Volume One: Research Component

THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND BURNOUT IN MENTAL HEALTH PROFESSIONALS: A META-ANALYSIS

AND

BURNOUT AND WORK ENGAGEMENT IN MENTAL HEALTH PROFESSIOANLS: THE EFFECTS OF TRANSACTIONAL AND TRANSFORMATIONAL LEADERSHIP AND THE WORKING ENVIRONMENT

By

Matthew Perkins

A THESIS SUBMITTED TO THE UNIVERSITY OF BIRMINGHAM FOR THE DEGREE OF DOCTOR OF CLINICAL PSYCHOLOGY

Department of Clinical Psychology

School of Psychology

The University of Birmingham

May 2019

Thesis Overview

This thesis was submitted in partial fulfilment of the requirements for the degree of Doctor of Clinical Psychology at the University of Birmingham. This thesis is presented in two volumes: a research component (Volume I) and a clinical component (Volume II).

Volume I

Volume I presents three research papers. The first paper is a meta-analysis of the relationship between transformational leadership and burnout in mental health professionals. The second paper consist of an empirical study examining the relationship between managers' leadership style, the working environment and mental health professionals' levels of burnout and work engagement. The third is a report written to disseminate the research findings to mental health organisations.

Volume II

Volume II consists of five clinical practice reports (CPRs). CPR One presents a case formulation from a systemic and a cognitive behavioural perspective. CPR Two is a service evaluation, which investigates a local adult Community Learning Disability Team's adherence to recently published NICE guidance. CPR Three consists of a single-case experimental design evaluating the effectiveness of a cognitive-behavioural intervention for a 73-year-old male experiencing anxiety. CPR Four presents an example of psychological consultation whilst working in a Crisis and Home Treatment Team. Finally, an abstract of an oral case presentation (CPR Five) is included in this thesis which describes the case of a 15-year-old female who has been experiencing anxiety.

Acknowledgments

I would like to thank Dr Theresa Powell, who supervised the research component of this thesis. The time and effort that Theresa put into this research as well as her ability to keep me organised and on track are not to be underestimated and are greatly appreciated. Thank you also to Dr Chris Jones for his invaluable statistical guidance throughout.

To the service users, families, carers and colleagues that I have I worked with, thank you for the shared experiences, all that you've taught me and for helping me to see the world from so many different perspectives.

Thank you to my family for their unwavering support, and my friends who have provided welcomed distractions.

And finally, thank you to this whole process for ensuring that mine and Samantha's paths would cross. Sam, you're amazing, thank you for everything.

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Chapter One – Literature Review:

The relationship between transformational leadership and burnout in mental health professionals: A Meta-Analysis

Supervised by

Dr Theresa Powell and Dr Chris Jones

Abstract

Background

A recent meta-analytical review by O'Connor, Neff and Pitman (2018) reported that the prevalence of burnout amongst mental health professionals is high and there is a substantive amount of research in the generic leadership literature that suggests leaders who display a transformational style may help to protect their followers from developing burnout. Given the high prevalence of burnout in mental health professions, it is important to review the current literature concerning potential factors that may help to protect mental health professionals from burnout.

Methodology

Systematic searches were conducted using three databases in August 2018. Nine studies exploring the association between transformational leadership and burnout in mental health professionals were identified for review.

Results

Transformational leadership was found to be significantly associated with all three facets of burnout i.e. negatively associated with emotional exhaustion (r = -0.26, CI 95% = -0.31, -0.22), and depersonalisation (r=-0.17, 95% CI = -0.22,-0.13) and positively associated with personal accomplishment (r=0.18, 95% CI= 0.08, 0.28).

Discussion

There are only a small number of studies that have investigated the relationship between transformational leadership and burnout in the mental health field. A small significant association was found between transformational leadership and mental health professionals' burnout. The consistency of significant findings indicates that transformational leadership may have a role in protecting mental health professionals from burnout, however other factors related to mental health professionals' burnout levels should continue to be explored.

Introduction

This meta-analytical review explores the link between transformational leadership and burnout in staff working in mental health services. A recent meta-analytical review by O'Connor, Neff and Pitman (2018) reported that the prevalence of burnout amongst mental health professionals is high and there has been a substantive amount of research in the generic leadership literature that has found that leaders who display a transformational style may help to protect their followers from developing burnout. Given the high prevalence of burnout in mental health professionals, it is important to review the current literature concerning potential factors that may help to protect mental health professionals from burnout.

Burnout is a major public health issue that has significant implications for healthcare professionals. High levels of burnout have been found to increase the risk of absence related to mental health problems, as well as diseases of the circulatory, respiratory, and musculoskeletal systems (Toppinen-Tanner, Ojajrvi, Vaanaanen, Kalimo & Jappinen, 2010). Furthermore, an association between staff sickness due to stress and the quality of care that patients receive has been established (Eliacin, Flanagan, Monroe-Devita, Wasmuth, Salyers & Rollins, 2018), and the impact of burnout on staff commitment and turnover impacts on the sustainability of healthcare organisations (Laschinger, 2009).

Burnout, the result of prolonged stress on the job (Ganster & Schaubroeck, 1991) is a psychological syndrome that occurs in professionals who work with other people in challenging situations. Maslach (1981) defined burnout as comprising of three main components, 1) emotional exhaustion; feeling overburdened and depleted of emotional resources, 2) depersonalisation; a negative and cynical attitude towards people, and 3) a diminished sense of personal accomplishment. Since Maslach's conceptualisation of burnout,

alternative definitions have emerged with Kirstensen, Borritz, Villadsen, & Christensen (2005) proposing that emotional exhaustion is the core component of burnout, with depersonalisation being a coping strategy and lack of personal accomplishment a consequence of burnout rather than a defining feature. For the purpose of the review therefore, these three components of burnout have been explored individually.

For mental health organisations in particular, burnout has been shown to predict future sick leave (Toppinen-Tanner, et al., 2005) and high levels of burnout have been correlated with reduced fidelity to evidence-based practice (Mancini et al., 2009). Burnout has also been correlated with a number of negative organisational variables including increased staff turnover, frequent absenteeism, frequent cycles of recruitment and the high costs associated with training new staff (Rollins, Salyers, Tsai, & Lydick, 2010). Additionally, high levels of emotional exhaustion and depersonalisation have been shown to correlate with distant and rejecting attitudes towards patients on mental health inpatient wards (Holmqvist & Jeanneau, 2006). It has thus been suggested that staff burnout is a critical issue in mental health care that threatens the sustainability of services and the ability of mental health professionals to provide safe and effective patient care (Lasalvia & Tansella, 2011).

Research suggests that the prevalence of burnout varies between 21% to 67% in the mental health workforce (Morse, Salers, Rollin, Monroe-DeVita & Pfahler, 2012). Webster and Hackett (1999) found that 54% of mental health professionals who worked in the community experienced high levels of emotional exhaustion and 38% of these professionals reported high levels of depersonalisation. Interestingly, however, most reported high levels of personal accomplishment in the latter study. Rohland (2000) reported that over 66% of directors of community mental health centres had high levels of emotional exhaustion and high levels of depersonalisation and Siebert (2005) found that 36% of social workers were

experiencing high levels of emotional exhaustion. More recently, O'Connor et al. (2018) carried out a meta-analytic review of the prevalence of burnout in mental health professionals. O'Connor et al. (2018) reported prevalence estimates for high levels of emotional exhaustion as 40%, for high levels of depersonalisation as 22%, and for low levels of personal accomplishment as 19%.

