLB subscales jointly accounted for an additional 7% of the variance in employee strain ( $R^2_{\text{change}} = .07$ ,  $F(5,405) = 21.06$ ,  $p < .001$ ), 5% of the variance in employee stress ( $R^2_{\text{change}} = .05$ ,  $F(5,407) = 9.43$ ,  $p < .01$ ), 7% of the variance in employee trust in leader ( $R^2_{\text{change}} = .07$ ,  $F(4,410) = 251.82$ ,  $p < .001$ ), and 9% of the variance in employee job satisfaction ( $R^2_{\text{change}} = .09$ ,  $F(5,414) = 56.92$ ,  $p < .001$ ). The Promotion of a Healthy subscale was uniquely associated with all four outcomes. The Involve and Develop and Support subscales were uniquely associated with job satisfaction, trust in leader, and stress. Communication was uniquely associated with strain and stress. The Feedback subscale was uniquely associated only with trust in leader (see Table 7).

Table 6

*Study 2: Regression Analyses of Strain, Stress, Trust, and Job Satisfaction on the 5 HWLB Subscales (N = 412-422; Hypothesis 3)*

Predictor	Strain			Stress			Trust in Leader			Job Satisfaction		
	$\beta$	<i>SEB</i>	$R^2$	$\beta$	<i>SEB</i>	$R^2$	$\beta$	<i>SEB</i>	$R^2$	$\beta$	<i>SEB</i>	$R^2$
			.24 <sup>c</sup>			.12 <sup>c</sup>			.74 <sup>c</sup>			.45 <sup>c</sup>
Support	-.09	.09		-.08	.06		.47 <sup>c</sup>	.08		.16 <sup>a</sup>	.08	
Communication	-.16 <sup>a</sup>	.08		-.12 <sup>a</sup>	.05		.20 <sup>b</sup>	.07		.13	.07	
Feedback	-.06	.09		.01	.06		.28 <sup>c</sup>	.07		.01	.07	
Involve & Develop	-.02	.07		.11 <sup>a</sup>	.05		.04	.06		.18 <sup>b</sup>	.06	
Promote a Healthy Workplace	-.23 <sup>b</sup>	.08		-.13 <sup>a</sup>	.05		.44 <sup>c</sup>	.07		.29 <sup>c</sup>	.07	

*Note.* <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$



Follow-up redundancy analyses were conducted whereby the five HWLB subscales were entered in the first step, and global transformational leadership was entered at the second step for all four of the dependent variables (i.e., strain, stress, trust in leader, and job satisfaction). When entered at the second step, transformational leadership did not account for additional variance in strain, stress, or job satisfaction. However, transformational leadership did account for an additional 5% of the variance in trust in leader ( $R^2_{\text{change}} = .05$ ,  $F(6,410) = 251.82$ ,  $p < .001$ ).

**Individualized Consideration.** When entered in the first step, individualized consideration accounted for 19% of the variance in employee strain ( $R^2 = .19$ ,  $F(1,408) = 92.97$ ,  $p < .001$ ), 6% of the variance in employee stress ( $R^2 = .06$ ,  $F(1,409) = 25.57$ ,  $p < .001$ ), 63% of the variance in employee trust in leader ( $R^2 = .63$ ,  $F(1,413) = 704.37$ ,  $p < .001$ ), and 39% of the variance in job satisfaction ( $R^2 = .39$ ,  $F(1,416) = 260.43$ ,  $p < .001$ ). When entered in the second step, the five HWLB subscales jointly accounted for an additional 6% of the variance in employee strain ( $R^2_{\text{change}} = .06$ ,  $F(5,403) = 21.34$ ,  $p < .001$ ), 7% of the variance in employee stress ( $R^2_{\text{change}} = .07$ ,  $F(5,404) = 9.47$ ,  $p < .001$ ), 13% of the variance in employee trust in leader ( $R^2_{\text{change}} = .13$ ,  $F(5,408) = 214.48$ ,  $p < .001$ ), and 7% of the variance in employee job satisfaction ( $R^2_{\text{change}} = .07$ ,  $F(5,408) = 214.49$ ,  $p < .001$ ). The Promotion of a Healthy Workplace subscale was uniquely associated with all four outcomes. The Communication subscale was uniquely associated with strain, trust in leader, and stress. The Feedback and Support subscales were uniquely associated with trust in leader. The Involve and Develop subscale was uniquely associated with stress (see Table 8). Therefore, Hypothesis 4 was supported: The HWLB

Table 7

*Study 2: Regression Analyses Assessing Incremental Validity of the 5 HWLB Subscales in predicting Strain, Stress, Trust, and Job Satisfaction after controlling for the effects of Transformational Leadership (N = 412-421; Hypothesis 4)*

Predictor	Strain			Stress			Trust in Leader			Job Satisfaction		
	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$
<b>Step 1</b>			.17 <sup>c</sup>			.07 <sup>c</sup>			.72 <sup>c</sup>			.36 <sup>c</sup>
Transformational Leadership	-.42 <sup>c</sup>	.05		-.17 <sup>c</sup>	.03		1.26 <sup>c</sup>	.04		.63 <sup>c</sup>	.04	
<b>Step 2</b>			.07 <sup>c</sup>			.03 <sup>b</sup>			.07 <sup>c</sup>			.09 <sup>c</sup>
Transformational Leadership	.05	.10		-.05	.06		.69 <sup>c</sup>	.07		.06	.08	
Support	-.10	.09		-.08	.06		.41 <sup>c</sup>	.07		.16 <sup>a</sup>	.08	
Communication	-.16 <sup>a</sup>	.08		-.11 <sup>a</sup>	.05		.08	.06		.12	.07	
Feedback	-.07	.09		.02	.06		.14 <sup>a</sup>	.07		.00	.08	
Involve & Develop	-.04	.07		.12 <sup>a</sup>	.05		-.16 <sup>b</sup>	.06		.16 <sup>a</sup>	.06	
Promote a Healthy Workplace	-.24 <sup>b</sup>	.08		-.12 <sup>a</sup>	.05		.26 <sup>c</sup>	.06		.28 <sup>c</sup>	.07	

Note. <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$

Table 8

*Study 2: Regression Analyses Assessing Incremental Validity of the 5 HWLB Subscales in predicting Strain, Stress, Trust, and Job Satisfaction after controlling for the effects of Individualized Consideration (N = 410-418; Hypothesis 4)*

Predictor	Strain			Stress			Trust in Leader			Job Satisfaction		
	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$	$\beta$	SEB	$\Delta R^2$
<b>Step 1</b>			.19 <sup>c</sup>			.06 <sup>c</sup>			.63 <sup>c</sup>			.39 <sup>c</sup>
Individualized Consideration	-.45 <sup>c</sup>	.05		-.16 <sup>c</sup>	.03		1.23 <sup>c</sup>	.05		.67 <sup>c</sup>	.04	
<b>Step 2</b>			.06 <sup>c</sup>			.07 <sup>c</sup>			.13 <sup>c</sup>			.07 <sup>c</sup>
Individualized Consideration	-.11	.08		-.03	.06		.43 <sup>c</sup>	.08		.20 <sup>a</sup>	.08	
Support	-.08	.09		-.08	.06		.38 <sup>c</sup>	.08		.13	.08	
Communication	-.15 <sup>a</sup>	.08		-.13 <sup>a</sup>	.05		.17 <sup>b</sup>	.06		.12	.07	
Feedback	-.05	.09		.02	.06		.21 <sup>b</sup>	.07		-.02	.08	
Involve & Develop	-.03	.07		.12 <sup>a</sup>	.05		-.10	.06		.11	.06	
Promote a Healthy Workplace	-.20 <sup>a</sup>	.08		-.13 <sup>a</sup>	.05		.37 <sup>c</sup>	.06		.25 <sup>c</sup>	.07	

Note. <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$

subscales explained additional variance in employee outcomes (i.e., employee strain, stress, trust in leader, and job satisfaction) over and above the variance explained by transformational leadership and individualized consideration.

Follow-up redundancy analyses were conducted whereby the five HWLB subscales were entered in the first step, and individualized consideration was entered at the second step for all four of the dependent variables (i.e., strain, stress, trust in leader, and job satisfaction). When entered at the second step, individualized consideration did not account for additional variance in strain or stress. However, individualized consideration did account for an additional 1% of the variance in job satisfaction ( $R^2_{\text{change}} = .01$ ,  $F(6,411) = 58.22$ ,  $p < .05$ ) and an additional 2% of the variance in trust in leader ( $R^2_{\text{change}} = .02$ ,  $F(6,408) = 214.39$ ,  $p < .001$ ).

### **Study 2: Discussion**

The goal of Study 2 was to provide further evidence of reliability and construct and criterion-related validity for the HWLB scale. Specifically, I examined the factor structure and the internal reliability of the HWLB scale, as well as the relationships between the HWLB scale and theoretically relevant constructs. Findings from this study provide evidence that the HWLB scale, and each of its subscales, can be used to measure leadership behaviours that contribute to a healthy workplace and employee well-being. Moreover, in line with occupational stress models (i.e., Demerouti et al., 2001; Hobfoll, 1998; Hobfoll & Shirom, 2001; Siegrist, 2001), these findings provide evidence to support the argument that leaders behaviours may act as resources for employees in that the behaviours are negatively associated with stress and strain and positively associated with job satisfaction and trust in leader.

### **Factor Structure of the HWLB Scale**

I conducted both an exploratory Principal Components Analysis and a Confirmatory Factor Analysis (CFA) to examine the factor structure of the HWLB subscales (Hypothesis 1). Taking into account several factors (i.e., theoretical rationale, the variance explained by the PCA model, scree plot, and the factor loadings), I argue that overall the data suggested that the 5-factor model is the best fit. Although it should be noted that the factors were highly correlated, thus suggesting the potential utility of a 1-factor model; however, the five factors appear empirically distinct. The 5-factor structure also matched the theorized factor structure. That is, the factor structure included: Support Employees, Communicate Effectively, Provide Feedback Involve and Develop, and Promote a Psychologically Healthy Workplace. All of the items loaded as expected. However, two involve and develop items cross-loaded on the support dimension. It is possible that the overlap is due to the nature of the items. The two items focus on providing opportunities for professional development/growth, both of which might only be offered by a leader if they care about the employee and consequently their growth and development. Given the theoretical support for these items and their moderate primary loadings on their intended factor (.42 and .52), they were retained. The CFA further supported the 5-factor structure of the 20-item HWLB scale, with all items loading above .70 on their intended factors. Moreover, the resulting subscales were short and reliable with Cronbach's alphas above .89.

Given the theoretical overlap between the HWLB subscales and transformational leadership, a post-hoc exploratory Principal Components Analysis (PCA) was conducted whereby the HWLB subscales and the MLQ items were examined together. Not surprisingly, the factor analysis did not return a clean 9-factor structure. Interestingly, although Intellectual Stimulation and the Involve and Develop subscale cleanly loaded together, none of the other

subscales did. For instance, none of the MLQ items loaded with the Promote a Healthy Workplace subscale. Therefore, although there are some conceptual similarities between some of the subscales (e.g., Involve and Develop subscale and Intellectual Stimulation subscale), there are still some conceptual differences. Nonetheless, this post-hoc analysis should also be interpreted with caution given that the MLQ has not been known to factor conceptually on its own (e.g., Yammarino & Dubinsky, 1994). Therefore, although the HWLBs subscales cannot be completely differentiated from the MLQ, it does provide some support for validity of the HWLBs subscales given that some subscales can be differentiated.

### **Construct Validity of the HWLB Subscales**

The HWLB subscales were related to leaders' other leadership scores (i.e., global transformational leadership scale and individualized consideration; Hypothesis 2). As expected, the HWLBs were related to leaders' transformational leadership and individualized consideration, suggesting that leaders that display healthy workplace leadership behaviours also are likely to be transformational leaders and to take employees' individual needs into consideration. Therefore, Hypothesis 2 was supported: HWLB subscales were related to leaders' overall transformational leadership and to individualized consideration.

### **Criterion-Related Validity of the HWLB Subscales**

Overall, all the HWLB subscales were positively related to job satisfaction, and trust in the leader and four out of five of the HWLB subscales were negatively related to employee stress and strain (Hypothesis 3). However, the involve and development subscale was positively related to employee stress. An examination of the correlation matrix confirms that the Involve and Develop subscale and stress are negatively correlated, therefore it is possible that net suppression

might be occurring in the models due to the high correlation between the Involve and Develop subscale and transformational leadership and individualized consideration.

Moreover, given that the predictors are correlated (i.e.,  $r = .69$  to  $.79$ ), collinearity diagnostics were examined for evidence of multicollinearity. The variance indicator factor (VIF) ranged from 2.81 to 4.72 and the tolerance ranged from .21 to .36. Given that general guidelines suggest that a VIF greater than 10 is cause for concern (e.g., Myers, 1990) or an average VIF substantially greater than 1 may be biased (Bowerman & O'Connell, 1990), and tolerance below .1 indicates a problem (Menard, 1995), although the predictors do not quite meet the guidelines, there is potential for some multicollinearity and some unreliability of the model. At the same time, additional analyses indicated that removing the Involve and Develop subscale did not substantially change the amount of variance accounted for by the HWLBs in employee stress ( $R^2 = .11$ ,  $F(4,409) = 12.45$ ,  $p < .001$ ). Moreover, when running a regression with the Involve and Develop subscale alone, the Involve and Develop subscale was negatively related to employee stress.

Previous research has suggested that employee growth and development and employee involvement should be related to decreased employee stress (e.g., Grawitch et al., 2006). Conversely, it is possible that although growth and development opportunities and employee involvement might be seen as positive resources in moderation, it is possible that high levels of growth and development and employee involvement might be stressful given the additional demands placed on the employee. In particular, it is possible that by seeking employees' input on decisions and providing them with development opportunities, employees may be overwhelmed and consequently stressed by new opportunities (i.e., demands). Therefore, overall engaging in

healthy workplace leadership behaviours that promote a healthy workplace can significantly influence employee well-being and the leader-direct report relationships.

### **Incremental Validity of HWLB Subscales**

The HWLB subscales explained additional variance in employee outcomes (i.e., employee strain, job satisfaction, trust in leader, and stress) over and above the variance explained by transformational leadership and individualized consideration. Of the five HWLB subscales, the Promotion of Healthy Workplace, Communication, and Support subscales were uniquely associated with most of the outcomes. Moreover, when follow-up redundancy analyses were conducted whereby the HWLB subscales were entered in the first step and either transformational leadership or individualized consideration was entered at the second step, transformational leadership and individualized consideration were not uniquely associated with most of the outcomes. Therefore, although the HWLB subscales are conceptually similar and highly correlated with transformational leadership and individualized consideration, the HWLB subscales can predict employee outcomes over and above both transformational leadership and individualized consideration, thus demonstrating the uniqueness and utility of the new scale in adding unique prediction to employee outcomes over the pre-established measures. These results support that developing leaders' healthy workplace leadership behaviours may be necessary in improving employee well-being.

### **Limitations and Future Research**

This study is not without limitations. Cross-sectional data and common method bias were present in this study thus precluding any causal conclusions. Future studies should examine hypothesized relationships using longitudinal analyses. An additional limitation of the sample is that the data was collected via a convenience sample using a self-report online survey. Thus, it is



possible that there is selection bias among the participants that might not accurately represent the total population. However, an examination of the data suggests that the demographic data is well distributed. Moreover, although most participants completed the full survey, a portion of the participants did not complete the demographics section at the end of the survey thus reducing my ability to describe the sample fully. However, post-hoc analyses indicated that there were no significant differences between participants that completed the demographics section and the participants that did not. Nonetheless, future research might benefit from validating the study results across different samples.

Another limitation is the high correlations among the five factors of the HWLB Scale, resulting in possible multicollinearity (i.e., overinflated standard errors of the coefficients and consequently statistical insignificance when predictors should be significant) in the multiple regression analyses. However, given that the 5-factor regression results were significant across analyses, and the results were nearly identical when analyzed as an overall scale or as a 5-factor subscale, this might not be as large of a concern. Not to mention that multicollinearity is considered more of a concern if predictors correlate above .80 or .90. Beyond multicollinearity, other measures of leadership have also been noted to have high correlations among subscales (e.g., MLQ; Kelloway et al., 2000), yet is still widely utilized measure of transformational leadership.

### **Practical Implications**

An important implication for this study is the confirmation of the 5-factor model of healthy workplace leadership behaviours. Specifically, this model uniquely identified each of the healthy workplace leadership behaviours representing in the context of leadership. Although there are various models identifying components of a healthy workplaces (e.g., Grawitch et al.,

2006; Kelloway & Day, 2005) and models highlighting the components leaders can influence (e.g., Jimenez et al., 2017; Kelloway et al., 2017), there is a dearth of literature examining the specific leadership behaviours that contribute to a healthy workplace and employee well-being, despite researchers highlighting the essential role leaders can play (e.g., Day & Nielsen, 2017). Thus, this study addressed this gap by validating a scale that highlights the specific behaviours leaders can engage in to foster a psychologically healthy workplace (i.e., face validity, given that the scale items are specific and behaviourally based thus adding a practical user friendly level to the items that other scales do not necessarily have). Moreover, this study supports the utility of the HWLB subscales in predicting employee outcomes, beyond transformational leadership and individualized consideration. Based on these findings, organizations may want to consider developing leaders' healthy workplace leadership behaviours in order to foster a healthier workplace and employee well-being.

### **Conclusion**

Study 2 provided further evidence of the validity for the HWLB subscales. Within this study, there were four major findings. First, the HWLB scale clusters into 5 factors. Second, the HWLB subscales are similar to theoretically related leadership constructs (i.e., transformational leadership and individualized consideration). Third, the HWLB subscales are associated with employee-level outcomes (i.e., strain, stress, trust in leader, and job satisfaction). Fourth, HWLB subscales can predict employee outcomes over and above both pre-existing transformational leadership and individualized consideration measures, demonstrating the utility of this scale.

Building on Study 2, Study 3 incorporates longitudinal analyses with self-ratings and direct report ratings, examining the HWLB scale over time as well as causal effects following an intervention that focuses on developing five healthy workplace leadership behaviours. Therefore,

Study 3 was designed to develop and evaluate a training program designed to increase healthy workplace leadership behaviours.

### **Study 3: Program Development and Evaluation**

Given that leaders and organizations often feel challenged when it comes to creating a psychologically healthy workplace and the importance and effectiveness of a leaders' role as a resource for employees, the goal of Study 3 was to create a training program that could assist leaders and organizations in creating a healthier workplace and promote employee well-being. Specifically, Study 3 involved developing the training program 'Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership' and evaluating the program by examining leaders psychologically healthy workplace behaviours longitudinally (Time 1, Time 2, and Time 3), through direct reports and self-ratings, in order to assess the effectiveness of the program. The four levels of Kirkpatrick's (1996) model of training evaluation were used to assess the effectiveness of the training program. Specifically, Kirkpatrick suggested that training programs can be evaluated through (a) reactions to the training, (b) learning from training (knowledge), (c) behaviour change, and (d) results of the training.

#### **Level 1: Leaders' Reactions to Training**

To order to assess Kirkpatrick's (1996) Level 1- Reactions to training (i.e., feelings about the training), I assessed leaders' reactions (e.g., satisfaction with the training, usefulness of the training) at the end of the training program.

**Research Goal 1:** To understand the leaders' reactions to the LHW Program, in terms of their satisfaction, perceived utility, and perceived changes as a result of the program.

#### **Level 2: Learning from Training (Knowledge about Leadership Behaviours)**

Kirkpatrick's (1996) Level 2 – Learning (i.e., knowledge) is a way to assess participants acquired knowledge, skills, and their commitment to the training. Therefore, I expected that the training would be effective in increasing leaders' knowledge of healthy workplace leadership behaviours. Therefore, in order to assess whether leaders were able to improve their knowledge of effective leadership behaviours as a result of the training (i.e., Kirkpatrick's Level 2- Learning from training), I hypothesized:

**Hypothesis 1:** There is a significant interaction in leaders' knowledge of leadership behaviours that can contribute to psychologically healthy workplace in that:

Group 1 (Time 1 Training) reports an increase in knowledge about leadership behaviours that contribute to a psychologically healthy workplace from Time 1 to Time 2, whereas Group 2 (Waitlist Time 2 Training group) does not change from Time 1 to Time 2 but increases from Time 2 to Time 3. (see Figure 4).