The variation in prevalence rates may be explained by methodological differences, which is a common issue in this type of study (Morse et al., 2012). For example, there may be variation in the mental health professionals' job roles and professions. Indeed, higher burnout has been reported in community social workers when compared to mental health nurses and psychiatrists (Priebe, Fakhoury, Hoffman, & Powell, 2005). A further study comparing inpatient and outpatient staff suggested that the former experience lower levels of burnout (Prosser et al., 1997).

Despite the above variation, it is generally accepted that burnout is indeed widespread amongst mental health professions (Morse , Salyers, Rollins, Monroe-DeVita, & Pfahler, 2012). This may be due to the demanding environment that mental health professional work in which includes the complex nature of therapeutic relationships, and the potential for threats of violence and suicidal acts of patients (Maslach & Leiter, 2007; Rössler, 2012).

In a subsequent systematic review, O'Connor et al. (2018) identified certain 'work-related' factors as determinants of burnout in mental health professionals. These factors consisted of characteristics of the working environment such as workload levels, perceived capacity to influence decisions and sense of autonomy. However, these factors were not synthesised using meta-analytic techniques due to the variation in how 'work-related' factors were measured and reported.

One theoretical model that incorporates the above determinants is the Areas of Work Life Model (AWL) (Leiter & Maslach, 2004), which includes fair recognition and reward for work, fairness in the treatment of staff and with organisational decisions, the alignment of personal values with the organisation's values as well as workload, sense of control over one's work and sense of community in the work place. Smirich and Morgan (1982) suggest that a manager of a team is in a position to be able to define and shape the working environment. Jiménez, Winkler and Dunkl (2017) expanded on this, arguing that leaders are in continuous interaction with the working environment and have significant influence over employees' health due to their ability to influence the AWL factors.

Further research on the components of the working environment by Halbesleben (2006) has shown that fostering a respectful and appreciative work environment with positive social interaction is negatively associated with emotional exhaustion. Whereas, disrespect, condescension, and social exclusion have all been found to increase burnout (Lim, Cortina, & Magley, 2008; Miner & Reed, 2010). Employees who perceive their working environment to be unfair (e.g. inequity of workload or appraisals, promotions mishandled, etc.) are more likely to experience emotional exhaustion (Maslach, Schaufeli & Leiter, 2001). It is thought that leaders are able to influence a fair working environment by the distribution of the organisation's resources fairly and providing the same opportunities for all employees. Thus, it has been argued that managers may influence their employees' levels of burnout through their interaction with the working environment (Breevaart et al., 2014).

Research into this association between leadership and burnout has mainly focused on transformational leadership (e.g. Harms, Credé, Tynam, Leon, & Jeung, 2016; Skakon, Nielsen, Borg, & Guzman, 2010). Transformational leadership consists of four core dimensions. The first is idealised influence that incorporates the manager as a role model for

followers, setting high standards and communicating a vision for the organisation in order to win the trust of their followers. The second dimension, inspirational motivation, reflects a leader's ability to articulate a persuasive vision through words, symbols and imagery to inspire followers to act (Bass, 1985). The third dimension, intellectual stimulation, reflects the extent to which a leader empowers employees' by using their collective wisdom to solve problems and decision making (Bass, 1985). Leaders engaging in individualised consideration, the final dimension of transformational leadership, focus on the individual differences in the needs of their followers and the leader's ability to coach or mentor them in an effort to help maximise their full potential (Avolio, Bass, & Jung, 1999).

Given transformational leadership focuses on individual needs and the provision of meaning, it is assumed from a theoretical perspective that this leadership style is associated with better follower outcomes (Hildenbrand, Sacramento, & Binnewies, 2018). This assumption has been tested several times, for example higher levels of transformational leadership has been shown to be related to increased happiness and well-being (Arnold, Turner, Barling, Kelloway, & McKee, 2007; Kelloway, Turner, Barling & Loughlin, 2012). Despite this, the relationship between burnout and transformational leadership has not been researched as much, although some studies have found higher levels of transformational leadership to be associated with lower levels of emotional exhaustion and depersonalisation (e.g. Kanste, Kyngäs & Nikkilä, 2007; Stordeur,D'hoore, & Vandenberghe, 2001). Although research and theoretical underpinnings suggest that the relationship between transformational leadership and burnout to be negatively associated, (e.g. higher levels of transformational leadership to be associated with lower levels of burnout) it is still regarded as uncertain amongst researchers in this area (Hildenbrand et al., 2018).

Therefore, given the high prevalence rate of burnout in mental health professionals, and the theoretical and the apparent association in the research literature between transformational leadership style and burnout, this study aims to review this association in mental health professionals in order to establish the strength of the relationship.

Research Question.

This meta-analytical review will therefore attempt to answer the following three research questions.

Question 1: What is the evidence for the association between mental health professionals' levels of emotional exhaustion and the degree of transformational leadership style displayed by their managers?

Question 2: What is the evidence for the association between mental health professionals' levels of depersonalisation and the degree of transformational leadership style displayed by their managers?

Question 3: What is the evidence for the association between mental health professionals' levels of personal accomplishment and the degree of transformational leadership style displayed by their managers?

Method

Literature search

To identify empirical studies related to transformational leadership style and burnout, a systematic search of three databases (PsychINFO, PubMed and Embase) was conducted in August 2018 for original research. Relevant controlled vocabulary terms and free text terms

related to burnout, and mental health professionals were used to search each database. In all databases, the search was restricted to studies published in English and in a peer-reviewed journal. There was no restriction placed with regards to when the studies were published and therefore all research was searched from the origin of the database to 15th August 2018. The reference lists from articles and reviews were examined for any additional studies. The full search strategies can be found in Table 1.

Inclusion and exclusion criteria.

The inclusion criteria were

1: The study's sample is comprised of at least 70% of mental health professionals.

2: the study measured a component of burnout (emotional exhaustion, depersonalisation, personal accomplishment).

3: the study used a validated measure of burnout.

4: the study measured the levels of transformational leadership style in managers of the team and/or service

5: The study used a validated measure of transformational leadership.

6: the study reported a Pearson's value between leadership style and burnout, or the statistic reported can be transformed into a statistical equivalent.

7: the study was empirical and quantitative.

Table 1

Search Method.

Construct	Burnout	Leadership Style	Mental Health Professional
Search Terms	"Professional burnout"	"leadership"	"mental health service"
	"stress"	"leadership style"	"community mental health services"
	"psychological stress"	"leader"	"mental health"
	"burnout"	"transformational leader*"	"psychiatric hospital"
	"morale"	transactional leader*"	"psychiatric department"
	"compassion fatigue"	"LMX"	"occupational therapist"
	"job satisfaction"	"leader-member exchange"	"social worker"
	"emotional exhaustion"	"abusive"	"nurse"
	"depersonalization"	"aversive"	"mental health nurse"
	"personal accomplishment"	"destructive"	"psychiatric nurse"
		"hostile"	"mental health professional"
		"malevolent"	"psychiatric staff"
		"negative"	"psychiatric personnel"
		"self-centred"	"substance misuse worker"
		"toxic"	"addiction services"
		"tyrannical"	"drug worker"
		"managers"	"drug services"
		"management"	"drug counsellor"
		"supervisor"	"counsellor"
		"supervision"	"psychiatrist"
		"cynicism"	"psychologist"
Method of Search	All search terms from each construct combined with *OR* and results from each construct combined with AND		
Limits	Peer reviewed articles		
	English language only		

Study selection, data extraction and assessment of study quality.

Study titles and abstracts were reviewed for eligibility after duplicates were removed. If an article was considered to have met the inclusion criteria, the full text was assessed. Any difficulties applying the inclusion criteria were discussed with a second researcher. All data was extracted by the main researcher. The reliability of applying the inclusion criteria and data extraction was checked using a 40% random sample with a second researcher. A second rater also cross-validated the quality ratings and data extraction by reviewing 40% percent of the studies. No difficulties arose from this process. Thus, full reports of studies of agreed relevance were obtained, quality rated, and data relating to methods, participants, and outcomes were extracted.

A set of quality criteria was developed to assess any risk of bias within this literature. The quality criteria were adapted from existing frameworks including: Downs & Black (1998), The Cochrane Collaboration Risk of Bias Tool (Higgins et al., 2011), the Quality Assessment Tool for Observational Cohort and Cross Section Studies and the Quality Appraisal Checklist - Quantitative Studies Reporting Correlations and Associations (NICE, 2012). The risk of bias was assessed over six domains: Selection Bias, Performance Bias, Detection Bias, Statistical Bias, Reporting Bias, and Generalisability. Each domain was rated as either low, unclear or high risk (see Tables 3-8). For each domain studies were rewarded two points for being scored as low risk, one point for an unclear risk and zero points for a high risk. This gave a maximum of twelve points which was used to calculate the study quality as a percentage.

Data Synthesis

All studies reported associations as zero-order Pearson's r correlation coefficients. One primary study reported the same outcome measure in multiple subgroups. Thus, these were combined into a single quantitative outcome using the procedures described by Borenstein (2009).

Results

Search outcome

The electronic literature search identified 1044 unique citations. Based on a review of article titles and abstracts 1029 were excluded. After a full-text review, nine studies remained (see Figure 1). Please see Table 2 for an overview of the selected studies.

Study population and study design

Studies were conducted across three different countries; USA (n=7), Netherlands (n=1) and Israel (n=1). All the studies were cross sectional designs. Self-reported questionnaires were reported in every study. The number of respondents ranged from 89 (Madathil, Heck, & Schuldberg, 2014) to 699 (Vilardaga et al., 2011). The mean study size was 377 (SD 225.38). The study settings consisted of; inpatient setting (n=3), substance misuse services (n=2), community mental health adult services (n=2), and community mental health children services (n=2). The participants' profession was not always reported, however the majority of the sample were described as counsellors (49%) followed by mental health nurses (35%).

Table 2

Characteristics of included studies and quality score.

Study	Country of study	Study Population	Response rate	Sample size and characteristics	Burnout Measure	Leadership Measure	Quality Score
Corrigan et al. (2002)	USA	Community and inpatient mental health services	85.2%	N=620 Female: 71.3% Male: 18.7% Mental Health Nurses: 66.5% Psychologists/social workers: 31.2% Other: 2.3%	MBI	MLQ	75%
Broome et al. (2009)	USA	Substance misuse services	77%	N = 550 Female: 61% Male: 39% Counselling staff: 100%	ORC	ORC	67%
Green et al. (2014)	USA	Community child and adolescent mental health services	89%	N=322 Mean age = 35.74 years Family therapists: 38% Social workers: 37%	OSCS	MLQ	67%

				Psychologists: 25%			
Green et al. (2013)	USA	Child and adolescent mental health services	98.9%	N=388 Female: 81.4% Male: 18.6% Mean age = 36 years	Children Survey Study	MLQ	75%
Goussinksy & Livne (2018)	Israel	Inpatient mental health services	62%	N= 234 Mental Health Nurses = 66.4% Allied health professionals = 19.1% Physicians = 14.5%	MBI	Supervisor Support Scale	75%
Madathil et al. (2014)	USA	Inpatient mental health services	Not reported	N=89 Female= 88% Male= 12% Mental Health Nurses = 61%	MBI	MLQ	93%
Melchior et al. (1997)	Netherlands	Long stay mental health inpatient services	73.4%	N=361 Female = 72%	MBI	LBQ	83%

				Male = 18% Mental Health Nurses (n=258) "Practical nurses" (n=59) Leaders (n=20) Nurses' aids (n=23)			
Webster and Hackett (1999)	USA	Community mental health services	Not reported.	N=151 Female = 67% Male = 33%	MBI	Leadership Practice Inventory	67%
Vilardaga et al. (2011)	USA	Substance misuse services	Not reported	N=699 Female = 60.8% Male = 39.2% Counsellors = 51% Supervisors = 26.5% Administrators: 11.7% Trainers or Educators: 10.7%	MBI	Job Content Questionnaire	67%

Table Key: MBI = Maslach Burnout Inventory, MLQ = Multifactor Leadership Questionnaire, ORC = Organisational Readiness for Change, LBQ = Leadership Behaviour Questionnaire, OSCS = Organisational Social Context Scale.

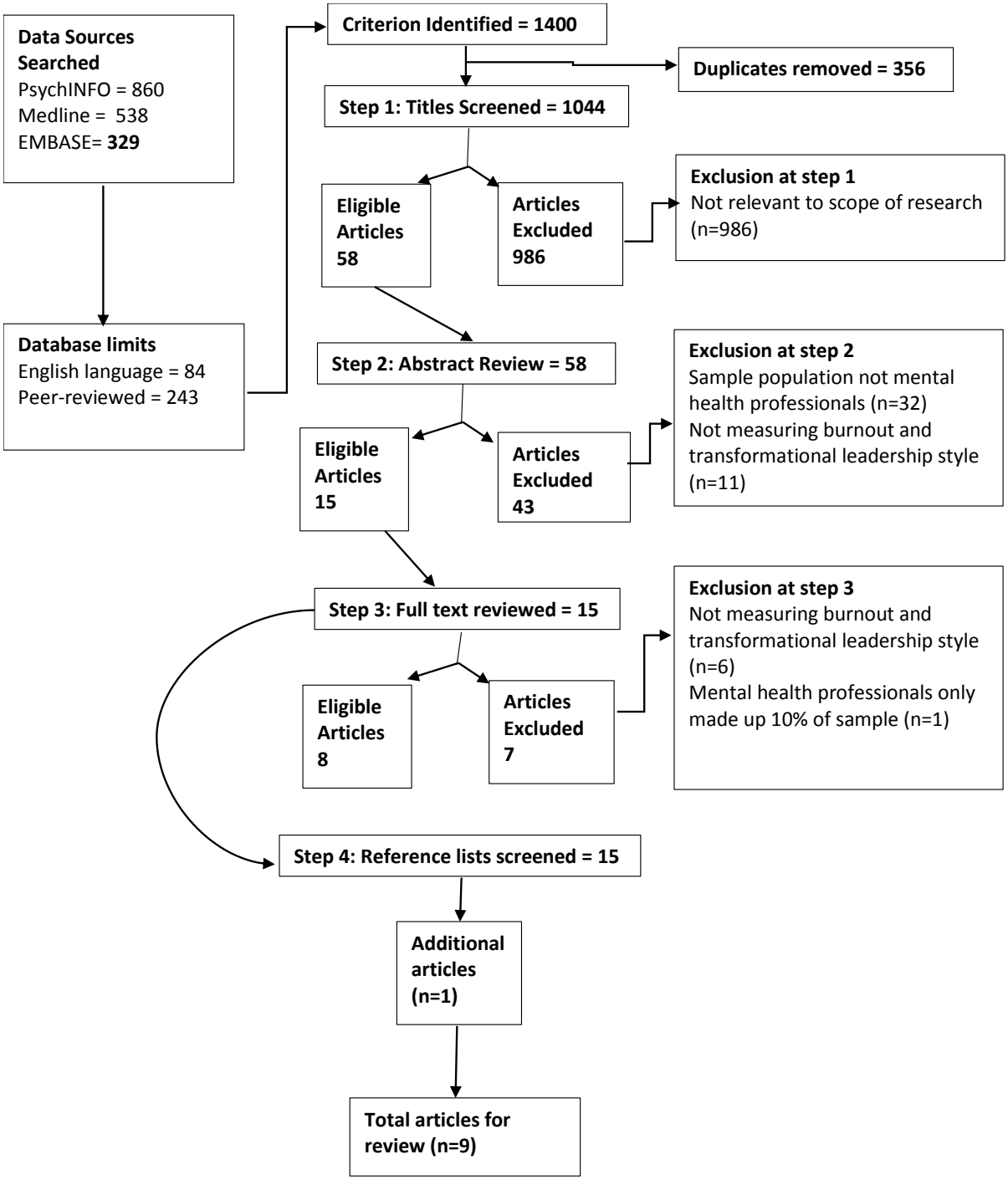

Figure 1: Results of the systematic search and the application of the inclusion criteria.