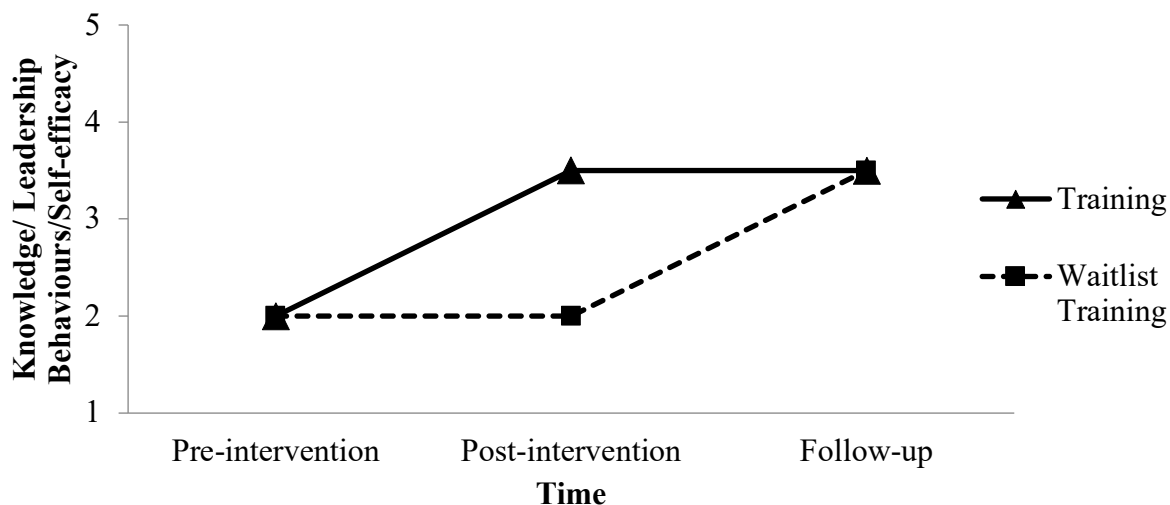


Figure 4. Study 3: Hypothesized plotted univariate effects (cell means) for the Time 1 Training group and Waitlist Time 2 Training group (Hypothesis 1, 2, 3)

### Level 3: Behaviour Change (Healthy Workplace Leadership Behaviours)

The key goal of the training and this study was to examine the effectiveness of the LHW program to improve leaders' leadership behaviours. Given that participants in the Leading Healthy Workplaces program were encouraged to implement the training that they learned and had seven weeks of phone-based coaching sessions, following the initial workshop, it was expected that participants in the training program would increase their leadership behaviours that contribute to a healthy workplace. Therefore, in order to assess Kirkpatrick's (1996) Level 3, behaviour change component, I hypothesized:

***Hypothesis 2:*** There is a significant interaction in leaders self-reported leadership behaviours (i.e., the HWLB subscales) in that:

Group 1 (Time 1 Training group) reports an increase in their leadership behaviours that contribute to healthy workplaces from Time 1 to Time 2, whereas Group 2 (Waitlist Time 2 Training group) does not change from Time 1 to Time 2 but increases from Time 2 to Time 3 (see Figure 4).

In order to further understand the mechanisms that contribute to leaders' behaviour change, and consequently training effectiveness, I drew on the theory of planned behaviour (Ajzen, 1985; 1991). In accordance with the theory of planned behaviour, whether a leader will use and apply the material (e.g., communicating and promoting psychologically healthy workplace practices) that they learned in the training depends on behavioural intentions, given that intentions directly predict behaviour. Behavioural intentions to perform the behaviour (i.e., promoting a psychologically healthy workplace) can be increased through increasing one's positive attitudes towards the behaviour and the outcomes associated with such behaviour (Ajken, 1985; 1991), which is anticipated to result from the training. Similarly, in addition to behavioural intentions, self-efficacy, or one's belief in their ability to perform the behaviour

(Bandura, 1997) has also been shown to be related to leadership intervention effectiveness (e.g., Mullen & Kelloway, 2009). Therefore, I hypothesize:

***Hypothesis 3:*** There is a significant interaction in leaders' self-efficacy in that:

Group 1 (Time 1 Training group) reports an increase in their self-efficacy from Time 1 to Time 2, whereas Group 2 (Waitlist Time 2 Training group) does not change from Time 1 to Time 2 but increases from Time 2 to Time 3 (see Figure 4).

In addition to leaders providing ratings of their own behaviours, I assessed the extent to which direct reports perceived that their leaders increased their healthy workplace leadership behaviours.

***Hypothesis 4:*** Direct reports report that their leaders display increased scores on the HWLB subscales from pre-leader training to post-leader training.

That is, as a result of the Leading Healthy Workplaces program direct reports perceptions of their leaders' behaviours that contribute to a healthy workplace would increase from pre-leader training to post-leader training.

### **Process Analyses**

Given that the knowledge gained from the training program would influence whether an individual applies the material learned and because motivation and readiness for change influences transfer of training (see Baldwin, Ford, & Blume, 2009; and Blume, Ford, Baldwin, & Huang, 2010 for reviews), I hypothesized:

***Hypothesis 5:*** Leaders knowledge (post-training) is associated with the HWLB subscales (post-training).

**Hypothesis 6:** Leaders level of (a) motivation to learn (Time 1) and (b) readiness for change (Time 1) interacts with the training to increase their healthy workplace leader behaviours (i.e., pre-training, post-training).

That is, leaders who are high on motivation to learn and have a high readiness for change will show greater increases in the HWLB subscales from pre-training to post-training in comparison to leaders who are low in motivation to learn and low in readiness for change.

#### **Level 4: Results of Training (Well-Being of Leaders and Direct Reports)**

Furthermore, in order to understand better whether the LHW Program affects leader and employee well-being outcomes (i.e., Kirkpatrick's Level 4 – Results from training), I examined employee and leader outcomes in terms of leader and direct report well-being.

Given that the components of the Leading Healthy Workplaces program incorporated both psychologically healthy workplace and leadership components, both of which have been shown to be related to positive employee well-being (e.g., stress, strain) and positive relationships with leaders (e.g., trust in leader, perceived supervisor support; Arnold et al., 2007; Carmeli, Sheaffer, Binyamin, Reiter-Palmon, & Shimoni, 2014; Grawitch et al., 2006; 2007; Kelloway & Barling, 2010), I hypothesized:

**Hypothesis 7:** There is a significant interaction in leaders psychological well-being (i.e., stress and strain), in that:

Group 1 (Time 1 Training group) will report decreases in stress and strain from Time 1 to Time 2, whereas Group 2 (Waitlist Time 2 Training group) will not change from Time 1 to Time 2 but will decrease from Time 2 to Time 3 (see Figure 5).

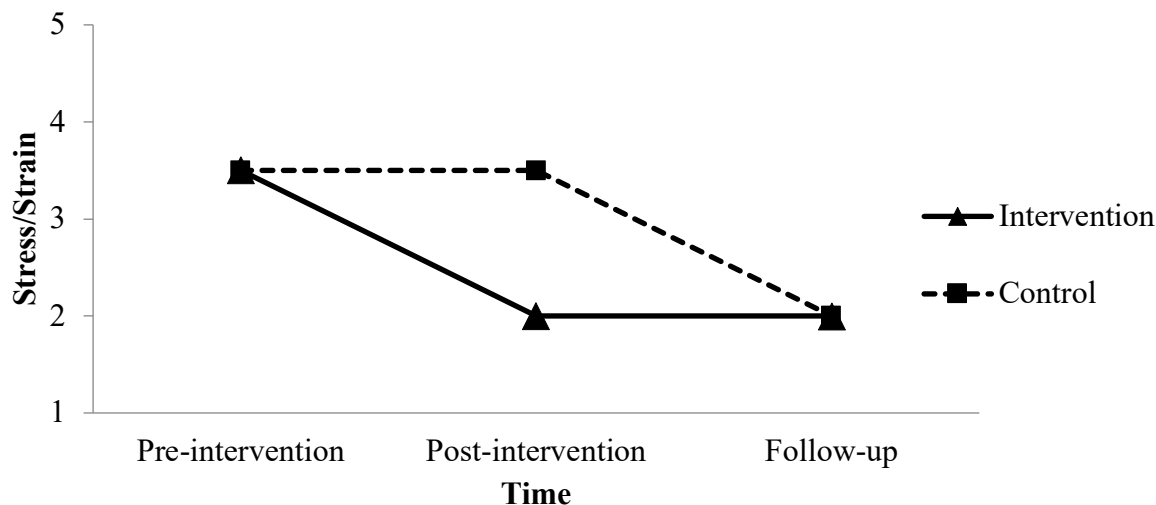


Figure 5. Study 3: Hypothesized plotted univariate effects (cell means) for stress for the Time 1 Training group and Waitlist Time 2 Training group (Hypothesis 7)

**Hypothesis 8:** Direct reports report increased scores in (a) trust in leader, (b) psychological safety, (c) perceived supervisor support, (d) perceptions of a healthy workplaces, and decreased in (e) stress and (f) strain than from pre-leader training to post-leader training.

That is, as a result of the Leading Healthy Workplaces program, direct reports will report increases in trust in leader, psychological safety, perceived supervisor support, perceptions of a healthy workplace, and a decrease in stress, and strain from pre-leader training to post-leader training.

### Leading Healthy Workplaces Program Overview

The goal of the Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership program was to integrate knowledge of psychologically healthy workplaces and leadership behaviours that contribute to a healthy workplace. The format of the training program encompassed a kick-off half-day workshop to review the basics of healthy workplace leadership behaviours (i.e., education) and to help leaders identify and set their individual goals for the program. This workshop was followed by seven weeks of alternating



phone-based coaching sessions and workbook sessions. The half-day workshop format was used because it has been demonstrated to be an effective method to train leaders (e.g., Barling, et al., 1996; Dimoff, Kelloway, & Burnstein, 2016; Kelloway, Barling, & Helleur, 2000; Lacerenza et al., 2017; Mullen & Kelloway, 2009; Tsutsumi et al., 2005). Moreover, this group-based component of the program acted as a kick-off event to the new program and assisted in increasing buy-in and commitment by engaging leaders as a group, which is a critical first step in new organizational wellness programs (Day & Penney, 2017). Group-level interventions have been shown to be an effective intervention format to foster behaviour change (e.g., Leiter, Laschinger, Day, & Gilin-Oore, 2011). Additionally, this method is an appealing and a less expensive training methodology than multi-day training sessions from an organizational and leadership perspective.

Despite the efficacy of a workshop format, traditional group classroom training may not be a sufficient leadership development training component by itself, and other training components should complement group classroom training in order to increase the transfer of training (Day, 2001; Hernez-Broome & Hughes, 2004). In particular, Hernez-Broome & Hughes (2004) suggested that leadership training components are more effective when they are incorporated into daily work, such as 360-degree feedback, coaching, and mentoring components. Likewise, Lacerenza et al.'s (2017) meta-analysis of leadership training effectiveness indicated that transfer of training and results were greater when the training was spaced out over several sessions as opposed to all at once. Similar to group training formats, phone-based coaching (e.g., Day, Francis, Stevens, Hurrell, & McGrath, 2014; Hartling, 2018) and training programs that incorporate goal-setting components (e.g., Barling et al., 1996; Day et al., 2014) have been effective methods to train employees, leaders, and increase transfer of

training (see Taylor, Russ-Eft, & Chan, 2005 for meta-analytic review), possibly because these forms of training and goals become embedded in individuals daily work, which is considered an important component of leadership training (Hernez-Broome & Hughes, 2004). Moreover, leadership programs that incorporate a coaching component can incorporate personalized one-on-one learning (Day, 2001) as well as increase accountability and support when working towards goals and applying program material on the job (Ting & Hart, 2004). Therefore, this training program consisted of the half-day in-person training format (as an introduction to the program) and individual follow-up phone-based coaching sessions as a comprehensive training program that incorporates the benefits of both group-based and individual-based leadership development training.

The follow-up biweekly phone-based sessions were used in order to allow the researcher to provide the leaders with feedback, increase transfer of training, hold the leaders accountable, allow leaders the opportunity to discuss barriers they were facing while trying to implement the training, and allow for follow-up on goals. Likewise, Lacerenza et al.'s (2017) meta-analysis on leadership training indicated that leadership training is significantly more effective when feedback is incorporated. During the half-day workshop, the researcher educated leaders on psychologically healthy workplaces, the importance of promoting psychologically healthy workplaces, and behaviours that contribute to a healthy workplace, how psychologically healthy workplaces and leadership are related, and goal setting, as an introduction to the program. Given that goals drive all human behaviour (Mitchell & Daniels, 2000), and because it has been concluded that goals are an effective method to increase the transfer of training (Taylor et al., 2005), goals were an essential part of the training program in order to encourage participants to implement the training.

### Study 3: Methods

#### Participants

**Leader Participants.** Employed leaders were invited through organizational contacts to take part in the Leading Healthy Workplaces training program. Specifically, organizational contacts were asked to send a recruitment script to leaders describing the study. Overall, 28 leaders from the Time 1 Training group and 40 leaders from the Waitlist Time 2 Training group responded to surveys at all three-time points.

I recruited leaders through organizational contacts. These contacts resulted in a list of 111 leaders as potential participants in the program. All 111 leaders completed the first survey. Of these 111 leaders, 94 leaders agreed to participate in the program. Of these 94 leaders, 72 leaders completed the entire program (i.e., workshop and 7 weeks of coaching), with 68 leaders (47 women and 21 men) completing surveys across the three-time points, rendering a response rate of 94% for the surveys from leaders that completed the program. Leaders were from 8 organizations across Canada (e.g., health care, technology, non-for profit) with an average age of 46.06 years ( $SD = 8.62$  years), with an age range from 23 to 62 years of age. Leaders ranged from front-line leaders to C-suite level leaders. Sixty-nine percent of leaders had been in their current leadership role for more than two years.

**Direct Report Participants.** Two-hundred and forty-two direct reports (196 women and 43 men, 3 prefer to self-describe) completed surveys rating their leaders prior to the leaders starting the training and immediately after their leaders completed the training. Direct reports had an average age of 43.94 ( $SD = 11.75$  years), and an average tenure in their current role of 4.91 years ( $SD = 5.66$  years). Eighty-six percent of direct reports were Caucasian, and 97% of direct reports had at least some university/college education.

## Procedure

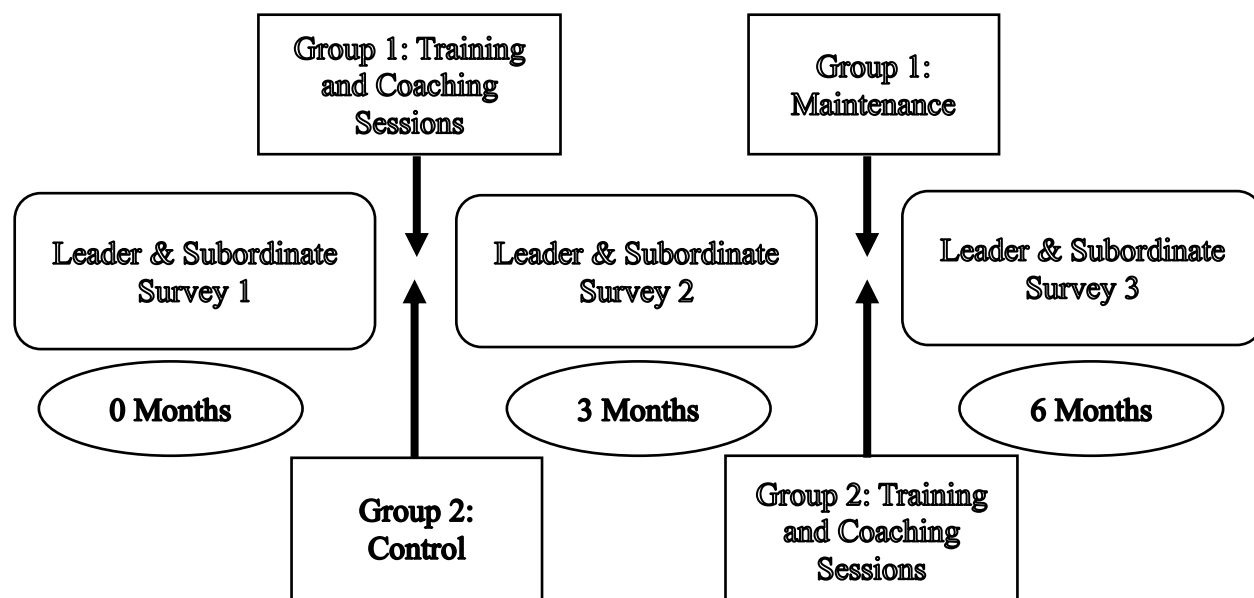
Leaders were recruited to participate in the Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership training program. Interested leaders were assigned to the Time 1 Training group or Waitlist Time 2 Training group. Full randomization across all participants and organizations was not possible because of individual, organizational, and geographical constraints (e.g., participants were from 7 provinces across Canada; participants had commitments that limited their availability). However, randomization was used for one Eastern organization with 28 initially interested leaders.

Within each group, multiple workshops (3 – 5) were offered in order to keep group sizes small (i.e., 10 to 15 leaders) and accommodate various geographic locations. The content of the training encompassed the five content domains of leadership behaviours that contribute to a healthy workplace that resulted from Study 1. Subject matter experts with expertise in psychologically healthy workplaces and leadership were asked to review the program content and provide feedback prior to training (e.g., usability, comprehension; Crocker & Algina, 1986; Hinkin, 1998).

A longitudinal design with a waitlist control training group was used. All leaders were asked to complete the same survey over three-time points. The Time 1 Training group participated in the workshop and subsequent coaching approximately 2-3 weeks after completing the first survey. The Time 2 Waitlist Training group participated in the workshop after the Time 1 Training group concluded the training and phone-based coaching and after completing the second survey. In order to further assess training effectiveness, leaders were asked to send surveys to all of their direct reports before they participated in the workshop and after they completed the 7 weeks of training. In these surveys, direct reports reported on their leaders'

healthy workplace leadership behaviours and their individual level-outcomes (e.g., strain). The direct report data were matched to their supervisors' data by asking the direct reports the name of their leader and their leaders' ID code (supplied by leaders to their subordinates). Moreover, direct report surveys were matched over time using self-generated participant codes (i.e., the first letter of the city they were born in, the first letter of the month they were born in, the last two digits of their year of birth).

**Workshop and Training Program.** Leaders participated in the half-day workshop, 7 weeks of coaching and completed three online surveys over a 6-month period (0 months, 3 months, 6 months; see Figure 6). Although there does not appear to be a standard for measurement time points, similar leadership intervention studies (e.g., Barling et al., 1996; Kelloway et al., 2000; Hartling, 2018; Mullen & Kelloway, 2009) have used comparable intervals. The half-day workshop allowed for a lecture, the discussion of case studies, role plays, and goal setting to develop leader knowledge and behaviours. The phone-based sessions following the half-day training were used to increase transfer of training, allow the researcher to ensure that participants set goals that are specific, measurable, appropriate, relevant, and timely (SMART) as well as challenging and achievable (Locke & Latham, 1990) in order to improve their healthy workplace leadership behaviours. Moreover, the coaching sessions allowed leaders the opportunity to discuss any challenges they had faced when trying to implement the material that they learned.



*Figure 6.* Study 3: Timeline of the Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership Training program for the Time 1 Training group and Waitlist Time 2 Training group.

### Leader Measures

Leaders completed three surveys over a 6-month period (Time 1; Time 2; and Time 3). Leaders in Training group 1 completed a survey prior to training, immediately after training, and 3 months after completing training. Leaders in the Time 2 Training (i.e. waitlist control training) completed a survey 3 month prior to training, immediately before training, and immediately after training. Demographics were measured at Time 1, and all of the other measures were completed across the three surveys.

**Demographics.** At Time 1, leaders provided information on their age, gender, education, tenure, industry, leadership tenure, and the number of direct reports they supervise. Demographic information was used to describe the sample.

**Healthy Workplace Leadership Behaviours.** Leadership behaviours that contribute to a psychologically healthy workplace were assessed with the newly developed scale from Study 1

and Study 2. Leaders rated the degree to which they agreed with each item (e.g., “I actively supported efforts to promote physical and psychological health at work”) on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha for the 4-item subscales ranged from  $\alpha=.68$  to  $\alpha=.86$  across the three-time points.

**Leader Self-efficacy.** Leader self-efficacy was measured with a modified version of the 7-item General Self-Efficacy scale (Chen, Gully, & Eden, 2001). The items for this study were modified to reflect leadership behaviours that contribute to a psychologically healthy workplace (e.g., “I am clear about my values and practice what I preach”). Leaders rated their confidence in each item from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha ranged from  $\alpha =.72$  to  $\alpha =.87$  across the three time points.