Quality of studies

The studies were assessed for any risk of bias. The studies were rated over six different domains; selection bias, performance bias, detection bias, statistical bias, reporting bias and generalisability. Studies were rated as low risk, unclear risk or high risk per domain. An overview of these ratings can be seen in Figure 2.

	Selection Bias	Performance	Detection Bias	Statistical Bias	Reporting Bias	Generalisability	Total Quality Score	Study Total
Corrigan et al (2002)							9/12	75%
Broome et al (2009)							8/12	67%
Green et al (2014)							8/12	67%
Green et al (2013)							9/12	75%
Madathil et al (2014)							10/12	83%
Melchior et al (1997)							10/12	83%
Webster & Hackett (1999)							8/12	67%
Goussinksy & Livne (2018)							9/12	75%
Vilardaga et al (2011)							8/12	67%

Figure 2: Summary of applied quality criteria. Red indicates high risk of bias, amber marks an unclear risk of bias and green is a low risk of bias.

Selection Bias.

Table 3

Selection Bias

Domain	Details	Risk of Bias
Selection Bias	Selection bias occurs when there is a systematic difference between the characteristics of those selected for the study and those who are not.	High Risk- Target sampling was used. Includes an unacceptable level of non-response rate (reporting less than 50% of the data). Unclear Risk- The recruitment process/sampling method of individuals is unclear or has not been reported. Convenience sampling was used. Non-response rate is not reported. Low Risk- The recruitment method is clearly reported and well defined. Response rate is reported and of an acceptable level (>70%). The source of population is well described, and characteristics of the study are reported.

Overall, selection bias was mixed within the studies, with two studies being rated as low risk. The two low risk studies (Broome, Knight, Edwards, & Flynn, 2009, Melchior et al., 1997) clearly reported the recruitment procedure and the sample characteristics and reported a response rate above 70%. One of the studies (Melchior et al., 1997) used randomised sampling for participating sites. The seven unclear risk studies all used convenience sampling, which risks the study samples not being representative of the overall population.

Performance Bias.

Table 4

Performance Bias

Domain	**Details**	**Risk of Bias**
Performance Bias	Performance bias refers to differences in exposure to factors that may impact how the participant performs in the study.	High Risk- Responses are not confidential. Participants were rewarded for their participation. Participants were told what questionnaires they were completing and why. Unclear Risk- Level of confidentiality is not reported. No clear distinction between early and late responders. Unclear about participants being rewarded for their participation. Unclear how much information was provided to participants prior to their involvement in the study. Low Risk- Study reports level of confidentiality. There is a distinction made between early and late responders. Participants were not rewarded for their participation. It is clear that the information is provided in a way that does not create a response bias.

One study was rated as being low risk. This study reported that the responses of the study were both voluntary and confidential (Green, Miller, & Aarons, 2013). Confidentiality and the voluntary role of the participant ensures that the participants feel able to respond

truthfully without fear of consequence from their manager or wanting to respond in a way that justifies the reward (e.g. answering in a socially desirable way).

Seven studies were rated as an unclear risk. Of these, five were unclear in their reporting of how much information was provided prior to participation (Broome et al., 2009, Corrigan, Diwan, Campion, & Rashid, 2002, Goussinksy & Livne, 2018, Madathil et al., 2014, Webster & Hackett, 1999), four did not report whether responses were confidential (Corrigan et al., 2002, Green, Albanese, Shapiro, & Aarons, 2014, Madathil et al., 2014, Melchior 1997) and four studies did not report whether participants received rewards or incentives to participate (Corrigan et al., 2002, Broome et al., 2009, Madathil et al., 2014). In three of the seven studies it was unclear whether any distinctions were made between early and late responders (Corigan et al., 2002, Broome et al., 2009, Webster & Hackett, 1999). Previous research has found differences in how participants respond depending on whether they respond quickly or late. For example, whilst investigating patient satisfaction Yessis and Rathert (2006) reported that participants who responded immediately provided answers that were significantly more positive than those who responded after responders were reminded and Gadkari, Pedan, Gowda and McHorney (2011) reported that late responders were more likely to not be adherent to medication treatment compared to early responders. This is pertinent in the area of burnout as participants who are experiencing high levels of burnout may respond quicker and/or need more reminders to respond.

One study was rated as high risk as participants were rewarded for their participation in the research (Vilardga et al., 2011).

Detection Bias.

Table 5

Detection Bias

Domain	Details	Risk of Bias
Detection Bias	Detection bias refers to whether the design of the study is optimised to detect the effect in question.	High Risk- The outcome measures were implemented differently across participants. The research question was not appropriate for the study design. The outcome measures had poor psychometric properties. Unclear Risk- Information regarding the outcome measures are either not reported or not clearly reported. The research question is unclear. Low Risk- The outcome measures are clearly defined, valid and reliable, and are implemented consistently across all participants. The research question was clearly stated.

Seven studies were rated as low risk. These studies clearly stated the research question and used validated outcome measures. Two studies were rated high risk due to the poor psychometric properties of the outcome measures (Broome et al., 2009, Green et al., 2014).

Statistical Bias.

Table 6

Statistical Bias

Domain	Details	Risk of Bias
Statistical Bias	Bias resulting from the (inappropriate) statistical treatment of the data.	High Risk- Statistics were not reported. Wrong statistical test was used and not appropriate for the study design. Attrition rate at an unacceptable level (>20%) Unclear Risk- Attrition rate is not reported at analysis. Unclear what statistical test was used. Low Risk- The study has reported a Pearson's value or the statistic can be transformed into a statistical equivalent. Attrition rate is reported at analysis at an acceptable level (less than <20%)

All nine studies used statistical methods that produced a Pearson's r value and were subsequently rated as low risk for statistical bias.

Reporting Bias.

Table 7

Reporting Bias

Domain	Details	Risk of Bias
Reporting Bias	Reporting bias refers to systematic differences between reported and unreported findings.	High Risk- Not reported full outcome measures that are stated in the method section/reported only a subsample of significant results. Unreported outcomes. Unclear Risk- Not all descriptive and/or summary statistics are presented. There is a description in the results but do not report statistics. Low Risk- Reported all results of measures as outlined in the method section.

Eight studies were rated as low risk. One study was rated as unclear risk; this study only reported the subscale of the outcome measure and not the total correlation (Webster & Hackett, 1999).

Generalisability Bias.

Table 8

Generalisability Bias

Domain	Details	Risk of Bias
Generalisability	Generalisability describes the extent to which research findings can be applied to settings other than that in which they were originally tested. This and any differences between the study participants and those persons to whom the review is applicable.	High Risk- Small sample with or without idiosyncratic features. The sample size is not adequate to detect an effect. Unclear Risk- Sufficient sample for generalisation but with some idiosyncratic features. A sample size justification estimate and power analysis were not provided. Low Risk- Sufficient sample for generalisation and representative of target population. A sample size justification, estimate and power analysis was provided. The sample size is adequate to detect an effect.

One study was rated as low risk (Madathil et al., 2014). The remaining eight studies were rated as unclear risk. Of these studies, seven were compiled of idiosyncratic features (e.g. sample consisting of all drug workers, children mental health workers, nurses, etc.) and three did not provide a sample size justification (Corrigan et al., 2002, Broome et al 2009., Melchior et al., 1997).

Summary.

Overall, the level of bias across studies was mixed. Six of the studies were not ranked as a high risk bias in any of the domains. Notably, there was an unclear risk of bias across most of the studies in the domain of generalisability, mainly due to the sample consisting of idiosyncratic features. Therefore, results of this meta-analysis should be interpreted with caution and it is hoped that future research will include higher quality research with more generalisable samples. Nevertheless, the studies included are a representative summary of the research literature as it stands currently.

Measurement of burnout

There were four validated measures of burnout in the literature. These were Maslach Burnout Inventory (MBI: Maslach, Jackson, Leiter, 1996) (n=6), the Children's Services Survey – emotional exhaustion subscale (n=1), the Organisational Social Context Scale (OSCS: Glisson et al., 2007) (n=1), and the Organisational Readiness for Change – burnout subscale (n=1) (ORC: Lehman, Greener, & Simpson, 2002).

Measurement of transformational leadership

There were six validated measures of transformational leadership style in the literature. These were the Multifactor Leadership Questionnaire (MLQ: Bass & Avolio, 1993) (n=4), the Leadership Behaviour Questionnaire (LBQ: Stogdill, 1963) (n= 1), Organisational Readiness for Change – leadership subscale (Lehman, Greener, & Simpson, 2002) (n=1), the Leadership Practices Inventory (LPI) (n=1), the Job Content Questionnaire – the Supervisor Support Subscale (Karasek et al., 1998) (n=1) and the Supervisor Support Scale (Iverson, Olekalns, and Erwin, 1998) (n=1).

Relationship between transformational leadership and emotional exhaustion.

All nine studies included a measure of emotional exhaustion. The reported correlation values between transformational leadership and emotional exhaustion are reported in Table 9.

Table 9

Correlations between transformational leadership and emotional exhaustion.

Name of Study	Correlation	Number of Participants
Corrigan et al., (2002)	-0.18	620
Broome et al., (2009)	-0.33	550
Goussinksy & Livne (2018)	-0.35	234
Green et al., (2014)	-0.23	322
Green et al., (2013)	-0.3	388
Madathil et al., (2014)	-0.37	89
Melchior et al., (1997)	-0.22	361
Webster & Hackett (1999)	-0.25	151
Vilardaga et al., (2011)	-0.21	699

It is known that psychological studies are likely to vary because of several uncontrolled factors e.g. methodological weakness across studies, uncontrolled moderators, and natural variation in the measured effect (Barlow & Nock, 2009). Therefore, it is not appropriate to use a fixed effects model for the present analysis as the fixed-effect model assumes that the true effect sizes for all studies are identical, and that variation between the effect sizes of the studies is a result of sampling error (error in estimating the effect size).

Therefore, for the present analysis the random-effects model was used. The aim of the random-effects model is to estimate the mean distribution of possible effects, which is likely to show true variation because of idiosyncratic characteristics of the individual. Since each study provides a different effect size, it is important to ensure that these effect sizes are represented in the summary estimate. Therefore, small studies cannot be discounted by giving it a small weight (as they would be in a fixed-effect analysis).

The random effects model was calculated using the generic inverse variance model. The random effects model suggested a weighted average correlation of $r = -0.26$ ($z = -11.5$, $p < 0.01$) and a 95% confidence interval between *-0.31 to -0.22*, please see Figure 3. A correlation of -0.26 would be associated with a small (6.8%) association between transformational leadership and emotional exhaustion.

An effect is considered heterogeneous if the primary studies show marked variations that cannot be attributed to the variations in the effect itself, for example variation in research methods across studies, measurement error or uncontrolled individual difference factors within the body of literature. Higgins I^2 is used to measure heterogeneity with larger values of I^2 showing increasing heterogeneity. Due to considerable variation in methodologies of the primary studies that were used to calculate the meta-analytic synthesis, problematic heterogeneity was defined as a Higgins I^2 value greater than 75%.

An acceptable level of heterogeneity in the correlation between transformational leadership and emotional exhaustion derived from the primary studies was observed ($tau^2 = 0.002$, Higgin's $I^2 = 42.8\%$; $Q = 13.98$, $p = 0.08$). This suggests an acceptable level of variation in the primary studies that is not attributed to the association between leadership and emotional exhaustion and that this body of studies are reporting a consistent effect size for the association between transformational leadership and emotional exhaustion.

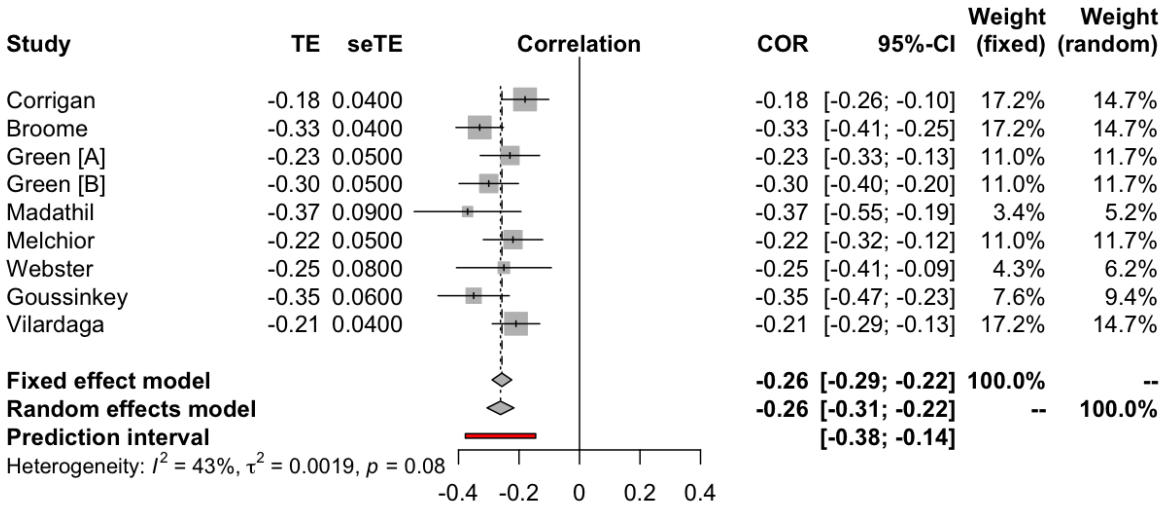

Figure 3: Random effects model between transformational leadership and emotional exhaustion.

The impact of disproportionately influencing studies was assessed using a "leave-one-out" analysis in which the random effects model was calculated with each of the primary studies removed in turn. This measure of influence is depicted in forest plot of leave-one-out effect sizes shown in Figure 4. If the 95% confidence interval for a study that has been removed from the synthesis does not include the value of the synthesis from the complete data set, then it may be inferred that the removal of that results in a quantitatively different conclusion and the removed study is exerting excessive influence on the outcome.

The leave-one-out analysis shows that none of the primary studies were disproportionately influencing the results of the analysis.