**Leader Stress.** Stress was assessed using the 7-item Stress subscale of the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), which measures areas such as nervousness, tension, and difficulty relaxing. Leaders rated the extent to which each item applied to them over the past week (e.g., “I found it difficult to relax”), using a 4-point scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Cronbach’s alpha ranged from  $\alpha =.86$  to  $\alpha =.89$  across three-time points.

**Strain.** Strain was assessed using the 12-item General Health Questionnaire (GHQ; Goldberg, 1972). Leaders rated the extent to which they agreed with each item (e.g., Have you been feeling unhappy and/or depressed?) using a 7-point scale from 1 (*not at all*) to 7 (*all the time*). Higher scores on the GHQ are indicative of higher levels of strain or poor psychological well-being. Cronbach’s alpha ranged from  $\alpha =.87$  to  $\alpha =.91$  across three-time points.

**Leader Motivation to Learn.** Motivation to learn was assessed with 2 items modified from the Motivation to Learn scale (Noe & Schmitt, 1986). Leaders rated the extent to which

they agree with each item (e.g., I am willing to exert considerable effort to improve my skills throughout this program) using a 5-point scale from 1 (*strongly disagree*) to (*strongly agree*).

Correlations were  $r = .62$  and  $r = .68$ .

**Leader Readiness for Change.** Readiness for change was assessed with a 4-item modified version of the Readiness Change Questionnaire (Rollnick, Heather, Gold, & Hall 1992). The items for the study were modified to reflect readiness for leadership development (e.g., “I like my leadership style, but sometimes I could improve”). Leaders rated their agreement with items from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha ranged from  $\alpha = .67$  to  $\alpha = .69$  across the three time points.

**Leader Knowledge.** Leaders completed a knowledge test at each of the three measurement points. The knowledge measure was an open-ended question that asked leaders to identify the types of things they could do on a daily basis to promote a psychologically healthy workplace and employee well-being. Knowledge was subsequently coded dichotomously as a Healthy Workplace Leadership Behaviour or not.

### **Direct Report Measures**

Direct reports completed a survey at two times: They completed the first survey before their leader started the LHW training (i.e., pre-training), and they completed the same survey a second time 2-3 weeks after their leader completed the training (i.e., post-training). All of the measures were completed at both times, with the exception of the demographics, which were measured only at pre-training.

**Demographics.** Direct reports provided information on their age, gender, education, tenure, and industry. Demographic information was used to describe the sample.



**Healthy Workplace Leadership Behaviours.** Direct reports assessed their leaders' behaviours that contribute to a psychologically healthy workplace using the newly developed scale. Direct reports rated the degree to which they agreed with each item (e.g., "My leader actively supported efforts to promote physical and psychological health at work") on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for the subscales ranged from  $\alpha = .92$  to  $\alpha = .96$  across pre-training and post-training.

**Trust in Leader.** Trust in the leader was assessed with 4-items modified from Cook and Wall (1980) and Podsakoff et al.'s (1990) Trust in Leader measures. The scale asked direct reports to rate their agreement with each item (e.g., I think my leader is trustworthy) on a 5-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was  $\alpha = .93$  (pre-training) and  $\alpha = .94$  (post-training).

**Perceived Supervisor Support.** Perceived supervisor support was assessed with 3-items modified from the Perceived Supervisor Support scale (Eisenberger et al., 2002). The scale asked direct reports to rate their agreement with each item (e.g., "Help is available from my leader when I have a problem") on a 5-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was  $\alpha = .83$  (pre-training) and  $\alpha = .85$  (post-training).

**Direct Report Stress.** Stress was assessed using the 7-item Stress subscale of the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), which measures areas such as nervousness, tension, and difficulty relaxing. Direct reports rated the extent to which each item applied to them over the past week (e.g., "I found it difficult to relax"), using a 4-point scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Cronbach's alpha was  $\alpha = .86$  (pre-training) and  $\alpha = .89$  (post-training).

**Direct Report Strain.** Strain was assessed using the 12-item General Health Questionnaire (GHQ; Goldberg, 1972). Direct reports rated the extent to which they agreed with each item (e.g., Have you been feeling unhappy and/or depressed?) using a 7-point scale from 1 (*not at all*) to 7 (*all the time*). Higher scores on the GHQ are indicative of higher levels of strain or poor psychological well-being. Cronbach's alpha was  $\alpha = .88$  (pre-training) and  $\alpha = .89$  (post-training).

**Psychological Safety.** Psychological safety was assessed with 4-items modified from the Team Psychological Safety scale (Edmondson, 1999). The scale asked direct reports to rate their agreement with each item (e.g., "I am able to bring up problems and tough issues to my leader") on a 5-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was  $\alpha = .86$  (pre-training) and  $\alpha = .89$  (post-training).

**Healthy Workplaces.** Perception of a healthy workplace was assessed with a 3-item measure developed for this study. The scale asked direct reports to rate their agreement with each item (e.g., "My organization is a psychologically healthy workplace") on a 5-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was  $\alpha = .89$  (pre-training) and  $\alpha = .89$  (post-training).

### Study 3: Results

Data were screened for outliers, data entry errors, and violations of assumptions. The mean and standard deviations for Time 1, Time 2, and Time 3 leader variables are presented in Table 9. The mean and standard deviations for pre-leader training and post-leader training direct report variables are presented in Table 10. There were no multivariate outliers at the leader or the direct report levels. Following Kirkpatrick's (1996) model of training evaluation, the Leading

Healthy Workplaces program was evaluated by examining multiple levels: (a) leaders' reactions to the training, (b) learning from training (knowledge), (c) behaviour change (HWLBs), and (d) results of the training (well-being of leaders and direct reports).

### **Multilevel Modeling**

Multilevel modeling (MLM) was used for the primary analyses (i.e., Hypotheses 1, 2, 3, 7). In the current study, the repeated measurement occasions over time (level 1; within persons), were nested within leaders (level 2; between persons). Although nesting the data by organization was also important, because it would allow for controlling for a higher-level context (i.e., organization) which can influence individual (i.e., leaders) behaviours (Bliese & Jex, 2002), the model would not converge as a 3-level design, suggesting potential redundant parameters. Therefore, the multilevel analyses were conducted as a 2-level design time (level 1; within persons) nested within leaders (level 2; between persons). In order to assess the effect of the organization, in a secondary analysis, leaders were nested within organization and time was used as a predictor.

Multilevel analyses were first conducted with a null model and then on random intercept models (Heck, Thomas, & Tabata, 2010). The estimate of fit was examined using the -2 log-likelihood (-2LL). The -2LL values decreased from the null model to the random intercept model for every variable except knowledge. Thus, the random intercepts model was a better fit to the data for all variables except knowledge (see Table 11). For analyses, leader ID was specified as the subject variables. For the secondary analyses, when organization was specified as the subject variable, time was used as a predictor.

**Level 1: Leaders' Reactions to Training**

In order to examine Kirkpatrick's (1996) Level 1-Reactions to training (i.e., satisfaction with the training, perceived utility, etc.), I examined leaders' program evaluation data that they completed anonymously at the end of the program (i.e., research goal 1). In general, the leaders were very positive about the program, with over 95% saying that they 'somewhat agreed' or 'strongly agreed' that their coaches were helpful, and the program was beneficial and credible (see Table 12). Moreover, 93% of leaders indicated that they met their goals, and 98.7% of leaders indicated they had made positive changes at work because of the program. Finally, 90% of the leaders indicated that they would recommend the program to a colleague.

**Level 2: Learning from Training (Knowledge about Leadership Behaviours)**

In order to examine Kirkpatrick's (1996) Level-2 – Learning from training, I examined whether leaders' knowledge of healthy leadership behaviours increased over the course of the LHW program (i.e., Hypothesis 1), I conducted a multilevel analysis. For knowledge, time was not a significant predictor,  $F(1, 143) = 2.16, p > .05$ , nor was there a group significant predictor,  $F(1, 143) = 2.16, p > .05$ , indicating that leaders' knowledge did not differ over time and that groups did not differ over time. There was also not a significant group X time interaction  $F(1, 149) = .002, p > .05$ . That is, leaders' knowledge did not significantly increase over time after receiving training. Therefore, Hypothesis 1 was not supported.

**Level 3: Behaviour Change (Healthy Workplace Leadership Behaviours)****Leaders' Perceptions of Healthy Workplace Leadership Behaviours**

In order to examine the key goal of the training (i.e., Kirkpatrick's [1996] Level 3 – Behaviour Change component), the effectiveness of the LHW program in improving leaders'

Table 9  
*Study 3: Leader Variable Descriptive Statistics, Intercorrelations, and Reliabilities at Time 1, Time 2, and Time 3 (N = 68-111)*

<i>M</i>	45.23	1.73	1.66	3.96	4.31	3.65	4.15	3.95	3.73	3.95	2.04	3.21	4.50	4.33	4.04	4.26	3.85
<i>SD</i>	8.29	.49	.50	.42	.55	.51	.49	.55	.70	.53	.62	.69	.52	.48	.42	.52	.57
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age	-																
2. Gender	.10	-															
3. Group	.01	.15	-														
<b>Time 1</b>																	
4. HWLB Scale	.21 <sup>a</sup>	-.01	-.07	<b>(.89)</b>													
5. Support	.17	.20 <sup>a</sup>	-.06	.73 <sup>c</sup>	<b>(.83)</b>												
6. Communicate	.19 <sup>a</sup>	-.11	.06	.65 <sup>c</sup>	.33 <sup>c</sup>	<b>(.67)</b>											
7. Feedback	.23 <sup>a</sup>	-.11	-.05	.76 <sup>c</sup>	.48 <sup>c</sup>	.44 <sup>c</sup>	<b>(.72)</b>										
8. Inv. Develop	.11	-.13	-.19 <sup>a</sup>	.74 <sup>c</sup>	.40 <sup>c</sup>	.34 <sup>c</sup>	.46 <sup>c</sup>	<b>(.78)</b>									
9. Promote HW	.14	.06	-.01	.81 <sup>c</sup>	.50 <sup>c</sup>	.37 <sup>c</sup>	.50 <sup>c</sup>	.50 <sup>c</sup>	<b>(.83)</b>								
10. Self-Efficacy	.23 <sup>a</sup>	-.13	-.05	.71 <sup>c</sup>	.54 <sup>c</sup>	.55 <sup>c</sup>	.56 <sup>c</sup>	.50 <sup>c</sup>	.50 <sup>c</sup>	<b>(.82)</b>							
11. Stress	-.13	.08	.07	-.28 <sup>b</sup>	-.13	-.34 <sup>c</sup>	-.09	-.14	-.29 <sup>b</sup>	-.27 <sup>b</sup>	<b>(.86)</b>						
12. Strain	-.18	.15	.15	-.45 <sup>c</sup>	-.25 <sup>b</sup>	-.40 <sup>c</sup>	-.26 <sup>b</sup>	-.38 <sup>c</sup>	-.34 <sup>c</sup>	-.47 <sup>c</sup>	.67 <sup>c</sup>	<b>(.87)</b>					
13. Learn Motivation	.11	.14	.03	.23 <sup>a</sup>	.30 <sup>b</sup>	.00	.19	.15	.19	.21 <sup>a</sup>	.03	-.08	<b>(.62)</b>				
14. Readiness	-.05	-.07	-.09	.32 <sup>b</sup>	.38 <sup>c</sup>	.07	.34 <sup>b</sup>	.16	.21 <sup>a</sup>	.34 <sup>b</sup>	.02	-.03	.52 <sup>c</sup>	<b>(.67)</b>			
<b>Time 2</b>																	
15. HWLB Scale	.21	-.04	-.33 <sup>b</sup>	.71 <sup>c</sup>	.51 <sup>c</sup>	.45 <sup>c</sup>	.47 <sup>c</sup>	.57 <sup>c</sup>	.53 <sup>c</sup>	.58 <sup>c</sup>	-.26 <sup>a</sup>	-.34 <sup>b</sup>	.06	.27 <sup>a</sup>	<b>(.92)</b>		
16. Support	.18	-.07	-.27 <sup>b</sup>	.63 <sup>c</sup>	.64 <sup>c</sup>	.29 <sup>b</sup>	.42 <sup>c</sup>	.47 <sup>c</sup>	.40 <sup>c</sup>	.52 <sup>c</sup>	-.17	-.15	.10	.29 <sup>b</sup>	.75 <sup>c</sup>	<b>(.85)</b>	
17. Communicate	.13	-.03	-.26 <sup>a</sup>	.45 <sup>c</sup>	.25 <sup>a</sup>	.41 <sup>c</sup>	.23 <sup>a</sup>	.40 <sup>c</sup>	.32 <sup>b</sup>	.45 <sup>c</sup>	-.26 <sup>a</sup>	-.26 <sup>a</sup>	.03	.19	.79 <sup>c</sup>	.45 <sup>c</sup>	<b>(.84)</b>
18. Feedback	.27 <sup>a</sup>	-.11	-.22 <sup>a</sup>	.68 <sup>c</sup>	.47 <sup>c</sup>	.40 <sup>c</sup>	.67 <sup>c</sup>	.50 <sup>c</sup>	.40 <sup>c</sup>	.56 <sup>c</sup>	-.23 <sup>a</sup>	-.32 <sup>b</sup>	.16	.29 <sup>b</sup>	.77 <sup>c</sup>	.50 <sup>c</sup>	.52 <sup>c</sup>
19. Inv. Develop	.14	.02	-.23 <sup>a</sup>	.47 <sup>c</sup>	.34 <sup>b</sup>	.23 <sup>a</sup>	.31 <sup>b</sup>	.51 <sup>c</sup>	.29 <sup>b</sup>	.40 <sup>c</sup>	-.08	-.30 <sup>b</sup>	.09	.15	.81 <sup>c</sup>	.55 <sup>c</sup>	.51 <sup>c</sup>
20. Promote HW	.11	.02	-.30 <sup>b</sup>	.58 <sup>c</sup>	.33 <sup>b</sup>	.38 <sup>a</sup>	.28 <sup>b</sup>	.36 <sup>b</sup>	.64 <sup>c</sup>	.35 <sup>b</sup>	-.27 <sup>a</sup>	-.30 <sup>b</sup>	-.12	.16	.78 <sup>c</sup>	.47 <sup>c</sup>	.55 <sup>c</sup>
21. Self-Efficacy	.25 <sup>a</sup>	-.06	-.19	.52 <sup>c</sup>	.47 <sup>c</sup>	.42 <sup>c</sup>	.35 <sup>b</sup>	.35 <sup>b</sup>	.31 <sup>b</sup>	.64 <sup>c</sup>	-.32 <sup>b</sup>	-.41 <sup>c</sup>	-.02	.15	.69 <sup>c</sup>	.60 <sup>c</sup>	.56 <sup>c</sup>
22. Stress	-.02	-.07	.08	-.28 <sup>b</sup>	-.30 <sup>b</sup>	-.37 <sup>b</sup>	-.02	-.19	-.16	-.37 <sup>c</sup>	.66 <sup>c</sup>	.66 <sup>c</sup>	-.07	-.07	-.29 <sup>b</sup>	-.20	-.34 <sup>b</sup>
23. Strain	-.04	.05	.24 <sup>a</sup>	-.36 <sup>b</sup>	-.25 <sup>a</sup>	-.29 <sup>a</sup>	-.17	-.33 <sup>b</sup>	-.26 <sup>a</sup>	-.51 <sup>c</sup>	.56 <sup>c</sup>	.77 <sup>c</sup>	-.05	-.09	-.44 <sup>c</sup>	-.27 <sup>a</sup>	-.34 <sup>b</sup>
24. Learn Motivation	.05	.20	-.04	.18	.23 <sup>a</sup>	-.05	.12	.10	.22	.12	-.02	-.14	.61 <sup>c</sup>	.29 <sup>b</sup>	.16	.07	.13

*Continued on next page*

Table 9 (continued)

<i>M</i>	45.23	1.73	1.66	3.96	4.31	3.65	4.15	3.95	3.73	3.95	2.04	3.21	4.50	4.33	4.04	4.26	3.85
<i>SD</i>	8.29	.49	.50	.42	.55	.51	.49	.55	.70	.53	.62	.69	.52	.48	.42	.52	.57
<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
25. Readiness	.07	-.03	-.17	.30 <sup>b</sup>	.33 <sup>b</sup>	-.04	.28 <sup>b</sup>	.22 <sup>a</sup>	.24 <sup>a</sup>	.24 <sup>a</sup>	-.01	-.11	.43 <sup>c</sup>	.50 <sup>c</sup>	.37 <sup>c</sup>	.30	.18
<b>Time 3</b>																	
26. HWLB Scale	.16	.05	-.17	.49 <sup>c</sup>	.33 <sup>b</sup>	.33 <sup>b</sup>	.25 <sup>a</sup>	.51 <sup>c</sup>	.41 <sup>c</sup>	.24 <sup>a</sup>	-.07	-.19	.10	.02	.55 <sup>c</sup>	.46 <sup>c</sup>	.46 <sup>c</sup>
27 Support	.08	.03	-.12	.41 <sup>c</sup>	.33 <sup>b</sup>	.33 <sup>b</sup>	.18	.35 <sup>b</sup>	.31 <sup>b</sup>	.27 <sup>a</sup>	-.15	-.23	.12	-.01	.51 <sup>c</sup>	.49 <sup>c</sup>	.45 <sup>c</sup>
28. Communicate	.04	-.10	-.06	.38 <sup>b</sup>	.12	.41 <sup>c</sup>	.20	.44 <sup>c</sup>	.26 <sup>a</sup>	.26 <sup>a</sup>	-.12	-.25 <sup>a</sup>	.04	-.04	.37 <sup>b</sup>	.28 <sup>a</sup>	.39 <sup>b</sup>
29. Feedback	.16	.00	-.17	.50 <sup>c</sup>	.29 <sup>a</sup>	.29 <sup>a</sup>	.37 <sup>b</sup>	.53 <sup>c</sup>	.39 <sup>b</sup>	.30 <sup>b</sup>	.02	-.12	.02	-.02	.52 <sup>b</sup>	.39 <sup>b</sup>	.30 <sup>b</sup>
30. Inv. Develop	.27 <sup>a</sup>	.12	-.17	.34 <sup>b</sup>	.28 <sup>a</sup>	.12	.22	.40 <sup>c</sup>	.25 <sup>a</sup>	.19	.00	-.09	.27 <sup>a</sup>	.11	.32 <sup>b</sup>	.26 <sup>a</sup>	.21
31. Promote HW	.08	.13	-.13	.25 <sup>a</sup>	.22	.11	-.01	.23 <sup>a</sup>	.34 <sup>b</sup>	-.11	.00	-.18	-.07	.01	.34 <sup>b</sup>	.30 <sup>a</sup>	.34 <sup>b</sup>
32. Self-Efficacy	.18	-.01	-.13	.27 <sup>a</sup>	.15	.25 <sup>a</sup>	.10	.29 <sup>a</sup>	.20	.29 <sup>a</sup>	-.17	.62 <sup>c</sup>	.02	-.13	.36 <sup>b</sup>	.33 <sup>b</sup>	.31 <sup>b</sup>
33. Stress	.00	-.05	-.01	-.28 <sup>a</sup>	-.28 <sup>a</sup>	-.29 <sup>a</sup>	-.15	-.12	-.31 <sup>b</sup>	-.34 <sup>b</sup>	.64 <sup>c</sup>	.66 <sup>c</sup>	.04	-.06	-.17	-.22	-.22
34. Strain	.01	-.14	-.03	-.31 <sup>b</sup>	-.31 <sup>b</sup>	-.35 <sup>b</sup>	-.13	-.17	-.30 <sup>a</sup>	-.34 <sup>b</sup>	.53 <sup>c</sup>	.66 <sup>c</sup>	.00	.01	-.17	-.13	-.21

Continued on next page

Table 9 (continued)