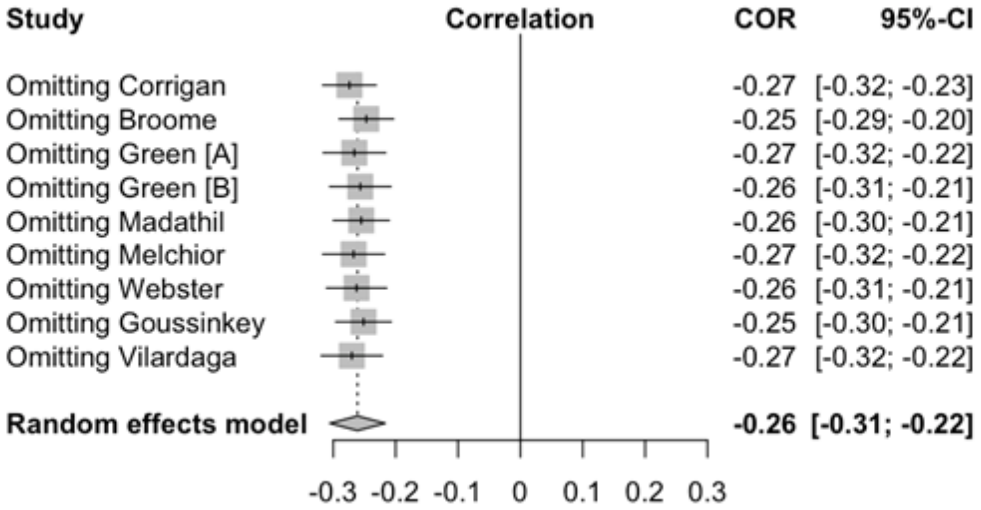

Figure 4: *Leave-one-out forest plot analysis for correlation of transformational leadership and emotional exhaustion.*

Attenuation due to methodological quality of the included studies.

The quality effects model was calculated using the total score from the risk of bias rating reported in Figure 2. The quality effects model can be interpreted as the meta-analytic synthesis that would have been obtained had all of the studies been of the same methodological quality as the best study in the review.

The quality effect model reported a synthesis of r = -0.27 (95%CI -0.32 to -0.22). The quality effects model evidences less than 1% increase relative to the random effects estimate. Thus, methodological variation does not have a significant effect on the result.

Publication bias.

For outcomes with a sufficient number of primary studies, publication bias and small study effects will be identified through visual and statistical inspection of the funnel plot. A funnel plot is a scatterplot of the effects against a measure of study precision. It is used primarily as a visual aid for detecting systematic heterogeneity. In the absence of publication bias, it is

assumed that studies with high precision will be plotted near the average (i.e., the meta analytic synthesis), and studies with low precision will be spread evenly on both side of the average, creating roughly funnel-shaped distribution whether the distance from the average is inversely proportionate to the precision of the study. A symmetric inverted funnel shape arises from a 'well behaved' data set, in which publication bias is unlikely, whereas deviation from this shape can indicate publication bias especially if there is an absence of studies in the region associated with small samples size and non-significant effects.

The funnel plot of the correlation between transformational leadership and emotional exhaustion is presented in Figure 5. As can be seen from Figure 5 the outcomes reported for the correlation between transformational leadership and emotional exhaustion do conform to normal expectations, however there is evidence of some degree of publication bias.

The trim and fill method corrects for the effects of publication bias. Trim and Fill uses an iterative procedure to remove the most extreme small studies from the positive side of the funnel plot, re-computing the effect size at each iteration until the funnel plot is symmetric about the effect size. In theory, this will yield an unbiased estimate of the effect size. While this trimming yields the adjusted effect size, it also reduces the variance of the effects, yielding a too narrow confidence interval. Therefore, the algorithm then adds the original studies back into the analysis and imputes a mirror image for each. This fill has no impact on the point estimate but serves to correct the variance (Duval and Tweedie, 2000a, 2000b).

In Figure 5, the observed studies are shown as dark circles. The uncorrected estimate of the effect size is -0.261 (95% CI -0.31, -0.22). The imputed studies are shown as empty circles, and the imputed estimate is -0.255 (95% CI -0.3, -0.21). The adjusted point estimate suggests a slightly smaller effect than the original analysis, however this correction does not challenge

the substantive conclusions form the random effects model and suggests that publication bias has only a negligible effect of this analysis.

Using the Rosenthal (1979) algorithm, 776 unpublished null studies are required to reduce to non-significance of the meta-analytic effect based on the nine included studies; accordingly, this effect is robust to publication bias.

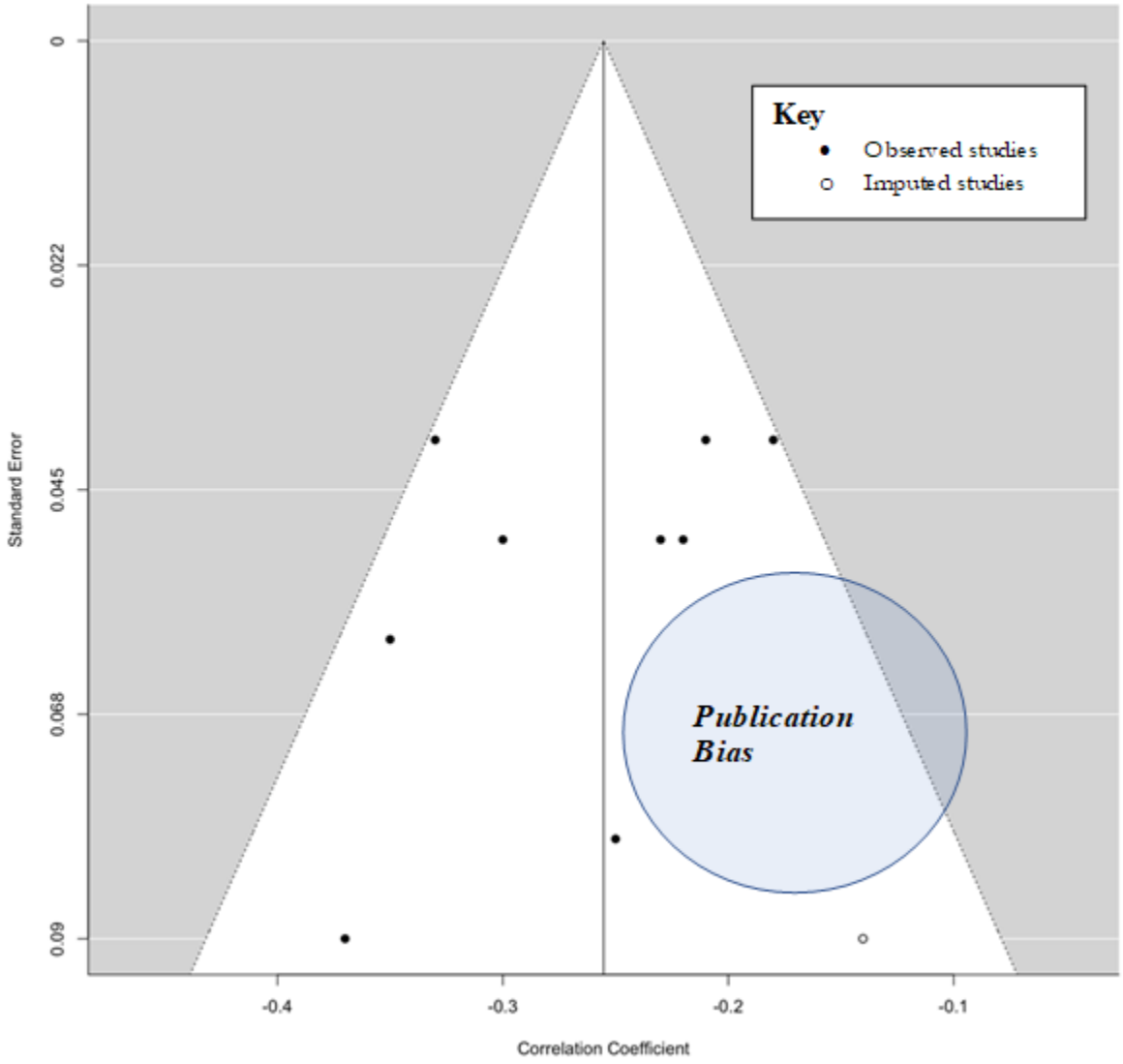

Figure 5: Corrected for publication bias funnel plot between transformational leadership and emotional exhaustion.