<i>M</i>	4.15	4.04	3.87	4.04	1.84	3.12	4.52	4.39	4.19	4.42	3.99	4.28	4.11	4.15	4.16	1.73	2.91
<i>SD</i>	.44	.56	.57	.54	.55	.65	.48	.42	.36	.49	.51	.42	.49	.48	.41	.60	.63
Variable	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
18. Feedback	<b>(.86)</b>																
19. Inv. Develop	.60 <sup>c</sup>	<b>(.78)</b>															
20. Promote HW	.47 <sup>c</sup>	.49 <sup>c</sup>	<b>(.85)</b>														
21. Self-Efficacy	.58 <sup>c</sup>	.53 <sup>c</sup>	.44 <sup>c</sup>	<b>(.87)</b>													
22. Stress	-.18	-.12	-.27 <sup>a</sup>	-.41 <sup>c</sup>	<b>(.84)</b>												
23. Strain	-.32 <sup>b</sup>	-.33 <sup>b</sup>	-.42 <sup>c</sup>	-.46 <sup>c</sup>	.73 <sup>c</sup>	<b>(.91)</b>											
24. Learn Motivation	.22	.17	.82 <sup>c</sup>	.06	-.01	-.02	<b>(.67)</b>										
25. Readiness	.38 <sup>c</sup>	.38 <sup>c</sup>	.22 <sup>a</sup>	.27 <sup>a</sup>	-.00	-.12	.57 <sup>c</sup>	<b>(.69)</b>									
<b>Time 3</b>																	
26. HWLB Scale	.41 <sup>b</sup>	.40 <sup>b</sup>	.42 <sup>c</sup>	.44 <sup>c</sup>	-.28 <sup>a</sup>	-.31 <sup>b</sup>	.15	.22	<b>(.91)</b>								
27 Support	.31 <sup>a</sup>	.32 <sup>b</sup>	.41 <sup>c</sup>	.46 <sup>c</sup>	-.28 <sup>a</sup>	-.31 <sup>b</sup>	.11	.12	.79 <sup>c</sup>	<b>(.85)</b>							
28. Communicate	.27 <sup>a</sup>	.27 <sup>a</sup>	.25 <sup>a</sup>	.40 <sup>b</sup>	-.23	-.31 <sup>a</sup>	-.00	.06	.76 <sup>c</sup>	.50 <sup>c</sup>	<b>(.87)</b>						
29. Feedback	.55 <sup>c</sup>	.40 <sup>b</sup>	.40 <sup>b</sup>	.35 <sup>b</sup>	-.15	-.26 <sup>a</sup>	.06	.21	.82 <sup>c</sup>	.58 <sup>c</sup>	.59 <sup>c</sup>	<b>(.85)</b>					
30. Inv. Develop	.36 <sup>b</sup>	.29 <sup>a</sup>	.15	.23	-.13	-.21	.27 <sup>a</sup>	.26 <sup>a</sup>	.69 <sup>c</sup>	.37 <sup>b</sup>	.38 <sup>b</sup>	.50 <sup>c</sup>	<b>(.81)</b>				
31. Promote HW	.06	.22	.37 <sup>b</sup>	.20	-.23	-.08	.11	.16	.73 <sup>c</sup>	.52 <sup>c</sup>	.40 <sup>c</sup>	.46 <sup>c</sup>	.35 <sup>b</sup>	<b>(.80)</b>			
32. Self-Efficacy	.27 <sup>a</sup>	.27 <sup>a</sup>	.22	.50 <sup>c</sup>	-.29 <sup>a</sup>	-.35 <sup>b</sup>	.13	.13	.68 <sup>c</sup>	.52 <sup>c</sup>	.59 <sup>c</sup>	.51 <sup>c</sup>	.47 <sup>c</sup>	.48 <sup>c</sup>	<b>(.82)</b>		
33. Stress	-.17	.06	-.14	-.31 <sup>a</sup>	.73 <sup>c</sup>	.57 <sup>c</sup>	.04	.12	-.29 <sup>a</sup>	-.36 <sup>b</sup>	-.19	-.15	-.10	-.29 <sup>a</sup>	-.30 <sup>a</sup>	<b>(.90)</b>	
34. Strain	-.17	-.01	-.16	-.29 <sup>a</sup>	.65 <sup>c</sup>	.69 <sup>c</sup>	.02	.12	-.42 <sup>c</sup>	-.39 <sup>b</sup>	-.33 <sup>b</sup>	-.29 <sup>a</sup>	-.23	-.34 <sup>b</sup>	-.41 <sup>c</sup>	.82 <sup>c</sup>	<b>(.86)</b>

Note. <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$ ; Learn Motivation reliability is a correlation because the scale is only two items

Table 10

*Study 3: Study 3: Direct Report Variable Descriptive Statistics, Intercorrelations, and Reliabilities at Leader Pre-training and Leader Post-training (N = 237-242)*

<i>M</i>	43.94	1.83	3.82	3.92	3.77	3.94	3.65	3.74	4.15	3.97	1.60	2.97	3.91	3.40	3.88	3.98	3.83	4.05
<i>SD</i>	11.75	.40	.88	1.04	.97	.88	1.08	.98	.00	.88	.51	.66	.85	1.04	.86	1.02	.96	.77
Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Age																		
2. Gender	.05	-																
<b>Pre-Training</b>																		
3. HWLB Scale	.02	.08	<b>(.97)</b>															
4. Support	-.06	.05	.92 <sup>c</sup>	<b>(.95)</b>														
5. Communicate	.00	.06	.87 <sup>c</sup>	.74 <sup>c</sup>	<b>(.93)</b>													
6. Feedback	-.03	.04	.86 <sup>c</sup>	.74 <sup>c</sup>	.72 <sup>c</sup>	<b>(.91)</b>												
7. Inv. Develop	-.01	.12	.91 <sup>c</sup>	.83 <sup>c</sup>	.71 <sup>c</sup>	.73 <sup>c</sup>	<b>(.91)</b>											
8. Promote HW	.10	.03	.89 <sup>c</sup>	.78 <sup>c</sup>	.72 <sup>c</sup>	.69 <sup>c</sup>	.76 <sup>c</sup>	<b>(.94)</b>										
9. Trust in lead	.07	.06	.80 <sup>c</sup>	.77 <sup>c</sup>	.72 <sup>c</sup>	.66 <sup>c</sup>	.71 <sup>c</sup>	.73 <sup>c</sup>	<b>(.93)</b>									
10. Super. Support	.02	.02	.82 <sup>c</sup>	.83 <sup>c</sup>	.69 <sup>c</sup>	.69 <sup>c</sup>	.75 <sup>c</sup>	.71 <sup>c</sup>	.75 <sup>c</sup>	<b>(.83)</b>								
11. Stress	-.16 <sup>a</sup>	.00	-.23 <sup>c</sup>	-.19 <sup>b</sup>	-.24 <sup>c</sup>	-.12	-.17 <sup>a</sup>	-.27 <sup>c</sup>	-.20 <sup>b</sup>	-.18 <sup>b</sup>	<b>(.82)</b>							
12. Strain	-.13 <sup>a</sup>	.03	-.44 <sup>c</sup>	-.37 <sup>c</sup>	-.37 <sup>c</sup>	-.34 <sup>c</sup>	-.41 <sup>c</sup>	-.45 <sup>c</sup>	-.39 <sup>c</sup>	-.41 <sup>c</sup>	.62 <sup>c</sup>	<b>(.88)</b>						
13. Psyc Safety	.11	.07	.78 <sup>c</sup>	.74 <sup>c</sup>	.63 <sup>c</sup>	.64 <sup>c</sup>	.74 <sup>c</sup>	.70	.71 <sup>c</sup>	.79 <sup>c</sup>	-.22 <sup>b</sup>	-.43 <sup>c</sup>	<b>(.86)</b>					
14. Healthy Work	-.01	.10	.59 <sup>c</sup>	.57 <sup>c</sup>	.51 <sup>c</sup>	.42 <sup>c</sup>	.56 <sup>c</sup>	.56 <sup>c</sup>	.61 <sup>c</sup>	.57 <sup>c</sup>	-.50 <sup>c</sup>	-.54 <sup>c</sup>	.52 <sup>c</sup>	<b>(.89)</b>				
<b>Post-training</b>																		
15. HWLB Scale	-.04	.04	.76 <sup>c</sup>	.71 <sup>c</sup>	.67 <sup>c</sup>	.66 <sup>c</sup>	.69 <sup>c</sup>	.66 <sup>c</sup>	.64 <sup>c</sup>	.67 <sup>c</sup>	-.21 <sup>b</sup>	-.39 <sup>c</sup>	.64 <sup>c</sup>	.48 <sup>c</sup>	<b>(.97)</b>			
16. Support	-.08	.01	.73 <sup>c</sup>	.74 <sup>c</sup>	.62 <sup>c</sup>	.63 <sup>c</sup>	.66 <sup>c</sup>	.61 <sup>c</sup>	.62 <sup>c</sup>	.69 <sup>c</sup>	-.17 <sup>a</sup>	-.37 <sup>c</sup>	.63 <sup>c</sup>	.44 <sup>c</sup>	.91 <sup>c</sup>	<b>(.95)</b>		
17. Communicate	.02	.08	.62 <sup>c</sup>	.56 <sup>c</sup>	.66 <sup>c</sup>	.54 <sup>c</sup>	.54 <sup>c</sup>	.52 <sup>c</sup>	.54 <sup>c</sup>	.52 <sup>c</sup>	-.20 <sup>b</sup>	-.32 <sup>c</sup>	.50 <sup>c</sup>	.40 <sup>c</sup>	.87 <sup>c</sup>	.68 <sup>c</sup>	<b>(.95)</b>	
18. Feedback	-.10	.02	.65 <sup>c</sup>	.61 <sup>c</sup>	.56 <sup>c</sup>	.59 <sup>c</sup>	.57 <sup>c</sup>	.58 <sup>c</sup>	.51 <sup>c</sup>	.52 <sup>c</sup>	-.24 <sup>c</sup>	-.34 <sup>c</sup>	.54 <sup>c</sup>	.36 <sup>c</sup>	.88 <sup>c</sup>	.78 <sup>c</sup>	.75 <sup>c</sup>	<b>(.91)</b>
19. Inv. Develop	-.06	.03	.70 <sup>c</sup>	.65 <sup>c</sup>	.59 <sup>c</sup>	.62 <sup>c</sup>	.70 <sup>c</sup>	.61 <sup>c</sup>	.58 <sup>c</sup>	.60 <sup>c</sup>	-.11	-.32 <sup>c</sup>	.57 <sup>c</sup>	.43 <sup>c</sup>	.91 <sup>c</sup>	.79 <sup>c</sup>	.73 <sup>c</sup>	.73 <sup>c</sup>
20. Promote HW	-.06	.03	.65 <sup>c</sup>	.63 <sup>c</sup>	.58 <sup>c</sup>	.58 <sup>c</sup>	.60 <sup>c</sup>	.65 <sup>c</sup>	.62 <sup>c</sup>	.63 <sup>c</sup>	-.22 <sup>b</sup>	-.41 <sup>c</sup>	.59 <sup>c</sup>	.51 <sup>c</sup>	.91 <sup>c</sup>	.80 <sup>c</sup>	.74 <sup>c</sup>	.75 <sup>c</sup>
21. Trust in lead	-.03	.06	.71 <sup>c</sup>	.66 <sup>c</sup>	.66 <sup>c</sup>	.58 <sup>c</sup>	.62 <sup>c</sup>	.66 <sup>c</sup>	.79 <sup>c</sup>	.67 <sup>c</sup>	-.17 <sup>b</sup>	-.36 <sup>c</sup>	.61 <sup>c</sup>	.52 <sup>c</sup>	.77 <sup>c</sup>	.73 <sup>c</sup>	.67 <sup>c</sup>	.64 <sup>c</sup>
22. Super. Support	-.05	.04	.69 <sup>c</sup>	.66 <sup>c</sup>	.61 <sup>c</sup>	.55 <sup>c</sup>	.63 <sup>c</sup>	.61 <sup>c</sup>	.63 <sup>c</sup>	.70 <sup>c</sup>	-.19 <sup>b</sup>	-.42 <sup>c</sup>	.62 <sup>c</sup>	.46 <sup>c</sup>	.83 <sup>c</sup>	.83 <sup>c</sup>	.69 <sup>c</sup>	.74 <sup>c</sup>
23. Stress	-.16 <sup>a</sup>	-.04	-.22 <sup>b</sup>	-.14 <sup>a</sup>	-.21 <sup>b</sup>	-.14 <sup>a</sup>	-.18 <sup>b</sup>	-.26 <sup>c</sup>	-.22 <sup>b</sup>	-.17 <sup>b</sup>	.65 <sup>c</sup>	.47 <sup>c</sup>	-.22 <sup>b</sup>	.25 <sup>b</sup>	-.31 <sup>c</sup>	-.20 <sup>b</sup>	-.34 <sup>c</sup>	-.26 <sup>c</sup>
24. Strain	-.11	-.07	-.32 <sup>c</sup>	-.24 <sup>c</sup>	-.26 <sup>c</sup>	-.24 <sup>c</sup>	-.33 <sup>c</sup>	-.36 <sup>c</sup>	-.29 <sup>c</sup>	-.28 <sup>c</sup>	.47 <sup>c</sup>	.70 <sup>c</sup>	-.33 <sup>c</sup>	-.37 <sup>c</sup>	-.45 <sup>c</sup>	.35 <sup>c</sup>	-.40 <sup>c</sup>	-.40 <sup>c</sup>
25. Psyc Safety	.06	.06	.64 <sup>c</sup>	.57 <sup>c</sup>	.58 <sup>c</sup>	.53 <sup>c</sup>	.59 <sup>c</sup>	.60 <sup>c</sup>	.60 <sup>c</sup>	.62 <sup>c</sup>	-.16 <sup>a</sup>	-.40 <sup>c</sup>	.66 <sup>c</sup>	.39 <sup>c</sup>	.78 <sup>c</sup>	.74 <sup>c</sup>	.66 <sup>c</sup>	.67 <sup>c</sup>
26. Healthy Work	.03	.04	.47 <sup>c</sup>	.40 <sup>c</sup>	.43 <sup>c</sup>	.35 <sup>c</sup>	.47 <sup>c</sup>	.44 <sup>c</sup>	.42 <sup>c</sup>	.41 <sup>c</sup>	-.46 <sup>c</sup>	-.53 <sup>c</sup>	.38 <sup>c</sup>	.75 <sup>c</sup>	.56 <sup>c</sup>	.47 <sup>c</sup>	.51 <sup>c</sup>	.47 <sup>c</sup>

*Continued on next page*



Table 10 (Continued)

<i>M</i>	3.67	3.89	4.13	4.02	1.58	2.87	3.89	3.50
<i>SD</i>	1.08	.94	.99	.90	.54	.67	.92	1.05
Variable	19	20	21	22	23	24	25	26
19. Inv. Develop	<b>(.93)</b>							
20. Promote HW	.79 <sup>c</sup>	<b>(.94)</b>						
21. Trust in lead	.68 <sup>c</sup>	.72 <sup>c</sup>	<b>(.94)</b>					
22. Super. Support	.71 <sup>c</sup>	.75 <sup>c</sup>	.76 <sup>c</sup>	<b>(.85)</b>				
23. Stress	-.24 <sup>c</sup>	-.30 <sup>c</sup>	-.23 <sup>c</sup>	-.22 <sup>b</sup>	<b>(.87)</b>			
24. Strain	-.39 <sup>c</sup>	-.46 <sup>c</sup>	-.37 <sup>c</sup>	-.42 <sup>c</sup>	.63 <sup>c</sup>	<b>(.89)</b>		
25. Psyc Safety	.71 <sup>c</sup>	.71 <sup>c</sup>	.73 <sup>c</sup>	.80	-.22 <sup>b</sup>	-.45 <sup>c</sup>	<b>(.89)</b>	
26. Healthy Work	.51 <sup>c</sup>	.55 <sup>c</sup>	.49 <sup>c</sup>	.49 <sup>c</sup>	-.47 <sup>c</sup>	-.53 <sup>c</sup>	.45 <sup>c</sup>	<b>(.89)</b>

Note. <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$ ; Healthy Work  $N = 141$

leadership behaviours, I examined the impact of the Leading Healthy Workplaces program on leaders' behaviours (Hypothesis 2) by conducting a series of multilevel analyses.

For Support, there was a significant effect of time,  $F(1,181) = 5.40, p < .05$ , but not a significant effect of group,  $F(1,177) = 1.34, p > .05$  nor a significant group X time interaction,  $F(1,182) = 1.42, p > .05$ . That is, leaders Support behaviours increased over time, but the groups did not significantly differ.

Table 11

*Study 3: Multilevel Model Fit and ICC Summary*

	Null Model	Random Intercept Model	$\chi^2$ change
Criterion	-2LL	-2LL	
Knowledge	635.17	630.19	4.96
Support	358.93	349.16	9.77 <sup>a</sup>
Communication	410.50	375.04	35.46 <sup>c</sup>
Feedback	285.33	271.44	13.89 <sup>b</sup>
Involve & Develop	396.12	385.42	10.70 <sup>b</sup>
Promote HW	485.23	442.27	42.96 <sup>c</sup>
Self-Efficacy	350.47	330.09	20.38 <sup>c</sup>
Stress	403.06	372.10	30.96 <sup>c</sup>
Strain	427.24	402.96	24.28 <sup>c</sup>

*Note.* <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$ ;  $\chi^2$  change based on df change = 3

Table 12

*Study 3: Leaders' Reactions to Training (N = 72)*

Statement	M (SD)	% of leaders agreeing*
I found the coaching helpful.	4.64 (.59)	97.3
I found the coaching beneficial.	4.50 (.63)	95.9
I found the program credible.	4.57 (.65)	94.5
I found the program relevant.	4.54 (.63)	95.8
I was happy with the service provided by the program	4.58 (.64)	94.5
Overall, I feel that I met my program goals.	4.47 (.71)	93.0
Through the program, I have made positive changes at work.	4.42 (.53)	98.7

*Note.* \* Percentage of leaders that responded 'somewhat agree' or 'strongly agree' to each statement

### **Level 3: Behaviour Change (Healthy Workplace Leadership Behaviours)**

#### **Leaders' Perceptions of Healthy Workplace Leadership Behaviours**

In order to examine the key goal of the training (i.e., Kirkpatrick's [1996] Level 3 – Behaviour Change component), the effectiveness of the LHW program in improving leaders' leadership behaviours, I examined the impact of the Leading Healthy Workplaces program on leaders' behaviours (Hypothesis 2) by conducting a series of multilevel analyses.

For Support, there was a significant effect of time,  $F(1,181) = 5.40, p < .05$ , but not a significant effect of group,  $F(1,177) = 1.34, p > .05$  nor a significant group X time interaction,  $F(1,182) = 1.42, p > .05$ . That is, leaders Support behaviours increased over time, but the groups did not significantly differ.

For Communicate Effectively, there was a significant effect of time,  $F(1,185) = 27.05, p < .001$ , but not a significant effect of group,  $F(1,193) = .00, p > .05$  nor a significant group X time interaction,  $F(1,188) = 3.47, p > .05$ . That is, leaders Communicate Effectively behaviours increased over time, but the groups did not significantly differ.

For Feedback, there was a significant effect of time,  $F(1,178) = 10.34, p < .01$ , but not a significant effect of group,  $F(1,165) = .69, p > .05$ . That is, leaders Feedback behaviours increased over time. There was also a significant group X time interaction,  $F(1,180) = 4.13, p < .05$  thus suggesting a difference in groups over time.

For Involve and Develop, there was not a significant effect of time,  $F(1,187) = 2.84, p > .05$ , however, there was a significant effect of group,  $F(1,198) = 4.89, p < .05$ . There was also not a significant interaction,  $F(1,189) = .07, p > .05$ . Therefore, leaders Involve and Develop behaviours did not change over time however, groups differed in Involve and Develop behaviours.

For Promote a Healthy Workplace, there was a significant effect of time,  $F(1,174) = 28.31, p < .001$ , but not a significant effect of group,  $F(1,168) = .41, p > .05$ , nor a significant group X time interaction,  $F(1,175) = 1.68, p > .05$ . That is, leaders Promote a Healthy Workplace behaviours increased over time, but groups did not differ.

In order to assess the effect of the organization, leaders were nested within organizations and time was used as a predictor. Time was a significant predictor for Communicate Effectively,  $F(1,100) = 11.90, p < .01$  and Promote a Healthy Workplace,  $F(1,100) = 14.16, p < .001$ . However, time was not a significant predictor of the three remaining Healthy Workplace Leadership Behaviours.

These findings provide partial support for Hypothesis 2: There was also a significant group X time interaction for Feedback however there was not for the other HWLBs. However, leaders self-reported increases in Support, Communicate Effectively, Feedback and Promote a Healthy Workplace behaviours over time. Involve and Develop behaviours did not increase over time.

### **Leaders' Self-Efficacy, Strain, and Stress**

To examine the impact of the Leading Healthy Workplaces program on leaders' self-efficacy (Hypothesis 3), and leaders' strain, and stress (Hypothesis 7), I conducted a series of Multilevel analyses.

For self-efficacy, there was a significant effect of time,  $F(1,178) = 12.37, p < .05$ , but not a significant effect of group,  $F(1,169) = .40, p > .05$  nor a significant group X time interaction,  $F(1,177) = 1.01, p > .05$ . That is, leaders self-efficacy increased over time, but groups did not differ.

For strain, there was a significant effect of time,  $F(1,166) = 6.17, p < .05$ , a significant effect of group,  $F(1,135) = 4.31, p < .05$  but not a significant group X time interaction,  $F(1,165) = .33, p > .05$ . That is, leaders strain decreased over time and significantly differed between groups.

For stress, there was a significant effect of time,  $F(1,171) = 10.90, p < .01$ , but not a significant effect of group,  $F(1,145) = .83, p > .05$  nor a significant group X time interaction,  $F(1,170) = .20, p > .05$ . That is, stress decreased over time, but groups did not significantly differ.

In order to assess the effect of the organization, leaders were nested within organizations and time was used as a predictor. Time was a significant predictor for self-efficacy,  $F(1,198) = 5.40, p < .05$ . However, time was not a significant predictor of stress or strain. Although self-

efficacy increased over time and strain and stress decreased over time, there were no significant interactions. Therefore, these findings do not support Hypothesis 3 and 7.

### **Direct Reports' Perceptions of Healthy Workplace Leadership Behaviours**

To examine the impact of the Leading Healthy Workplaces program on direct reports perceptions of leaders' behaviours (Hypothesis 4), I conducted a series of multilevel models with direct reports nested within leaders examining direct reports perceptions of leaders Healthy Workplace Leadership Behaviours. The null model was significant for all five of the Healthy Workplace Leadership Behaviours with 14-20% of variance in Healthy Workplace Leadership Behaviours being between leaders. Given that intercepts significantly varied across leaders and because interclass correlations suggest that 14-20% of the variance in Healthy Workplace Leadership behaviours is explained between leaders, I conducted another multilevel model adding in the fixed effect of time. There was a significant fixed effect of time for one of the five Healthy Workplace Leadership Behaviours. Specifically, there was a significant change in Promotion of a Healthy Workplace behaviours over time.  $F(838) = 5.54, p < .05$ . That is, direct reports reported significant improvement in Promotion of a Healthy Workplace behaviours but not Support, Communication, Feedback or Involve and Develop behaviours, thus, providing partial support for Hypothesis 4.

### **Process Analyses**

#### **Leader Knowledge, Motivation to Learn, and Readiness for Change**

Five multiple regressions were conducted to examine the impact of leader knowledge (Time 2 for Group 1 and Time 3 for Group 2) on leadership behaviours (Time 2 for Group 1 and Time 3 for Group 2); Hypothesis 5). Leader knowledge did not account for a significant amount of variance in any of the HWLB subscales: Support ( $R^2 = .00, F(1,57) = .27, p > .05$ ),

Communication ( $R^2 = .01$ ,  $F(1,57) = .38$ ,  $p > .05$ ), Involve and Develop ( $R^2 = .01$ ,  $F(1,57) = .76$ ,  $p > .05$ ), Feedback ( $R^2 = .00$ ,  $F(1,57) = .22$ ,  $p > .05$ ), and Promote a Healthy Workplace ( $R^2 = .01$ ,  $F(1,57) = .32$ ,  $p > .05$ ). Therefore, Hypothesis 5 was not supported: Leader knowledge after training was not associated with Healthy Workplace Leadership Behaviours after training.

To assess if (a) leader motivation to learn at Time 1 and (b) leaders' readiness for change at Time 1 interacted with the training to increase HWLBs (i.e., pre-training, post-training; Hypothesis 6), I conducted 5 bootstrapped moderated regression analyses using SPSS PROCESS (Hayes, 2013). Significant interactions with the PROCESS macro are indicated by 95% confidence intervals that do not include zero. All variables were mean centered prior to the analyses.

Pre-training Support behaviours, Motivation to Learn, and Readiness for Change accounted for a significant amount of variance in Support behaviours post-training,  $R^2 = .20$ ,  $F(5, 65) = 3.28$ ,  $p < .05$  (see Table 13; Analysis 1). However, there was not a significant interaction between Pre-training Support and Motivation to Learn,  $\Delta R^2 = .01$ ,  $F(1, 65) = .73$ ,  $p > .05$ , nor Pre-training Support and Readiness for Change,  $\Delta R^2 = .01$ ,  $F(1, 65) = .74$ ,  $p > .05$  (see Table 13; Analysis 1). Therefore, Motivation to Learn nor Readiness for Change moderated leaders' Support behaviours across time.

Pre-training Communication behaviours, Motivation to Learn and Readiness for Change did not account for a significant amount of variance in Communication behaviours post-training,  $R^2 = .13$ ,  $F(5, 65) = 1.88$ ,  $p > .05$  (see Table 13; Analysis 2). Moreover, there was not a significant interaction between Pre-training Communication and Motivation to Learn,  $\Delta R^2 = .00$ ,  $F(1, 65) = .09$ ,  $p > .05$ , nor Pre-training Communication and Readiness for Change,  $\Delta R^2 = .01$ ,

$F = (1, 65) = .40, p > .05$  (see Table 13; Analysis 2). Therefore, Motivation to Learn nor Readiness for Change moderated leaders' Communication behaviours across time.

Pre-training Feedback behaviours, Motivation to Learn and Readiness for Change accounted for a significant amount of variance in Feedback behaviours post-training,  $R^2 = .21, F(5, 65) = 5.92, p < .001$  (see Table 13; Analysis 3). However, there was not a significant interaction between Pre-training Feedback and Motivation to Learn,  $\Delta R^2 = .00, F = (1, 65) = .42, p > .05$ , nor Pre-training Feedback and Readiness for Change,  $\Delta R^2 = .00, F = (1, 65) = .03, p > .05$  (see Table 13; Analysis 3). Therefore, Motivation to Learn nor Readiness for Change moderated leaders' Feedback behaviours across time.

Pre-training Involve and Develop behaviours, Motivation to Learn and Readiness for Change did not account for a significant amount of variance in Involve and Develop behaviours post-training,  $R^2 = .10, F(5, 65) = 1.41, p > .05$  (see Table 13; Analysis 4). Moreover, there was not a significant interaction between Pre-training Involve and Develop and Motivation to Learn,  $\Delta R^2 = .00, F = (1, 65) = .01, p > .05$ , nor Pre-training Involve and Develop and Readiness for Change,  $\Delta R^2 = .01, F = (1, 65) = .49, p > .05$  (see Table 13; Analysis 4). Therefore, Motivation to Learn nor Readiness for Change moderated leaders' Involve and Develop behaviours across time. Pre-training Promotion of a Healthy Workplace behaviours, Motivation to Learn and Readiness for change did not account for a significant amount of variance in Promotion of a Healthy Workplace behaviours post-training,  $R^2 = .14, F(5, 65) = 2.15, p > .05$  (see Table 13; Analysis 5). Moreover, there was not a significant interaction between Pre-training Promotion of a Healthy Workplace and Motivation to Learn,  $\Delta R^2 = .00, F = (1, 65) = .00, p > .05$ , nor Pre-training Promotion of a Healthy Workplace and Readiness for Change,  $\Delta R^2 = .01, F = (1, 65) = .02, p > .05$  (see Table 13; Analysis 5). Therefore, neither Motivation to Learn nor Readiness for



Change moderate leaders' Promotion of a Healthy Workplace behaviours across time, thus, Hypothesis 6 was not supported.

#### **Level 4: Results of Training (Well-being of Leaders and Direct Reports)**

In order to examine Kirkpatrick's (1996) Level 4 – Results of the training, I examined the impact of the Leading Healthy Workplaces program on direct reports indirect outcomes of leaders that participated in the Leading Healthy Workplaces program (Hypothesis 8). I conducted a series of MLM with direct reports nested within leaders examining direct reports strain, stress, trust in leader, perceptions of psychological safety, perceived supervisor support, and perceptions of a healthy workplace. The null model was significant for all variables except stress with 14-25% of variance in direct report indirect outcomes being between leaders. Given that intercepts significantly varied across leaders and because interclass correlations suggest that 14-25% of the variance in strain, trust in leader, perceptions of psychological safety, perceived supervisor support, and perceptions of a healthy workplace is explained between leaders, I conducted another multilevel model adding in the fixed effect of time. There was not a fixed effect of time for any of the direct report indirect outcomes. That is, there were no significant differences over time in direct reports perceptions of psychological safety, trust in leader, perceived supervisor support, perceptions of a psychologically healthy workplace, strain or stress, thus, failing to provide support for Hypothesis 8.

#### **Study 3: Discussion**

The goals of this study were to develop the LHW training program and evaluate the effectiveness of the program by examining leaders psychologically healthy workplace behaviours longitudinally (pre, post, and follow-up) through direct reports and self-ratings, in

Table 13

*Study 3: Moderated Regression Analyses Assessing the Effect of Motivation to Learn and Readiness for Change on HWLB over time (i.e., Pre-training to Post-training; N = 68; Hypothesis 6)*

	$\beta$	$t$	$p$	95% CI	R	R <sup>2</sup>	$\Delta R^2$	F
<b>Analysis 1</b>					.45 <sup>a</sup>	.20 <sup>a</sup>		3.28 <sup>a</sup>
Constant	4.39	81.19	.00	[4.28, 4.50]				
Support Pre-training	.43	3.88	3.88	[.21, .65]				
Motivation to Learn	.05	.39	.70	[-.21, .30]				
Readiness for Change	-.09	-.56	.58	[-.43, .24]				
Support Pre-training X Motivation to Learn	-.20	-.86	.40	[-.68, .27]			.01	.73
Support Pre-training X Readiness for Change	-.09	.86	.39	[-.31, .78]			.01	.74
<b>Analysis 2</b>					.36	.13		1.88
Constant	3.99	75.01	.00	[3.89, 4.10]				
Communication Pre-training	.26	2.63	.01	[.06, .46]				
Motivation to Learn	-.18	-1.38	.17	[-.43, .08]				
Readiness for Change	.24	1.41	.16	[-.11, .59]				
Communication Pre-training X Motivation to Learn	.07	.31	.76	[-.38, .52]			.00	.09
Communication Pre-training X Readiness for Change	-.20	-.64	.52	[-.83, .42]			.01	.40
<b>Analysis 3</b>					.56 <sup>c</sup>	.31 <sup>c</sup>		5.92 <sup>c</sup>
Constant	4.22	95.66	.00	[4.14, 4.32]				
Feedback Pre-training	.46	4.94	.00	[.27, .64]				
Motivation to Learn	-.07	-.66	.51	[-.27, .14]				
Readiness for Change	.14	1.01	.32	[-.14, .41]				
Feedback Pre-training X Motivation to Learn	.12	.65	.52	[-.25, .50]			.00	.42
Feedback Pre-training X Readiness for Change	-.04	-.16	.87	[-.57, .48]			.00	.03
<b>Analysis 4</b>					.31	.10		1.41
Constant	4.12	64.17	.00	[4.00, 4.26]				
Involve & Develop Pre-training	.27	1.92	.06	[-.01, .55]				
Motivation to Learn	.18	1.18	.24	[-.12, .47]				
Readiness for Change	.02	.11	.91	[-.39, .43]				
Involve & Develop Pre-training X Motivation to Learn	.03	.10	.92	[-.39, .43]			.00	.01
Involve & Develop Pre-training X Readiness for Change	-.30	-.70	.49	[-.16, .56]			.01	.49
<b>Analysis 5</b>					.38	.14		2.15
Constant	4.09	69.71	.00	[3.97, 4.20]				
Promote Pre-training	.31	3.12	.00	[.11, .51]				
Motivation to Learn	-.08	-.57	.57	[-.36, .20]				
Readiness for Change	.11	.59	.56	[-.25, .48]				
Promote Pre-training X Motivation to Learn	.01	.02	.98	[-.44, .45]			.00	.00
Promote Pre-training X Readiness for Change	.03	.12	.90	[-.50, .57]			.00	.02

Note. <sup>a</sup> $p < .05$ , <sup>b</sup> $p < .01$ , <sup>c</sup> $p < .001$ ; Predictors and moderators are mean centred

order to assess the effectiveness of the program. Results of the study provide partial evidence that healthy workplace leadership behaviours can be increased through leadership training.

### **Level 1: Leaders' Reactions to Training**

Leaders' reactions to the program were very positive, thus providing support for Kirkpatrick's (1996) Level 1, reactions to training (i.e., feelings about the training). Over 90% of leaders viewed the program positively and beneficial and had reported making positive changes at work as a result of the program and reported meeting their goals as a result of the program.

### **Level 2: Learning from Training (Knowledge about Leadership Behaviours)**

Leaders' knowledge about leadership behaviours that can contribute to psychologically healthy workplaces did not increase after the Leading Healthy Workplaces training program. An examination of the knowledge means indicated that even at Time 1, leaders have the knowledge of leadership behaviours that contribute to a healthy workplace (i.e., ceiling effect). Thus, it is not knowledge about healthy workplace leadership behaviour that is lacking. These results suggest that effecting change may require more than simply knowledge.

### **Level 3: Behaviour Change (Healthy Workplace Leadership Behaviours)**

There was a significant interaction in leaders self-reported Feedback behaviours in that leaders in Time 1 Training reported increases following training (between Time 1 and Time 2) compared to the Waitlist Time 2 Training. However, there were not significant interactions for the Support, Communicate, Involve and Develop, or Promote a Healthy Workplace subscales. Nonetheless, leaders self-reported Support, Communicate, Feedback, and Promote a Healthy Workplace behaviours increased over the three time points. An examination of the HWLB subscale means at pre-training for both groups indicated that leaders HWLBs were quite high at

Time 1, thus suggesting that the HWLB had less room for improvement as a result of the program (i.e., ceiling effect).

Moreover, there was not a significant interaction in leaders' self-efficacy. This finding is interesting given that previous studies have shown that leadership training can increase self-efficacy (e.g., Mullen & Kelloway, 2009). Nonetheless, overall, leaders did report increases in self-efficacy. However, it should be noted that using multilevel modeling interactions for 3 time points for leaders is considered to be a conservative test. Moreover, an examination of graphs plotting the HWLB subscale scores indicates that the patterns are in the expected direction, such that Time 1 Training group leadership behaviours increase from Time 1 to Time 2, whereas Time 2 Training group leadership behaviours increase from Time 2 to Time 3 across the subscales. Although many the interactions for leaders' HWLBs and outcomes (strain, stress, self-efficacy) were not significant using multilevel modeling, when I conducted a post hoc analysis with a mixed 2 (group) X 3 (time) repeated measures multivariate analysis of variance (MANOVA): Two additional HWLBs had significant interactions (Communicate,  $F(2, 132) = 4.32, p < .05$  and Promote a Healthy Workplace,  $F(2, 132) = 3.41, p < .05$ ) as well as one leader outcome (Strain).

Similar to leaders, direct reports reported increases in one of their leaders' HWLBs. Specifically, direct reports noted an increase in leaders' Promotion of a Healthy Workplace. Direct reports did not report increases in Communication, Support, Feedback or Involve and Develop behaviours. Direct reports may not have observed changes in all HWLBs because it may take longer for direct reports to observe leaders' behavioural changes. Thus, it is possible that these changes in HWLBs take longer to implement or that post-training follow-up did not

capture such behaviours. Overall, in terms of behaviour changes, leaders and direct reports reported observing some changes in HWLBs.

### **Leader Motivation to Learn, Readiness for Change, and Knowledge**

Although it was expected that leaders' knowledge of HWLBs would be associated with higher levels of their own HWLB's, leader knowledge did not account for a significant amount of variance in any of the HWLB subscales. Despite the expectation that pre-training motivation to learn and readiness for change would moderate leaders' change in HWLBs, neither of these variables moderated the HWLBs over time. Both of these findings are contrary to research suggesting that transfer of training is influenced by knowledge gained, motivation, and readiness for change (see Baldwin et al., 2009; and Blume et al., 2010 for reviews). Given that the majority of the leaders self-selected into the program, it is possible that motivation to learn and readiness for change were not as important of predictors. Moreover, as previously discussed, leaders' knowledge was high before participating in training. Therefore, it is possible that other mechanisms are responsible for influencing the effectiveness of the Leading Healthy Workplaces program.

### **Level 4: Results of Training (Well-Being of Leaders and Direct Reports)**

There were not significant interactions in leaders' strain or stress. However, overall, leaders reported a reduction in stress and strain over the three time points. Additionally, direct reports did not report improvements in psychological safety, trust in leader, perceived supervisor support, perceptions of a psychologically healthy workplace, strain, or stress. Given that direct reports did not report increases in leaders' Supportive behaviours or Communication, it was not a surprise that direct reports did not experience a decrease in stress or strain or an increase in psychological safety, trust in leader, or perceived supervisor support because supportive

leadership behaviours have been shown to be associated with these outcomes (e.g., Eisenberger et al., 2002; Maertz et al., 2007; Roussin, 2008; Schrisheim et al., 1999). Perhaps the lack of changes in several direct reports outcomes could also be the result of the length of the study, where a post-training and 3-month follow-up may not have been a sufficient amount of time to capture more substantial organizational effects such as the perception of a psychologically healthy workplace.

### **Limitations and Future Research**

Despite the strengths of this longitudinal research design, this study is not without limitations that future research should consider. First, the Leading Healthy Workplaces program involved a waitlist control training design, in which leaders were assigned to either the Time 1 Training group or Waitlist-Time 2 Training group. A true random assignment was not used with most of the sample because of geographic locations of participating organizations (participants were from seven provinces across Canada) and the logistics surrounding coordinating an in-person workshop with organizations with a small number of participants. However, random assignment was used in locations with a large number of participants. Therefore, it is possible that there were some inherent differences between the two groups (i.e., Time 1 Training group and Waitlist Time 2 Training); however, post-hoc analyses indicated that the two groups did not differ on any of the dependent variables or demographic variables (age, gender, ethnicity, leadership tenure).

A second limitation of this study was attrition over the length the study given that 23% of the participants that started the program failed to complete the program and that 6% of participants that completed the program failed to complete all three surveys (i.e., pre-intervention, post-intervention, follow-up). Post hoc analyses of data at Time 1 indicated that

there were no differences on any of the dependent variables between the leaders that dropped out of the program and the leaders that completed the program at. Qualitative coach data indicated that most participants dropped out of the program due to time constraints in their current leadership position.

Interestingly, the leaders who dropped out due to time constraints often also emphasized the value they saw in the program. Conceivably, the leaders that may benefit the most from the such a program are too busy to partake in such a program. Perhaps future research might consider adding a motivational component to the training program and/or an organizational buy-in component, whereby researchers/trainers garner buy-in by emphasizing the long-term benefits of the program and assess whether or not such additions to the training program may increase retention and effectiveness of the program outcomes. Additionally, in order to potentially reduce attrition, researchers might consider implementing a selection process in which leaders can be screened for their time available to participate in the program and implement the material they learned as well as motivation to learn. Moreover, it might be worthwhile for researchers to condense the length of the program in an effort to reduce attrition and assess whether a condensed program is as effective.

A third potential limitation of this study to consider is the generalizability of the findings given that the participants were predominantly women. This gender composition might be the result of the participating industries, given that many of the organizations were in female-dominated industries, such as healthcare and non-profit sector. However, one technology company was included amongst the organizations that had a gender composition of 91 percent male. Although recent research has suggested that gender does not moderate the relationship between leadership development and leader performance (Kuhnert, 2018), it is possible that this

particular study's findings may not generalize to men. Future research might consider recruiting men for leadership training interventions by including organizations from a larger variety of industries and assessing whether such a program can be as effective with men.

A fourth potential limitation of the study is the survey measurement periods. Although other studies have used similar time periods to assess behavioural changes (e.g., Barling et al., 1996; Hartling, 2018; Kelloway et al., 2000; Mullen & Kelloway, 2009), behavioural change can take longer than studies that focus on attitudinal change. Although this study employed a waitlist control training design whereby final surveys were collected from the Time 1 Training group 3-months post-training and from the Waitlist Time 2 Training group immediately following training for leaders, and pre-leader training and immediately post-leader training, it might be beneficial to assess the impacts of training over a more extended follow-up period as immediately after training for direct reports and the 3-month follow-up may not have been a sufficient amount of time to capture behavioural changes and more substantial organizational effects.