Relationship between transformational leadership and depersonalisation.

Seven studies included a measure of depersonalisation. The correlations between transformational leadership and depersonalisation are reported in Table 10.

Table 10

Correlations between transformational leadership and depersonalisation

Name of Study	Correlation	Number of Participants
Corrigan et al., (2002)	-0.21	620
Goussinksy & Livne (2018)	-0.2	234
Green et al., (2014)	-0.19	322
Madathil et al., (2014)	-0.19	89
Melchior et al., (1997)	-0.19	361
Webster & Hackett (1999)	-0.22	234
Vilardaga et al., (2011)	-0.08	699

A random effects model was employed using the generic inverse variance model. The random effects model suggested a weighted average correlation of r = -0.17 (z= -7.93, p < 0.0001) and a 95% confidence interval between -0.22 to -0.13. A correlation of -0.17 would be associated with a small (2.89%) association between transformational leadership and depersonalisation.

An acceptable level of heterogeneity in the correlation between transformational leadership and depersonalisation derived from the primary studies was observed (tau^2 = 0.0005, Higgin's I^2 = 15%; Q = 7.06, p = 0.32). This suggests an acceptable level of variation in the primary studies with respect to uncontrolled or confounding factors and that this body of

studies is reporting a coherent and consistent effect for the relationship between transformational leadership and depersonalisation.

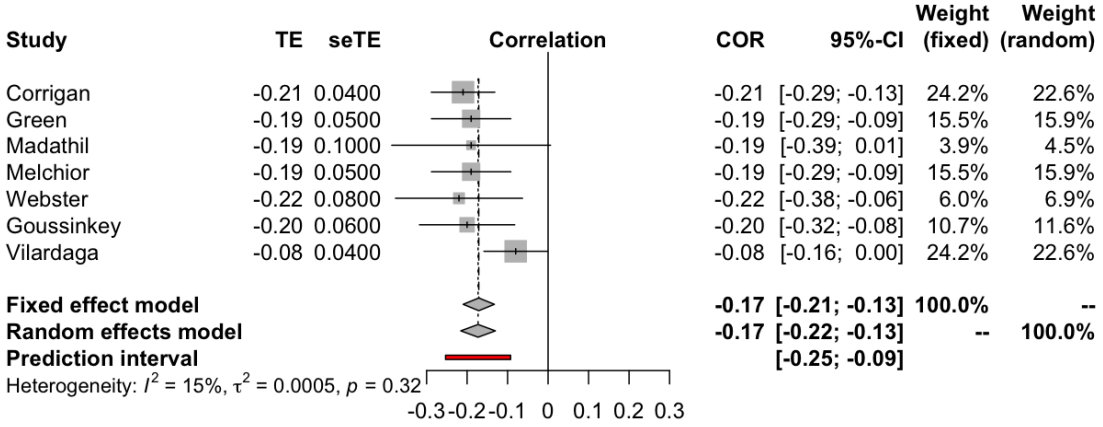

Figure 6: Random effects model between transformational leadership and depersonalisation.

The "leave-one-out" analysis was used to assess influential studies. This measure of influence is depicted in a forest plot of leave-one-out effect sizes shown in Figure 7. The leave-one-out analysis showed that none of the primary studies were disproportionately influencing the results of the analysis.

The quality effect model reported a synthesis of r = -0.19 (95%CI -0.24 to -0.13). The quality effects model evidences an approximate 0.72% increase relative to the random effects estimate. Thus, methodological variation does not have a significant effect on the result.

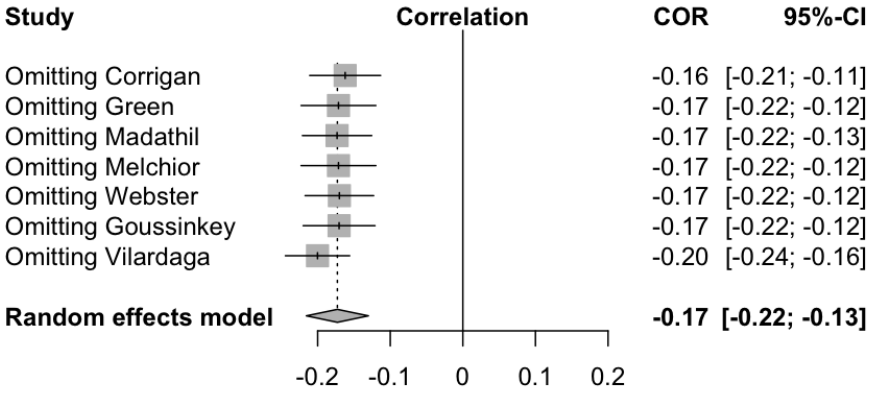

Figure 7: Leave-one-out forest plot analysis for correlation of transformational leadership and depersonalisation.

The funnel plot of the correlation between transformational leadership and depersonalisation is presented in Figure 8. As can be seen from Figure 8 the outcomes reported for the correlation between transformational leadership and depersonalisation do not conform to normal expectations and there is evidence of publication bias.

In Figure 8, the observed studies are shown as dark circles. The uncorrected estimate of the effect size is -0.17 (95% CI -0.22, -0.13). The imputed studies are shown as empty circles, and the imputed estimate is -0.16 (95% CI -0.2, -0.12). The adjusted point estimate suggests a slightly smaller effect than the original analysis.

Using the Rosenthal (1979) algorithm, 186 unpublished null studies are required to reduce to non-significance of the meta-analytic effect based on the seven included studies. Accordingly, this effect is robust to publication bias.