Finally, future research might consider examining other mechanisms that help predict intervention success (Nielsen & Miraglia, 2017), such as type of training, as well as individual and organisational/work-related variables (e.g., Colquitt et al., 2000; Mathieu & Martineau, 1997; Noe & Schmitt, 1986). For instance, in the current sample, leaders ranged from front-line leaders to a CEO. It would be interesting to examine the effectiveness of the program on different leadership levels or further tailor the program to different experience levels, given that one previous meta-analysis has indicated that leadership training is the most effective for low-level leaders (Avolio et al., 2009). Moreover, research has indicated that longer leadership training programs are more effective on organizational and direct report outcomes than shorter



programs (Lacerenza et al., 2017). Therefore, it would be interesting to see if a longer coaching relationship would be effective in improving training outcomes.

It might be worthwhile to examine individual mechanism that may influence training success, such as leaders' availability to apply training or overall organizational commitment to training.

At the organizational level, it could be interesting to examine if tying performance metrics to training, and/or if increasing internal stakeholders and creating additional organizational buy-in could influence training success. For instance, future research may consider whether having all leaders within an organization go through training would result in increased behaviour change than if only some leaders within the organization participated in the training. It also would be interesting to implement the training as a multipronged approach at the organizational level. Although the current training program only targeting training leaders, perhaps components of the training could target direct reports as well or be offered in conjunction with direct report training. For instance, recent research has suggested that leadership can be interpreted as a two-way process whereby direct reports can influence their leaders' well-being and ability to perform in their leadership role (e.g., Nielsen & Taris, 2019). Therefore, direct reports could play a role in creating a healthy work environment for their leader (e.g., by being supportive, recognizing work, developing relationship, participating in dialog and involving others in dialog), which could influence their capacity to engage in certain behaviours (St-Hilaire, Gilbert, Brun, 2019). Likewise, Nielsen and Munir (2009) demonstrated that direct reports' self-efficacy affected leaders' transformational leadership over time, and Wirtz, Rigotti, Otto, and Loeb (2017) reported that direct reports' engagement predicted leaders' engagement. Therefore, future research may benefit from training both direct reports and leaders at the same

time in terms of Healthy Workplace Leadership Behaviours as well as behaviours that direct reports can engage in order to foster a healthy workplace and act as resources for leaders (e.g., recognizing their leaders' work) as well as allow further understanding of the crossover effect from direct reports to leaders (Nielsen & Taris, 2019).

### **Practical Implications**

Researchers and practitioners often fixate on identifying components of a healthy workplace. This dissertation goes beyond identifying components and demonstrates how healthier workplaces can be created through training leaders. With regards to the emphasis on creating healthy workplaces through leadership training, although many leaders were familiar with the components of a healthy workplace and positive leadership, leaders often vocalized their inability to apply such training and knowledge in the past. Coincidentally, employees might be recognizing that their leaders are not emphasizing the importance of a healthy workplace given that a recent survey by the American Psychological Association (2016), Work and Well-being Survey reported that only 40 percent of American employees reported that their leader is committed to well-being initiatives. The results of this study emphasize the importance of fostering healthier workplaces through the platform of leadership training.

### **Conclusion**

Study 3 provided some preliminary evidence of the potential effectiveness of the Leading Healthy Workplaces: Fostering a Psychologically Healthy Workplace through Leadership Training program to improve Feedback and Promotion of a Healthy Workplace. Within the study, the major finding was that the program was effective in training two Healthy Workplace Leadership Behaviours as self-reported by leaders (Feedback) and direct reports (Promotion of a Healthy Workplace). At the same time, leaders reported increases in some of the HWLBs and

self-efficacy over the course of the 6 months (3 time points) as well as reductions in stress and strain.

### **General Discussion**

The area of psychologically healthy workplaces has received increased attention in recent years (e.g., Day & Randell, 2014; Loughlin & Mercer, 2014). Although, various models of components of healthy workplaces have been developed (e.g., Grawitch et al., 2006; Kelloway & Day, 2005), organizations have still faced challenges when it comes to implementing healthy workplace components (Grawitch et al., 2009). Given the positive success of leadership interventions and the calls for incorporating the role of leaders into interventions (Kelloway & Barling, 2010) and into fostering healthy workplaces (Nielsen, 2014), a training program emphasizing specific leadership behaviours that can contribute to a healthy workplace was an important research step. Therefore, these three studies built on current psychologically healthy workplace models (e.g., Grawitch et al. Kelloway & Day, 2005), leadership literature (e.g., Bass 1985; Graen, 1976), occupational stress models (Demerouti et al., 2001; Hobfoll, 1998; Hobfoll & Shirom, 2001; Siegrist, 2001), and research on leaders and occupational health psychology interventions (Kelloway & Barling, 2010; Kelloway et al., 2008; Nielsen, 2014) by emphasizing how leaders, and psychologically healthy workplaces can act as resources for employees through developing a scale, a training program, and assessing the effectiveness of the program aimed at improving healthy workplaces through leadership.

Results from these three studies provide insight into the process through which leaders can influence psychologically healthy workplaces by developing and exploring a new measure (Healthy Workplace Leadership Behaviours; Study 1) that is related to employee outcomes such as stress, strain, job satisfaction, and trust in leader (Study 2), and training leaders' behaviours

that may influence employee well-being and they overall functioning of a healthy workplace (Study 3). More specifically, through a combination of inductive and deductive scale development best practices, Study 1 informed our overall understanding of behaviours that leaders can engage in to create a healthy workplace in order to develop a scale to assess such leadership behaviours. The evidence for reliability and validity of the new HWLB measure was examined in Study 2. By developing a training program that focused on training leadership behaviours that were identified in Study 1, Study 3 provided a method and framework to help organizations foster psychologically healthy workplaces. Collectively, these studies add to the existing literature on leadership and psychologically healthy workplaces and the potential mechanisms through which such behaviours can contribute to our overall understanding of psychologically healthy workplaces and leadership.

These studies make a significant contribution the psychologically healthy workplace and leadership literature by addressing the calls for research systematically identifying components that contribute to a healthy workplace (Gilbert et al., 2017; Nielsen & Taris, 2019; Skakon et al., 2010) and examining the processes between leadership style and behaviours and direct report well-being, in order to guide intervention development (Skakon et al., 2010).

Theoretically, these studies drew on the Conservation of Resources Theory (Hobfoll, 1998; Hobfoll & Shirom, 2001), the Job Demands Resource Model (Demerouti et al., 2001), and the Effort-Reward Imbalance Model (Siegrist, 2001), incorporating them into the leadership (e.g., Bass 1985; Graen, 1976) and psychologically healthy workplace (e.g., Grawitch et al Kelloway & Day, 2005) literatures. Specifically, findings from Study 2 demonstrated that leaders healthy workplace leadership behaviours could act as resources for employees given that they are related to employees' well-being in terms of stress, strain, trust in leader, and job satisfaction.

Although Study 3 was not able to demonstrate significant increases in direct reports well-being as a result of the training, the results were trending in the right direction (e.g.,  $p = .05$  for strain). These results might be influenced by direct reports completing surveys only two months apart and immediately at the end of their leaders training program. Overall, these findings still provide some evidence that psychologically healthy workplaces and leaders can play a role in acting as resources for employees and their well-being. These findings also contribute to the discussion around leadership and employee well-being (Nielsen & Taris, 2019) and the calls for research on how leadership training may influence employee well-being (Kelloway & Barling, 2010).

Although a few researchers have identified components of a healthy workplace (e.g., Kelloway & Day, 2005), the HWLB subscales are the first validated measures to explicitly measure specific leadership behaviours that might contribute to a healthy workplace. Such a measure is fundamental in progressing healthy workplace research given the emphasis that has been placed on the role of a leader in creating a psychologically healthy workplace (e.g., Nielsen, 2014) and the need to identify specific mechanisms, processes, and characteristics that make up good leadership (Westerlund et al., 2010), which consequently influences employees well-being and fostering a healthy workplace (Nielsen & Taris, 2019; Skakon et al., 2010). For instance, the HWLB subscales can serve as an appropriate measure to assess baseline levels of Healthy Workplace Leadership Behaviors in organizations, among teams, and among individual leaders interested in fostering a psychologically healthy workplace, and consequently employee well-being. More specifically, this measure builds on components of a healthy workplace and leadership styles by measuring specific tangible leadership behaviours that leaders can engage in and develop in order to promote a healthy workplace and employee well-being.

Some of the behaviours identified in these studies are similar to competencies previously identified in the literature (e.g., Communication; Feedback; Donaldson-Feilder et al., 2008; St-Hilaire et al., 2018). However, the Promoting a Healthy Workplace subscale behaviours have not been explicitly specified in previous models of leadership and occupational health. Therefore, the Promotion of a Healthy Workplace subscale (e.g., modeling, promoting initiatives and policies) may be of particular value to the literature. This suggestion is further substantiated by Study 2 results given that the Promote a Healthy Workplace subscale was the only subscale to uniquely predict employee outcomes, and was able to uniquely predict employee outcomes beyond transformational leadership and individualized consideration. It also was the only area that direct reports identified as their leader demonstrating significant improvements in Study 3. Therefore, although these studies demonstrated the utility of the HWLB subscales, future research may consider the utility of the Promotion of a Healthy Workplace subscale on its own as a measure of leadership behaviours that could contribute to a healthy workplace.

Furthermore, although the intent of the scale development process was to identify specific leadership behaviours, an examination of the final items suggests that some items may lack specificity or contain elements of tautology between the subscale construct and item (e.g., ‘my leader is supportive’). The labelling of subscales has been highlighted as a particularly challenging when the scale development process consists of an inductive approach (e.g., Butler, 1991; Hinkin, 1998). Through the combination of Study 1 and Study 2, the initial item pool for each subscale was reduced to four items via statistics and theory. Given this approach, it is possible that some of the more specific behavioural items may have been deleted. As a result, general items such as “my leader is supportive” might be answered similarly across participants and result in less variance (Hinkin 1998), which could potentially influence the utility of the

scale, particularly when assessing change over time, such as in Study 3. It is possible that having items with even more specific behaviours would allow leaders and direct reports to more accurately assess the behaviour and avoid the possibility of assessing more generally. However, previous competency frameworks only consist of behaviours and have not attempted to develop these frameworks into a scale to assess such behaviours. Moreover, the lengthy nature of these frameworks would make them very challenging to use in research and training (Nielsen & Taris, 2019). Therefore, the HWLB subscales are the first validated measures to assess specific leadership behaviours that might contribute to a healthy workplace and they provide a great basis for future scale development work and for training leaders.

### **Overall Conclusion**

Ultimately, this study provided some evidence to increase our knowledge in terms of thinking about improving healthy workplaces and employee well-being in terms of leadership behaviours. This study demonstrated the utility of the HWLB scale given that it can predict employee outcomes over and above measures of transformational leadership and it can be used as a valid way to assess leadership development and intervention effectiveness. Indeed, this study did provide preliminary evidence to suggest that Healthy Workplace Leadership Behaviours could potentially be trained via an intervention program. This study contributes to the literature because no study to date has examined the effect of an intervention program in training healthy workplace leadership behaviours. Given that organizations and leaders have felt challenged with it comes to building psychologically healthy workplaces (e.g., Grawitch et al., 2009) and considering occupational health and safety continues to be an area of priority for policy makers, leaders, and employees (Day, Penney, Hartling, 2018; Shea et al., 2016), these studies have practical implications for organizations interested in promoting a psychologically

healthy workplace. Finally, this study also addressed the calls for defining what ‘good’ leadership behaviours are that can contribute to employee well-being (Nielsen & Taris, 2019), well-designed occupational health interventions (e.g., Cox, 1993; Kelloway & Barling, 2010; National Institute for Occupational Safety and Health, 1996), interventions on promoting desirable leadership behaviours (Nielsen & Taris, 2019), and longitudinal research within occupational health psychology (Kelloway & Francis, 2013).



### References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In J. Kuhl & J. Beckmann (Eds.), *Action-control: From cognition to behaviour* (pp. 11–39). Heidelberg: Springer.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50, 179-211
- Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: a review and agenda for future research. *Journal of Occupational Health Psychology*, 5(2), 278-308.
- American Psychological Association (2009). *Creating a Psychologically Healthy Workplace*. from <http://www.apaexcellence.org/resources/creatingahealthyworkplace/>
- American Psychological Association (2016). *American Psychological Association: 2016 Work and Well-being Survey*, from <http://www.apaexcellence.org/assets/general/2016-work-and-wellbeing-survey-results.pdf>
- Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., & McKee, M. C. (2007). Transformational leadership and psychological well-being: the mediating role of meaningful work. *Journal of Occupational Health Psychology*, 12(3), 193-203.
- Avey, J. B., Wernsing, T. S., & Palanski, M. E. (2012). Exploring the process of ethical leadership: The mediating role of employee voice and psychological ownership. *Journal of Business Ethics*, 107(1), 21-34.
- Avolio B. J. & Bass, M. M. (1991). *The full range leadership development: Basic and advanced manuals*. Ball, Avolio, and Associates, Binghamton, NY.

- Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., & May, D. R. (2004). Unlocking the mask: A look at the process by which authentic leaders impact follower attitudes and behaviors. *The Leadership Quarterly*, *15*(6), 801-823.
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. (2009). A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *The Leadership Quarterly*, *20*(5), 764-784.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309-328.
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170-180.
- Bakker, A. B., van Emmerik, H., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and occupations*, *33*(4), 464-489.
- Bakker, A. B., Westman, M., & Hetty van Emmerik, I. J. (2009). Advancements in crossover theory. *Journal of Managerial Psychology*, *24*(3), 206-219.
- Baldwin, T. T., Ford, J. K., & Blume, B. D. (2009). Transfer of training 1988–2008: an updated review and agenda for future research. In G. P. Hodgkinson & J. K. Ford (Eds.), *International review of industrial and organizational psychology* (pp. 41-70). Wiley Blackwell.
- Bandura, A. J. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Banks, G. C., McCauley, K. D., Gardner, W. L., & Guler, C. E. (2016). A meta-analytic review of authentic and transformational leadership: A test for redundancy. *The Leadership Quarterly*, *27*(4), 634-652.

- Barling, J., Christie, A., & Hopton, C. (2011). Leadership, In S. Zedick (Eds.), *Handbook of industrial and organizational psychology* (pp. 183-238). American Psychological Association, Washington, DC.
- Barling, J., Weber, T., & Kelloway, E. K. (1996). Effects of transformational leadership training on attitudinal and financial outcomes: A field experiment. *Journal of Applied Psychology, 81*(6), 827-832.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*, New York, NY: Free Press.
- Bass, B. M. (1996). *New paradigm of leadership: an inquiry into transformational leadership* Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences
- Bass, B. M. & Avolio, B. J. (1997). *Full range leadership development. Manual for the multifactor leadership questionnaire*. Palo Alto, CA: Mind Garden.
- Bass, B. M., (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics, 18*(3), 19-36.
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public administration quarterly, 112*-121.
- Bass, B.M., Avolio, B.J. (1988). Transformational leadership, Charisma, and beyond. In Hunt, J.G., Baliga, B.R., Dachler, H.P., Schriesheim, C.A. (Eds.). *Emerging leadership vistas*, (pp. 29-49). Lexington, MA: Lexington Books.
- Benson, G. S. & Lawler, E. E. (2016). Employee involvement: Research foundations. In M. J. Grawitch & D. W. Ballard (Eds.). *The psychologically healthy workplace: Building a win-win environment for organizations and employees* (pp. 31-33). Washington, DC: American Psychological Association.

- Berson, Y., & Avolio, B. J. (2004). Transformational leadership and the dissemination of organizational goals: A case study of a telecommunication firm. *The leadership quarterly, 15*(5), 625-646.
- Bliese, P. D., & Jex, S. M. (2002). Incorporating a multilevel perspective into occupational stress research: Theoretical, methodological, and practical implications. *Journal of Occupational Health Psychology, 7*(3), 265-276.
- Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of training: A meta-analytic review. *Journal of Management, 36*(4), 1065-1105.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.
- Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes, 97*(2), 117-134.
- Browne, J. H. (2000). Benchmarking HRM practices in healthy work organizations. *American Business Review, 18*(2), 55-61.
- Brun, J. P., & Dugas, N. (2008). An analysis of employee recognition: Perspectives on human resources practices. *The International Journal of Human Resource Management, 19*(4), 716-730.
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology, 14*(3), 389-405.
- Carmeli, A., Sheaffer, Z., Binyamin, G., Reiter-Palmon, R., & Shimoni, T. (2014). Transformational leadership and creative problem-solving: The mediating role of psychological safety and reflexivity. *The Journal of Creative Behavior, 48*(2), 115-135.

- Casimir, G., Waldman, D. A., Bartram, T., & Yang, S. (2006). Trust and the relationship between leadership and follower performance: Opening the black box in Australia and China. *Journal of Leadership & Organizational Studies*, 12(3), 68-84.
- Catano, V. M., & Morrow Hines, H. (2016). The influence of corporate social responsibility, psychologically healthy workplaces, and individual values in attracting millennial job applicants. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 48(2), 142-154.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1(2), 245-276.
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods*, 4(1), 62-83.
- Colquitt, J. A., LePine, J. A., & Noe, R. A. (2000). Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology*, 85(5), 678-707.
- Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, 53(1), 39-52.
- Cooper, J., & Patterson, D. (2008). Should business invest in the health of its workers?. *International Journal of Workplace Health Management*, 1(1), 65-71.
- Cox, T. (1993). *Stress research and stress management: Translating Putting theory to work*. Sudbury: HSE Books.
- Crocker, L. & Algina, J. (2006). *Introduction to classical & modern test theory*. Holt, Rinehart and Winston Inc.

- Dahl-Jørgensen, C., & Saksvik, P. Ø. (2005). The impact of two organizational interventions on the health of service sector workers. *International Journal of Health Services*, 35(3), 529-549.
- Day, A. & Penney, S. A. (2017). Essential elements of organizational initiatives to improve workplace wellbeing. In C. Cooper & M. Leiter (Eds.), *Routledge Companion to Workplace Well-being* (pp. 314-331). Taylor & Francis.
- Day, A. L., Francis, L., Stevens, S., Hurrell, J. J., & McGrath, P. (2014). Improving employee health and work-life balance: developing and validating a coaching- based ABLE (achieving balance in life and employment) program). In C. Biron, R. J. Burke, & C. L. Cooper (Eds.), *Creating healthy workplaces: Stress reduction, improved well-being, and organizational effectiveness*. Burlington, VT: Gower Publishing Company.
- Day, A. Penney, S. A., & Hartling, N. (2018). The psychology, potential perils, and practice of leading healthy workplaces. *Organizational Dynamics*.
- Day, A., & Nielsen, K. (2017). What does our organization do to help our well-being? Creating healthy workplaces and workers. In N. Chmiel, F. Fraccaroli, & M. Sverke (Eds.), *An Introduction to Work and Organizational Psychology: An International Perspective* (295-314). Wiley Blackwell.
- Day, A., & Randell, K. D. (2014). Building a foundation for psychologically healthy workplaces and well-being. In A. Day, E. K. Kelloway, & J. J. Hurrell (Eds.), *Workplace well-being: How to build a psychologically healthy workplace* (pp. 3-26). West Sussex, United Kingdom: John Wiley & Sons.
- Day, D. V. (2001). Leadership development: A review in context. *Leadership Quarterly*, 11(4), 581-613.

- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499-512.
- Dimoff, J.K., Kelloway, E.K., & Burnstein, M.D. (2016). Mental health awareness training (MHAT): The development and evaluation of an intervention for workplace leaders. *International Journal of Stress Management, 23*(2), 167-189.
- Donaldson-Feilder, E., Yarker, J., & Lewis, R. (2008). Line management competence: the key to preventing and reducing stress at work. *Strategic HR Review, 7*(2), 11-16.
- Donaldson-Feilder, Munir, F. & Lewis, R. Leadership and employee well-being. In H. S. Leonard, R. Lewis, A. M. Freedman, & J. Passmore (Eds.), *The Wiley-Blackwell handbook of the psychology of leadership, change, and organizational development*, 155-173, West Sussex, United Kingdom, John Wiley & Sons.
- Dvir, T., Eden, D., Avolio, B. J., & Shamir, B. (2002). Impact of transformational leadership on follower development and performance: A field experiment. *Academy of Management Journal, 45*(4), 735-744.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350-383.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: contributions to perceived organizational support and employee retention. *Journal of Applied Psychology, 87*(3), 565-573.
- Elovainio, M., Kivimäki, M., & Helkama, K. (2001). Organizational justice evaluations, job control, and occupational strain. *Journal of Applied Psychology, 86*(3), 418.

- Epitropaki, O., & Martin, R. (2005). From ideal to real: a longitudinal study of the role of implicit leadership theories on leader-member exchanges and employee outcomes. *Journal of Applied Psychology, 90*(4), 659-676.
- Gilbert, M. H., Dagenais-Desmarais, V., & St-Hilaire, F. (2017). Transformational leadership and autonomy support management behaviors: The role of specificity in predicting employees' psychological health. *Leadership & Organization Development, 38*(2), 320-332.
- Gilbreath, B. (2004). Creating healthy workplaces: the supervisor's role. In C. Cooper & I. Robertson (Eds.), *International Review of Industrial and Organizational Psychology, Volume 19*. Chichester, UK: John Wiley & Sons, Ltd.
- Gilbreath, B., & Benson, P. G. (2004). The contribution of supervisor behaviour to employee psychological well-being. *Work & Stress, 18*(3), 255-266.
- Gill, R. (2002). Change management--or change leadership?. *Journal of Change Management, 3*(4), 307-318.
- Gillespie, N. A., & Mann, L. (2004). Transformational leadership and shared values: The building blocks of trust. *Journal of Managerial Psychology, 19*(6), 588-607.
- Godkin, L., Parayitam, S., & Natarajan, V. S. (2010). An Empirical Study of Attitudes toward Recognition among Civilian Municipal Employees in a US City. *Journal of Organizational Culture, Communication and Conflict, 14*(2), 51-59.
- Goldberg, D. P. (1972). *The detection of psychiatric morbidity by questionnaire*. London, UK: Maudsley Monograph, Oxford University Press.



- Graen, G. (1976). Role making process within complex organizations. In M. D. Dunnette (Ed.), *Handbook of industrial organizational psychology* (pp. 1201–1245). Chicago: Rand-McNally.
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-Member Exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6, 219–247.
- Grant-Vallone, E. J., & Donaldson, S. I. (2001). Consequences of work-family conflict on employee well-being over time. *Work & Stress*, 15(3), 214-226.
- Gravenkemper, S. (2016). Employee involvement: Practitioner perspective. In M. J. Grawitch & D. W. Ballard (Eds). *The psychologically healthy workplace: Building w win-win environment for organizations and employees* (pp. 35-58). Washington, DC: American Psychological Association.
- Grawitch, M. J., Ballard, D. W., & Erb, K. R. (2015). To Be or Not to Be (Stressed): The Critical Role of a Psychologically Healthy Workplace in Effective Stress Management. *Stress and Health*, 31(4), 264-273.
- Grawitch, M. J., Gottschalk, M., & Munz, D. C. (2006). The path to a healthy workplace: a critical review linking healthy workplace practices, employee well-being, and organizational improvements. *Consulting Psychology Journal: Practice and Research*, 58(3), 129-147.
- Grawitch, M. J., Ledford Jr, G. E., Ballard, D. W., & Barber, L. K. (2009). Leading the healthy workforce: The integral role of employee involvement. *Consulting Psychology Journal: Practice and Research*, 61(2), 122-135.

- Grawitch, M. J., Trares, S., & Kohler, J. M. (2007). Healthy workplace practices and employee outcomes. *International Journal of Stress Management*, 14(3), 275-293.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), 59-82.
- Gurt, J., Schwennen, C., & Elke, G. (2011). Health-specific leadership: Is there an association between leader consideration for the health of employees and their strain and well-being? *Work & Stress*, 25(2), 108-127.
- Hammer, L. B. & Demsky, C. A. (2014). Introduction to work-life balance. In A. Day, E. K. Kelloway, & J. J. Hurrell (Eds.), *Workplace well-being: How to build psychologically healthy workplaces* (pp. 95-116). West Sussex, UK: John Wiley & Sons.
- Hammer, L. B. & Zimmerman, K. L. (2011). Quality of work life. In S. Zedick (Eds.), *APA handbook of industrial and organizational psychology* (pp. 399-431). Washington, DC: American Psychological Association.
- Hammer, L. B., Kossek, E. E., Anger, W. K., Bodner, T., & Zimmerman, K. L. (2011). Clarifying work–family intervention processes: The roles of work–family conflict and family-supportive supervisor behaviors. *Journal of Applied Psychology*, 96(1), 134-150.
- Harms, P. D., Credé, M., Tynan, M., Leon, M., & Jeung, W. (2017). Leadership and stress: A meta-analytic review. *The Leadership Quarterly*, 28(1), 178-194.
- Hartling, N. (2018). *The LEAD program and the Effect of Leadership on Employee Well-Being*. (Unpublished doctoral dissertation). Saint Mary's University, Halifax, Canada.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press: New York, NY.

- Hernez-Broome, G., & Hughes, R. L. (2004). Leadership development: Past, present, and future. *People and Strategy*, 27(1), 24-32.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104-121.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E., & Shirom, A. (2001). Conservation of resources theory: Applications to stress and management in the workplace. In R.T. Golembiewski (Eds.), *Handbook of organizational behavior* (pp. 57-81). New York, NY: Dekker.
- Hoch, J. E., Bommer, W. H., Dulebohn, J. H., & Wu, D. (2016). Do Ethical, Authentic, and Servant Leadership Explain Variance Above and Beyond Transformational Leadership? A Meta-Analysis. *Journal of Management*, 44(2), 501-529.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Ilies, R., Morgeson, F. P., & Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: Understanding leader–follower outcomes. *The Leadership Quarterly*, 16(3), 373-394.
- Inness, M., Turner, N., Barling, J., & Stride, C. B. (2010). Transformational leadership and employee safety performance: A within-person, between-jobs design. *Journal of Occupational Health Psychology*, 15(3), 279-290.
- Jiménez, P., Winkler, B., & Dunkl, A. (2016). Creating a healthy working environment with leadership: The concept of health-promoting leadership. *The International Journal of Human Resource Management*, 1-19.

- Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: a meta-analytic test of their relative validity. *Journal of applied psychology, 89*(5), 755.
- Jung, D. I., & Avolio, B. J. (2000). Opening the black box: An experimental investigation of the mediating effects of trust and value congruence on transformational and transactional leadership. *Journal of Organizational Behavior, 21*(8), 949-964.
- Kalef, L., Rubin, C., Malachowski, C., & Kirsh, B. (2016). Employers' Perspectives on the Canadian National Standard for Psychological Health and Safety in the Workplace. *Employee Responsibilities and Rights Journal, 28*(2), 101-112.
- Kazi, A., & Haslam, C. O. (2013). Stress management standards: a warning indicator for employee health. *Occupational Medicine, 63*(5), 335-340.
- Kelloway, E. K. (2014). *Using Mplus for Structure equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.
- Kelloway, E. K., & Barling, J. (2010). Leadership development as an intervention in occupational health psychology. *Work & Stress, 24*(3), 260-279.
- Kelloway, E. K., & Day, A. L. (2005). Building healthy workplaces: what we know so far. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 37*(4), 223-235.
- Kelloway, E. K., & Francis, L. (2013). Longitudinal research and data analysis. In R. Sinclair, M. Wang, & L. E. Tetrick (Eds.), *Research methods in occupational health psychology* (pp. 374-394) New York, NY: Taylor and Francis.
- Kelloway, E. K., Barling, J., & Helleur, J. (2000). Enhancing transformational leadership: The roles of training and feedback. *Leadership & Organization Development Journal, 21*(3), 145-149.

- Kelloway, E. K., Mullen, J., & Francis, L. (2006). Divergent effects of transformational and passive leadership on employee safety. *Journal of Occupational Health Psychology, 11*(1), 76-86.
- Kelloway, E. K., Penney, S. A., & Dimoff, J. (2017). Leading the Psychologically Healthy Workplace: The RIGHT Way. In E. K. Kelloway, K. Nielsen, & J. K. Dimoff. (Eds.), *Leadership and occupational health and safety* (pp. 113-128). Wiley Blackwell.
- Kelloway, E. K., Teed, M., & Prosser, M. (2008). Leading to a healthy workplace. In A. Kinder, R. Hughes, & C. L. Cooper. (Eds.), *Employee well-being support: A workplace resource* (pp. 25-38). John Wiley & Sons.
- Kelly, R. C. & Carter, M. (2016). Health and safety: Perspectives from the field. In M. J. Grawitch & D. W. Ballard (Eds.). *The psychologically healthy workplace: Building a win-win environment for organizations and employees* (pp. 231-255). Washington, DC: American Psychological Association.
- Kirchmeyer, C. (2000). Work-life initiatives: Greed or benevolence regarding workers' time? In C. L. Cooper & D. M. Rousseau (Eds.), *Trends in organizational behavior: Time in organizational behavior* (Vol. 7, pp. 79 –93). Chichester, United Kingdom: Wiley.
- Kirkpatrick, D. (1996). Revisiting Kirkpatrick's four-level model. *Training & Development, 50*(1), 54-57.
- Konczak, L. J., Stelly, D. J., & Trusty, M. L. (2000). Defining and measuring empowering leader behaviors: Development of an upward feedback instrument. *Educational and Psychological Measurement, 60*(2), 301-313.
- Kruger, R. A. & Casey, M. (2009). *Focus groups: A practical guide for applied research*. Thousand Oaks, CA: Sage Publications.

- Kuhnert, K. (2018). Leadership Developmental Level and Performance: An Investigation of Gender Differences. *Journal of Adult Development, 25*(3), 1-8.
- Kuoppala, J., Lamminpää, A., Liira, J., & Vainio, H. (2008). Leadership, job well-being, and health effects—a systematic review and a meta-analysis. *Journal of Occupational and Environmental Medicine, 50*(8), 904-915.
- Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology, 102*(12), 1686-1718.
- LeBlanc, M. M., & Kelloway, E. K. (2002). Predictors and outcomes of workplace violence and aggression. *Journal of Applied Psychology, 87*(3), 444-453.
- Leiter, M. P., Laschinger, H. K. S., Day, A., & Oore, D. G. (2011). The impact of civility interventions on employee social behavior, distress, and attitudes. *Journal of Applied Psychology, 96*(6), 1258-1274.
- Liu, J., Siu, O. L., & Shi, K. (2010). Transformational leadership and employee well-being: The mediating role of trust in the leader and self-efficacy. *Applied Psychology, 59*(3), 454-479.
- Lloyd, P. J., & Foster, S. L. (2006). Creating healthy, high-performance workplaces: Strategies from health and sports psychology. *Consulting Psychology Journal: Practice and Research, 58*(1), 23-39.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.

- Loughlin, C. & Mercer, D. (2014). Designing Healthy Workplaces. In A. Day, E. K. Kelloway, & J. J. Hurrell (Eds.), *Workplace well-being: How to build a psychologically healthy workplace* (pp. 299-323). West Sussex, UK: John Wiley & Sons.
- Loughlin, C.A., Hepburn, C.G., & Barling, J. (1995). Changing future managers' attitudes toward occupational health and safety. In L.E. Tetrick & J. Barling (Eds.), *Changing employment relations: behavioral and social perspectives* (pp. 145-161). Washington, D.C.: American Psychological Association.
- Lounsbury, J. W., & Hoopes, L. L. (1986). A vacation from work: Changes in work and nonwork outcomes. *Journal of Applied Psychology, 71*(3), 392-401.
- Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety Stress Scales. (2nd. Ed.) Sydney: Psychology Foundation.
- Luthans, K. (2000). Recognition: a powerful, but often overlooked, leadership tool to improve employee performance. *Journal of Leadership & Organizational Studies, 7*(1), 31-39.
- Macik-Frey, M., Quick, J. C., & Nelson, D. L. (2007). Advances in Occupational Health: From a Stressful Beginning to a Positive Future. *Journal of Management, 33*(6), 809-840.
- Maertz, C. P., Griffeth, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior, 28*(8), 1059-1075.
- Mathieu, C., Neumann, C. S., Hare, R. D., & Babiak, P. (2014). A dark side of leadership: Corporate psychopathy and its influence on employee well-being and job satisfaction. *Personality and Individual Differences, 59*, 83-88.
- Mathieu, J. E., & Martineau, J. W. (1997). Individual and situational influences on training motivation. In J. C. Ford, S. W. J. Kowlooski, K. Kraiger, E. Salas & M. S. Teachout

- (Eds.), *Improving Training Effectiveness in Work Organizations* (pp. 193-222). New York, NY: Psychology Press.
- Mayo, A. (2000). The role of employee development in the growth of intellectual capital. *Personnel Review*, 29(4), 521-533.
- McCarthy, A., Darcy, C., & Grady, G. (2010). Work-life balance policy and practice: Understanding line manager attitudes and behaviors. *Human Resource Management Review*, 20(2), 158-167.
- McKee, M. C., Driscoll, C., Kelloway, E. K., & Kelley, E. (2011). Exploring linkages among transformational leadership, workplace spirituality and well-being in health care workers. *Journal of Management, Spirituality & Religion*, 8(3), 233-255.
- Mental Health Commission of Canada (2013). *Psychological health and safety in the workplace – Prevention, promotion, and guidance to staged implementation*. CAN/CSA-Z1003-13/BNQ9700-803/2013
- Mitchell, T. R., & Daniels, D. (2000). Motivation. In W. Borman, D. Illgen, & R. Klimoski (Eds.) *Handbook of psychology: Vol. 12 Industrial/organizational psychology* (pp. 225-254). Hoboken, NJ: John Wiley & Sons, Inc.
- Mullen, J. E., & Kelloway, E. K. (2009). Safety leadership: A longitudinal study of the effects of transformational leadership on safety outcomes. *Journal of Occupational and Organizational Psychology*, 82(2), 253-272.
- Mullen, J., & Kelloway, E. K. (2011). Occupational health and safety leadership. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 357-372). Washington, DC: American Psychological Association.
- National Institute for Occupational Safety and Health (NIOSH). (1996). National occupational



- research agenda. Atlanta, GA: U.S. Public Health Service, Centers for Disease Control.  
Retrieved from <http://www.cdc.gov/niosh/nora/>
- Nelson, B. (2016). You get what you reward: A research-based approach to employee recognition. In M. J. Grawitch & D. W. Ballard (Eds). *The psychologically healthy workplace: Building a win-win environment for organizations and employees* (pp. 157-179). Washington, DC: American Psychological Association.
- Nielsen, K. (2014). Leadership and climate in a psychologically healthy workplace. In A. Day, E. K. Kelloway & J. H. Hurrell Jr. *Workplace well-being: How to build psychologically healthy workplaces* (pp. 226-244). West Sussex, United Kingdom: John Wiley & Sons.
- Nielsen, K., & Miraglia, M. (2017). What works for whom in which circumstances? On the need to move beyond the ‘what works?’ question in organizational intervention research. *Human Relations*, 70(1), 40–62.
- Nielsen, K., & Munir, F. (2009). How do transformational leaders influence followers' affective well-being? Exploring the mediating role of self-efficacy. *Work & Stress*, 23(4), 313-329.
- Nielsen, K., & Taris, T. W. (2019). Leading well: Challenges to researching leadership in occupational health psychology—and some ways forward. *Work & Stress*, 33(2), 107-118.
- Nielsen, K., Randall, R., Yarker, J., & Brenner, S. O. (2008). The effects of transformational leadership on followers’ perceived work characteristics and psychological well-being: A longitudinal study. *Work & Stress*, 22(1), 16-32.
- Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: Test of a model. *Personnel Psychology*, 39(3), 497-523.

- Penney, S. A. & Kelloway, E. K., & O'Keefe, D. F. (2015). Trait theories of leadership. In D. Murray, I. O'Boyle, & P. Cummins (Eds.), *Leadership in Sport*. New York, NY: Taylor & Francis.
- Pfeffer, J. (1994). *Competitive advantage through people: Unleashing the power of the work force*. Harvard Business Press.
- Piccolo, R. F., & Colquitt, J. A. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal*, 49(2), 327-340.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142.
- Richardson, H. A., & Vandenberg, R. J. (2005). Integrating managerial perceptions and transformational leadership into a work-unit level model of employee involvement. *Journal of Organizational Behavior*, 26(5), 561-589.
- Rollnick, S., Heather, N., Gold, R., & Hall, W. (1992). Development of a short 'readiness to change' questionnaire for use in brief, opportunistic interventions among excessive drinkers. *Addiction*, 87(5), 743-754.
- Ross, D. B., Exposito, J.A., & Kennedy, T. (2017). Stress and its relationship to leadership and a healthy workplace culture. In V. C. Bryan & J. L. Bird (Eds.), *Healthcare community synergism between patients, practitioners, and researchers*. Medical Information Science

- Roussin, C. J. (2008). Increasing trust, psychological safety, and team performance through dyadic leadership discovery. *Small Group Research*, 39(2), 224-248.
- Ryan, A. M., & Kossek, E. (2008). Work-life policy implementation: Breaking down or creating barriers to inclusiveness. *Human Resource Management*, 47(2), 295–310.
- Salanova, M., Llorens, S., Cifre, E., & Martínez, I. M. (2012). We need a hero! Toward a validation of the healthy and resilient organization (HERO) model. *Group & Organization Management*, 37(6), 785-822.
- Salas, E. & Weaver, S. J. (2016). Employee growth and development: Cultivating human capital. In M. J. Grawitch & D. W. Ballard (Eds). *The psychologically healthy workplace: Building a win-win environment for organizations and employees* (pp. 59-86). Washington, DC: American Psychological Association.
- Sauter, S. L., Murphy, L. R. & Hurrell, Jr., J. J. (1990). Prevention of work-related psychological disorders: A national strategy proposed by the National Institute for Occupational Safety and Health (NIOSH). *American Psychologist*, 45, 1146– 1158.
- Scarpello, V., & Campbell, J. P. (1983). Job satisfaction: Are all the parts there? *Personnel Psychology*, 36(3), 577–600.
- Schaufeli, W. B., & Bakker, A. B. (2003). Utrecht work engagement scale: Preliminary manual. *Occupational Health Psychology Unit, Utrecht University, Utrecht*.
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. F. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health: A transdisciplinary approach* (pp. 43-68). New York, NY, US: Springer Science + Business Media.

- Schriesheim, C. A., Castro, S. L., & Cogliser, C. C. (1999). Leader-member exchange (LMX) research: A comprehensive review of theory, measurement, and data-analytic practices. *The Leadership Quarterly, 10*(1), 63-113.
- Seltzer, J., Numerof, R. E., & Bass, B. M. (1989). Transformational leadership: Is it a source of more burnout and stress? *Journal of Health and Human Resources Administration, 17*(4), 174-185.
- Shea, T., De Cieri, H., Donohue, R., Cooper, B., & Sheehan, C. (2016). Leading indicators of occupational health and safety: An employee and workplace level validation study. *Safety Science, 85*, 293-304.
- Shirey, M. R. (2006). Authentic leaders creating healthy work environments for nursing practice. *American Journal of Critical Care, 15*(3), 256-267.
- Siegrist, J. (2001). A theory of occupational stress. In J. Dunham (Ed.), *Stress in the workplace: Past, present, and future* (pp. 52-66). Philadelphia, PA: Wurr.
- Skakon, J., Nielsen, K., Borg, V., & Guzman, J. (2010). The impact of leaders on employee stress and affective well-being: A systematic review of three decades of empirical research. *Work & Stress, 24*, 107-139.
- Smith, B. N., Montagno, R. V., & Kuzmenko, T. N. (2004). Transformational and servant leadership: Content and contextual comparisons. *Journal of Leadership & Organizational Studies, 10*(4), 80-91.
- Sosik, J. J., & Godshalk, V. M. (2000). Leadership styles, mentoring functions received, and job-related stress: a conceptual model and preliminary study. *Journal of Organizational Behavior, 21*(4), 365-390.

St-Hilaire, F., Gilbert, M. H., & Brun, J. P. (2019). What if subordinates took care of managers' mental health at work?. *The International Journal of Human Resource*

*Management*, 30(2), 337-359.

Stone, R. D. (2016). Employee growth and development: Perspectives from the field. In M. J. Grawitch & D. W. Ballard (Eds). *The psychologically healthy workplace: Building a win-win environment for organizations and employees* (pp. 87-110). Washington, DC:

American Psychological Association.

Sy, T., Côté, S., & Saavedra, R. (2005). The contagious leader: impact of the leader's mood on the mood of group members, group affective tone, and group processes. *Journal of Applied Psychology*, 90(2), 295-305.

Taylor, P. J., Russ-Eft, D. F., & Chan, D. W. (2005). A meta-analytic review of behavior modeling training. *Journal of Applied Psychology*, 90(4), 692-709.

Tepper, B. J. (2007). Abusive supervision in work organizations: Review, synthesis, and research agenda. *Journal of Management*, 33(3), 261-289.

Tepper, B. J., Duffy, M. K., & Shaw, J. D. (2001). Personality moderators of the relationship between abusive supervision and subordinates' resistance. *Journal of Applied Psychology*, 86(5), 974-983.

Tetrick, L. E. & Haimann, C. R. (2014). Employee recognition. In A. Day, E. K. Kelloway & J. H. Hurrell Jr. *Workplace well-being: How to build psychologically healthy workplaces* (pp. 161-174). West Sussex, United Kingdom: John Wiley & Sons.

Tetrick, L. E. & Peiro, J. M. (2016). Health and safety: Prevention and promotion. In M. J. Grawitch & D. W. Ballard (Eds). *The psychologically healthy workplace: Building a*

- win-win environment for organizations and employees* (pp. 199-229). Washington, DC: American Psychological Association.
- Tetrick, L. E., & Quick, J. C. (2011). Overview of occupational healthy psychology; Public health in occupational settings. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 3-20). Washington, DC: American Psychological Association.
- Ting, S., & Hart, E. W. (2004). Formal coaching. In C.D. McCauley, E.V. & Velsor (Eds.), *The Center for Creative Leadership handbook of leadership development* (116-150). San Francisco, CA: Jossey-Bass
- Tsutsumi, A., Takao, S., Mineyama, S., Nishiuchi, K., Komatsu, H., & Kawakami, N. (2005). Effects of a supervisory education for positive mental health in the workplace: a quasi-experimental study. *Journal of Occupational Health*, 47(3), 226-235.
- Van de Ven, A. H. & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of Management Review*, 20, 510–540.
- Van Dierendonck, D., Haynes, C., Borrill, C., & Stride, C. (2004). Leadership behavior and subordinate well-being. *Journal of Occupational Health Psychology*, 9(2), 165.
- Van Quaquebeke, N., & Eckloff, T. (2010). Defining respectful leadership: What it is, how it can be measured, and another glimpse at what it is related to. *Journal of Business Ethics*, 91(3), 343-358.
- Waterworth, P., Pescud, M., Chappell, S., Davies, C., Roche, D., Shilton, T., ... & Rosenberg, M. (2016). Culture, management and finances as key aspects for healthy workplace initiatives. *Health Promotion International*, 1-11.

- Westerlund, H., Nyberg, A., Bernin, P., Hyde, M., Oxenstierna, G., Jäppinen, P., ... & Theorell, T. (2010). Managerial leadership is associated with employee stress, health, and sickness absence independently of the demand-control-support model. *Work*, 37(1), 71-79.
- Wirtz, N., Rigotti, T., Otto, K., & Loeb, C. (2017). What about the leader? Crossover of emotional exhaustion and work engagement from followers to leaders. *Journal of occupational health psychology*, 22(1), 86-97.
- Yammarino, F. J., & Dubinsky, A. J. (1994). Transformational leadership theory: Using levels of analysis to determine boundary conditions. *Personnel Psychology*, 47(4), 787-811.
- Zaccaro, S.J. & Klimoski, R. J. (2001). The nature of organizational leadership: Understanding the performance imperatives confronting today's leaders. Jossey-Bass, San Francisco, CA.
- Zacharatos, A., Barling, J., & Iverson, R. D. (2005). High-performance work systems and occupational safety. *Journal of Applied Psychology*, 90(1), 77-93.

**Appendixes**  
**Appendix A**  
**Interview/Focus Group Guide**  
**Fostering Healthy Workplaces through Leadership**  
**REB # 16-191**

Samantha Penney & Dr. Arla Day  
 Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3  
 Phone: 807-473-6077; email: Samantha.Penney@smu.ca

---

### **Informed Consent**

#### **Demographics**

- Age
- Occupation
- Industry
- Education
- Number of Years in the Workforce
- Number of Years in a Leadership Role

A **healthy workplace** can be described as “an organization dedicated to promoting and supporting the physical and psychological health and well-being of their employees”<sup>1</sup> as well as “organizational objectives for profitability and productivity”<sup>2</sup>.

#### **Healthy Workplaces**

1. Please think about the behaviours or things that leaders can do to contribute to a **healthy workplace**.
  - a. In your opinion, what are the behaviours and things leaders can do, that you think contributes to a healthier workplace.
  - b. From your list, what do you think are the most important behaviours or things that contribute to a healthy workplace?
2. In looking at your list, think about a specific example or a specific time when your leader, or you as a leader did something to contribute to or promote a healthy workplace.
  - a. What did this leader do (or what did you do) to promote a healthy workplace?
  - b. Was it successful? If yes, why? If no, why not?

#### **Unhealthy Workplaces**

3. Please think about the behaviours or things that leaders can do to contribute to an **unhealthy workplace**.

---

<sup>1</sup> Day, A. & Randell, K. (2014). Building the foundation of psychologically healthy workplaces and well-being. In A. Day, E. K. Kelloway, & J. J. Hurrell (Eds.), *Workplace well-being: How to build psychologically healthy workplaces* (pp.1-26). West Sussex, UK: John Wiley & Sons

<sup>2</sup> Sauter, S. L., Lim, S. Y., & Murphy, L. R. (1996). Organizational health: A new paradigm for occupational stress research at NIOSH. *Japanese Journal of Occupational Mental Health*, 4(4), 248-254.



- a. In your opinion, what are the behaviours and things that leaders do, that you think contributes to an unhealthy workplace.
  - b. From your list, what do you think are the most detrimental behaviours or things that contribute to an unhealthy workplace?
4. In looking at your list, think about a specific example or a specific time when your leader, or you as a leader did something that contributed to an unhealthy workplace.
    - a. What did this leader do (or what did you do) to detract from a healthy workplace?
    - b. Was it problematic? If yes, why? If no, why not?

### **Concluding Remarks**

5. Is there anything else you would like to add?

**Thank you for your participation!**

**Appendix B  
Theming Activity  
Fostering Healthy Workplaces through Leadership  
REB # 16-191**

Samantha Penney & Dr. Arla Day  
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3  
Phone: 807-473-6077; email: Samantha.Penney@smu.ca

---

**Instructions:** Looking at the list of behaviours and things leaders can do that can contribute to a healthy workplace, please try to group these behaviours and things into themes/categories using the table below. Please use as many themes as you deem appropriate.

<b>Theme Title:</b>	<b>Theme Title:</b>	<b>Theme Title:</b>	<b>Theme Title:</b>	<b>Theme Title:</b>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

---

<b>Behaviours:</b>	<b>Behaviours:</b>	<b>Behaviours:</b>	<b>Behaviours:</b>	<b>Behaviours:</b>
_____	_____	_____	_____	_____

---

Comments and Notes:

**Thank you for your participation!**

**Appendix C**  
**Item Writing**  
**Fostering Healthy Workplaces through Leadership**  
**REB # 16-191**

Samantha Penney & Dr. Arla Day  
 Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3  
 Phone: 807-473-6077; email: Samantha.Penney@smu.ca

---

I am developing a measure to assess leadership behaviours that can contribute to a healthy workplace. I would like your assistance in generating items for the 5 subscales.

**Instructions:**

- I have included the subscales and brief definitions below for each of the subscales
- Please develop 5-7 items for each of the subscales

**Healthy Workplace Leadership Behaviours Scale Item Writing**

<b>Subscale and Definition</b>	<b>Item (5 – 7 each)</b>
	My leader...
<b>Supports Employees</b>	<b>1.</b>
<i>Supports and genuinely cares</i>	<b>2.</b>
<i>about employees as individuals.</i>	<b>3.</b>
<i>Being supportive includes being</i>	<b>4.</b>
<i>accessible to employees and</i>	<b>5.</b>
<i>available to assist with solving</i>	<b>6.</b>
<i>problems.</i>	<b>7.</b>
<b>Communicate Effectively</b>	<b>1.</b>
<i>Effectively communicates with</i>	<b>2.</b>
<i>employees. Effectively</i>	<b>3.</b>
<i>communicating includes</i>	<b>4.</b>
<i>communicating information and</i>	<b>5.</b>
<i>expectations, and actively</i>	<b>6.</b>
<i>listening to employees.</i>	<b>7.</b>
<b>Provide Feedback</b>	<b>1.</b>
<i>Provides positive and negative</i>	<b>2.</b>
<i>feedback to employees. Feedback</i>	<b>3.</b>
<i>includes encouragement and</i>	<b>4.</b>
<i>recognition for positive</i>	<b>5.</b>
<i>performance and negative</i>	<b>6.</b>
<i>feedback and discipline for poor</i>	<b>7.</b>
<i>performance.</i>	

**Involve and Develop** 1.  
*Invests and develops employees* 2.  
*through coaching, providing* 3.  
*professional development* 4.  
*opportunities, training,* 5.  
*resources, and involving them in* 6.  
*decisions through seeking* 7.  
*opinions and feedback.*

**Promote a Psychologically** 1.  
**Healthy Workplace** 2.  
*Promotes a psychologically* 3.  
*healthy workplace through* 4.  
*modeling, enforcing, and* 5.  
*encouraging healthy workplace* 6.  
*behaviours inside and outside of* 7.  
*work and the use of healthy*  
*workplace policies.*

**Appendix D**  
**Sorting Activity**  
**Fostering Healthy Workplaces through Leadership**  
**REB # 16-191**

Samantha Penney & Dr. Arla Day  
Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3  
Phone: 807-473-6077; email: Samantha.Penney@smu.ca

---

I am developing items to assess leadership behaviours that can contribute to a healthy workplace.

**Instructions:** Please indicate which construct each of the following items is associated with by putting a check in the appropriate column. If you feel that an item fits more than one construct, please indicate this with multiple checks in the appropriate columns. Please refer to the provided definitions as you complete the task. If you feel that an item doesn't fit any of the constructs, please select 'NA' or provide a comment. If you see items that you think are redundant please make a comment in the column section.

Additionally, please provide comments on readability, clarity, accuracy, grammar, and relevance (e.g., suggested revisions/deletions). Any general comments can be provided at the end.

*Presented Definitions of Constructs (i.e., subscales)*

*Presented items*

*Presented a section for general comments*

**Appendix E**  
**Item Review**  
**Fostering Healthy Workplaces through Leadership**  
**REB # 16-191**

Samantha Penney & Dr. Arla Day  
 Saint Mary's University, 923 Robie Street, Halifax, NS B3H 3C3  
 Phone: 807-473-6077; email: Samantha.Penney@smu.ca

---

**Healthy Workplace Leadership Behaviours - Final Sampling of Items**

Please feel free to provide feedback on readability, clarity, accuracy, grammar, and relevance (e.g., suggested revisions/deletions) as well as any general comments.

**Healthy Workplace Leadership Behaviours: Leadership behaviours that contribute to a healthy workplace**

**Supports Employees**

*Supports and genuinely cares about employees as individuals by:*

- *Treating and getting to know employees as individuals*
  - *Being fair, supportive, and respectful*
  - *Accessible to employees*
  - *Available to assist with problems.*
1. My leader asks me how I am doing.
  2. My leader takes time to get to know me.
  3. My leader genuinely cares about my well-being.
  4. My leader is supportive.
  5. My leader supports employees by being fair and respectful to all employees.
  6. My leader is present when I need his/her assistance.
  7. My leader supports me through assisting me in solving problems.

**Communicate Effectively**

*Effectively communicates with employees by:*

- *communicating relevant work-related information and expectations*
  - *actively listening to employees.*
1. My leader uses more than one method to communicate important messages to me.
  2. My leader clearly communicates his/her expectations to me.
  3. My leader actively listens to me when communicating with me.
  4. My leader communicates clearly.
  5. My leader checks that I understand his/her message when communicating.
  6. My leader communicates clear explanations for organizational decisions.

**Provides Feedback**

*Provides positive and negative constructive feedback to employees by:*

- *providing encouragement and recognition for positive performance*
  - *providing constructive negative feedback and discipline for poor performance (when necessary) in a respectful manner.*
1. My leader provides me with regular feedback.
  2. My leader provides me with timely feedback on deliverables.
  3. My leader provides me with positive feedback by acknowledging me for my work.
  4. My leader provides me with feedback by rewarding me for good work.
  5. My leader frames feedback to me in a constructive way.
  6. My leader provides me with negative feedback when necessary.

**Involves & Develops Employees**

*Involves, invests in, and develops employees by:*

- *providing coaching and mentoring*
  - *providing professional development opportunities, training, and resources*
  - *involving employees in decisions by seeking and integrating their opinions and suggestions.*
1. My leader invests his/her time coaching me.
  2. My leader assists with my development by coaching and mentoring me.
  3. My leader provides me with opportunities to learn and grow.
  4. My leader provides me with on-the-job training.
  5. My leader seeks my opinion and input on decisions.
  6. My leader provides me with opportunities to give suggestions.
  7. My leader involves me in decisions.

**Promotes a Psychologically Healthy Workplace**

*Promotes a psychologically healthy workplace by:*

- *modeling and encouraging healthy workplace behaviours*
  - *promoting healthy workplace policies, practices, and safety standards.*
1. My leader promotes a healthy workplace.
  2. My leader promotes safety standards.
  3. My leader endorses healthy workplace initiatives and policies.
  4. My leader encourages employees to participate in healthy workplace initiatives.
  5. My leader models healthy workplace behaviours.
  6. My leader participates in healthy workplace initiatives.
  7. My leader is committed to minimizing stress and strain in the workplace.
  8. My leader aims to prevent mistreatment at work (e.g., harassment, bullying and violence).

**Appendix F**  
**Item Themes**  
**Fostering Healthy Workplaces through Leadership**

---

**Supports Employees**

- cares about their staff
- develops personal level relationships
- shows they actually care about employees
- makes employees feel important
- treats employees with respect
- is respectful
- fairness (towards employees and when allocating resources)
- fairness (who gets invested, and who gets opportunities)
- makes employees feel comfortable and safe
- take time to find out about people and show an interest in them and get to know them (e.g., spouse, children)
- takes genuine interest in getting to know staff and what they are working on and what their needs are
- takes genuine interest in getting to know staff as individuals and spends meaningful time with them
- takes genuine interest in the people that they are working with
- personal engagement regarding individual's personal lives (e.g., spends Friday afternoons going around and talking to employees about their non-work lives)
- supports employees
- supports employee decisions
- engaged in what employees have on their plate and checks in with them
- instills a sense of team and getting to know each other as people
- promotes team building
- promotes team togetherness, makes sure teams function well
- gives employees facetime
- available to employees
- accessible to employees
- approachable and present
- is present and there for staff
- open door policy (employees feel they can talk to them about anything and that there won't be repercussions)
- approachable/open door policy – employees feel comfortable speaking to the leader
- present (comes by and asks if everything is okay, and follows through on what is not okay)
- addresses problems in a timely, fair, and consistent matter in terms of discipline and decisions
- addresses problems immediately, involving all parties, and discussing options to resolve the problem.
- resolves conflicts



- manages conflict
- Takes action based on employee concerns
- solves problems efficiently
- actively involved in critical thinking and problem solving
- Responds quickly to questions, demands, concerns
- finds resolutions to problems as quickly as possible

### **Communicates Effectively**

- communicates openly
- communicates effectively
- engages in very good and clear communication with employees provides reasons for doing things
- provides clear communication about goals to help guide decisions
- remains positive and supportive through open communication and transparency
- talks to employees and clarifies their role and responsibilities
- listens to employee concerns and needs
- actively listens to employees
- listens to what people are saying or trying to say
- actively listens (e.g., ignores screens and distractions)
- actively listens and acts on employees comments and suggestions
- provides employees with clear expectations
- sets clear goals, identifies what they expect from their employees
- provides clear expectations of employees' roles so they know what is expected and what they will be evaluated on as well as priorities.
- clear expectations of what the job is and makes sure they have reviewed it with employees and reiterates it to them
- makes sure employees have a clear understanding of the manager/leader position
- holds employees accountable and is fair
- communicates the organization strategic plan and goals
- communicates openly about the organizational goals, expectations, and how roles apply
- communicates formally and informally - keeps employees updated on changes, regular meetings, letting employees know that is going on
- clearly communicates the purpose of the organization
- communicate a positive corporate image and the direction the company is going

### **Provides Feedback**

- gives constructive feedback
- gives feedback (both positive and negative)
- gives positive feedback
- provides regular feedback to staff about how their daily work fits into the overall strategic plan and goals
- encourages people when appropriate

- thanks people and acknowledges their work (e.g., informally acknowledge and appreciate that they are working late)
- recognizes employees
- rewards employees through recognition
- positively reinforces desirable behaviours so employees feel valued in the workplace
- recognizes positive employees and denounces negativity
- recognizes employees in a timely manner for things that they have done well
- recognizes good work (through various means one on one, official, and yearly awards – all have to be timely) praise and empower employees
- doesn't give blanket discipline (e.g., fire email out to all employees when it is really only one or two individuals; Do it individually)
- identifies individuals that create an unhealthy environment and takes a stand to do something about the problem employee
- gives direction and discipline in person
- disciplines employees in order to ensure fairness

### **Involves & Develops Employees**

- coaches and mentors
- invests in employees
- coaches employees for their career development goals
- provides career development opportunities
- provides professional development opportunities
- coaches employees and always has their eye out for talent or when people show an interest in skill in an area, give them opportunities in the area (e.g., projects) and see how it works out and if they have an interest in going further
- gives training and growth and development opportunities to employees
- invests in employees
- supports employees to help them find solution to problems (not necessarily giving them answers but walking them through it, asking them questions to see if they can figure it out themselves)
- encourages employees to learn from mistakes because we do make errors – provide a just culture (employees need to be accountable but need to realize are errors)
- gives all employees a voice
- includes all employees in decisions and discussion
- gets buy-in from employees on decisions
- asks/seeks feedback about workplace/workload/supports/expectations/issues/feedback and follows through on fixing issues
- requests feedback from employees regarding problems (listens, documents, and addresses such)
- seeks feedback and opinions from employees
- asks for and responds to feedback from employees
- seeks different perspectives
- requests employee feedback and input (and tries to apply it)
- listens to employee feedback

- listens to employees and provides opportunities for feedback and development of things they are trying to do as a leader
- takes advice from employees (i.e., go to them and find out what it is that makes their job work and what it is they need to get their job done; get feedback and input and use it)
- provides on-the-job training
- ensures employees have training and proper tools to do their job
- makes sure employees have the necessary resources to do their work
- provides employees with resources to do their job
- provides resources (equipment, information, etc.) to allow employees to do their jobs
- promotes resources
- communicates available resources
- promotes/provides job autonomy
- gives autonomy to do work and how it gets done
- gives employees autonomy to perform tasks (doesn't micromanage micromanaging)

### **Promotes a Psychologically Healthy Workplaces**

- promotes safety
- focuses on proactive reporting (safety)
- encourages physical safety (i.e., calls to say don't come to work because there is a snow storm)
- enforces a proactive reporting culture consistently
- promotes a safe and healthy workplace
- promotes positive mental health and well-being – through education
- puts physical & psychological health of employees first
- encourages physical health
- encourages employees to be physically active
- encourage employees to use the gym during hour long break
- supports employees with their wellness goals – supportive in work environment and outside of work
- supports and encourages health behaviours (e.g., encourages to take a walk at lunch) and not rewarded for unhealthy behaviours (e.g., working evenings, weekends, or though lunch)
- encourages recovery
- helps/encourages employees to achieve work life balance
- allows employees flexibility in time off for vacations and appointments
- is sympathetic to circumstances individuals have and their situations (i.e., what is going on at home or anything else that may impact them at work)
- sets good examples
- walking the talk
- leads by example
- leads by example and works with the team to do front line roles on occasion
- takes accountability for actions
- Does the right thing

- models ethical behaviour
  - behaves in a respectful manner (both at work and outside of work)
  - committed to fostering a healthy workplace
  - models behaviours (physical and psychological health) – role models these behaviours, and promotes healthy habits (i.e., can't just be statements)
  - sends consistent messages that it is important to take time for emotional and psychological well-being and that it is supported by the organization
  - endorses and engages in psychologically healthy workplaces initiatives in an active & meaningful manner
  - believes in the importance of a psychologically healthy workplace (buy into importance)
  - models safety behaviour
  - takes care of self
  - models resilience
  - models work- life balance
-