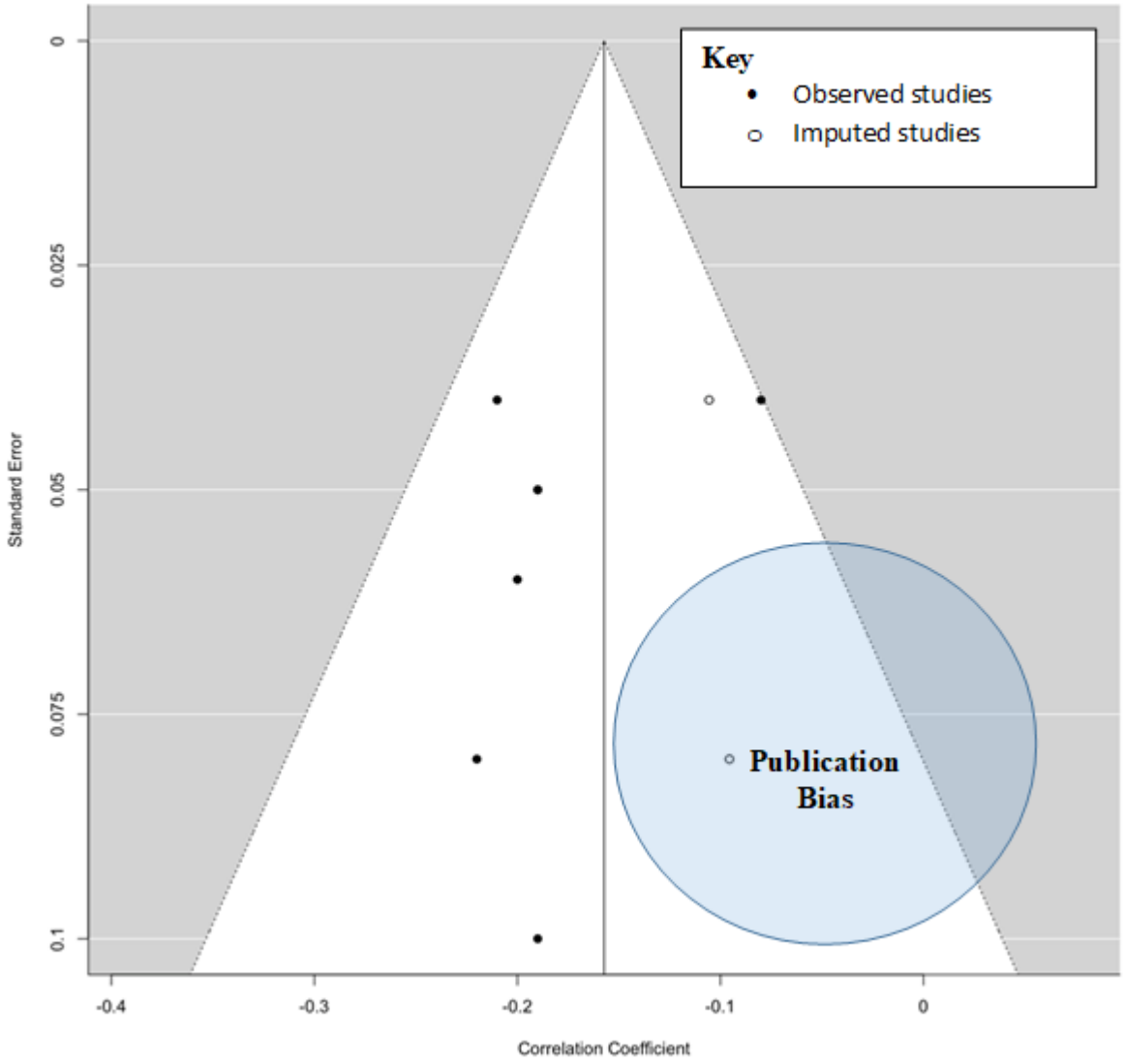

Figure 8: Corrected for publication bias funnel plot between transformational leadership and depersonalisation.

Relationship between transformational leadership and personal accomplishment

Six studies included a measure of personal accomplishment. The correlations between transformational leadership and personal accomplishment are reported in Table 11.

Table 11

Correlations between transformational leadership and personal accomplishment.

Name of Study	Correlation	Number of Participants
Corrigan et al., (2002)	0.27	620
Green et al., (2014)	0.27	322
Madathil et al., (2014)	0.34	89
Melchior et al., (1997)	0.16	361
Webster & Hackett (1999)	0.04	151
Vilardaga et al., (2011)	0.04	699

A random effects model was calculated using the generic inverse variance model. The random effects model suggested a weighted average correlation of $r = 0.18$ ($z = 3.64$, $p < 0.01$) and a 95% confidence interval between 0.08 to 0.28. A correlation of 0.18 would be associated with a small (3.24%) association between transformational leadership and personal accomplishment.

An unacceptable level of heterogeneity in the correlation between transformational leadership and personal accomplishment was derived from the primary studies observed ($tau^2 = 0.0119$,

Higgin's I^2 = 81%; Q = 26.92, p < 0.0001). This suggests an unacceptable level of variation in the primary studies with respect to uncontrolled or confounding factors.

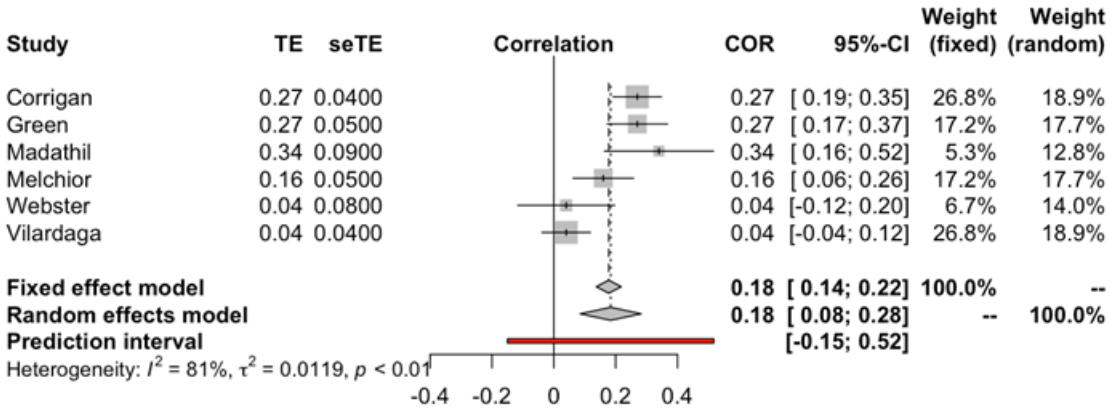

Figure 9: *Random effects model between transformational leadership and personal accomplishment.*

The "leave-one-out" analysis was used to assess influential studies. This measure of influence is depicted in forest plot of leave-one-out effect sizes shown in Figure 10. This analysis shows that none of the studies are disproportionately influencing the results of the analysis.

The quality effect model reported a synthesis of r = 0.2 (95% CI 0.1 to 0.3). The quality effects model evidences a less than 1% increase relative to the random effects estimate. Thus, methodological variation does not have a significant effect on the result.

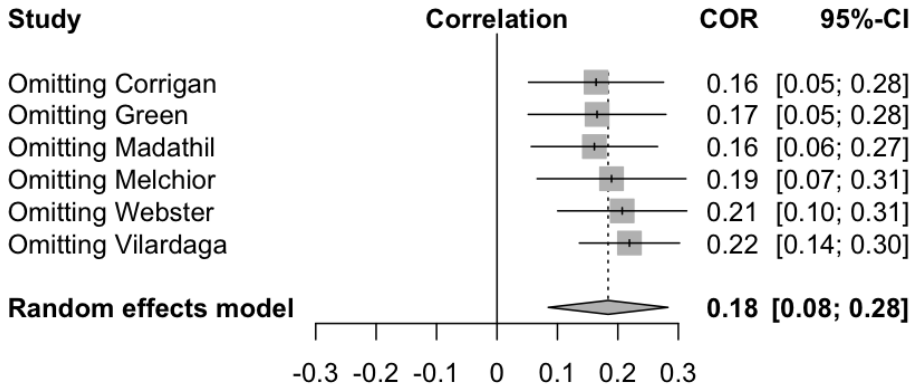

Figure 10: Leave-one-out forest plot analysis for correlation of transformational leadership and personal accomplishment.

The funnel plot of the correlation between transformational leadership and personal accomplishment is presented in Figure 11. As can be seen from Figure 11 the outcomes reported for the correlation between transformational leadership and personal accomplishment do conform to normal expectations and there is no evidence of publication bias.

Using the Rosenthal (1979) algorithm, 152 unpublished null studies are required to reduce to non-significance of the meta-analytic effect based on the six included studies. Accordingly, this effect is robust to publication bias.

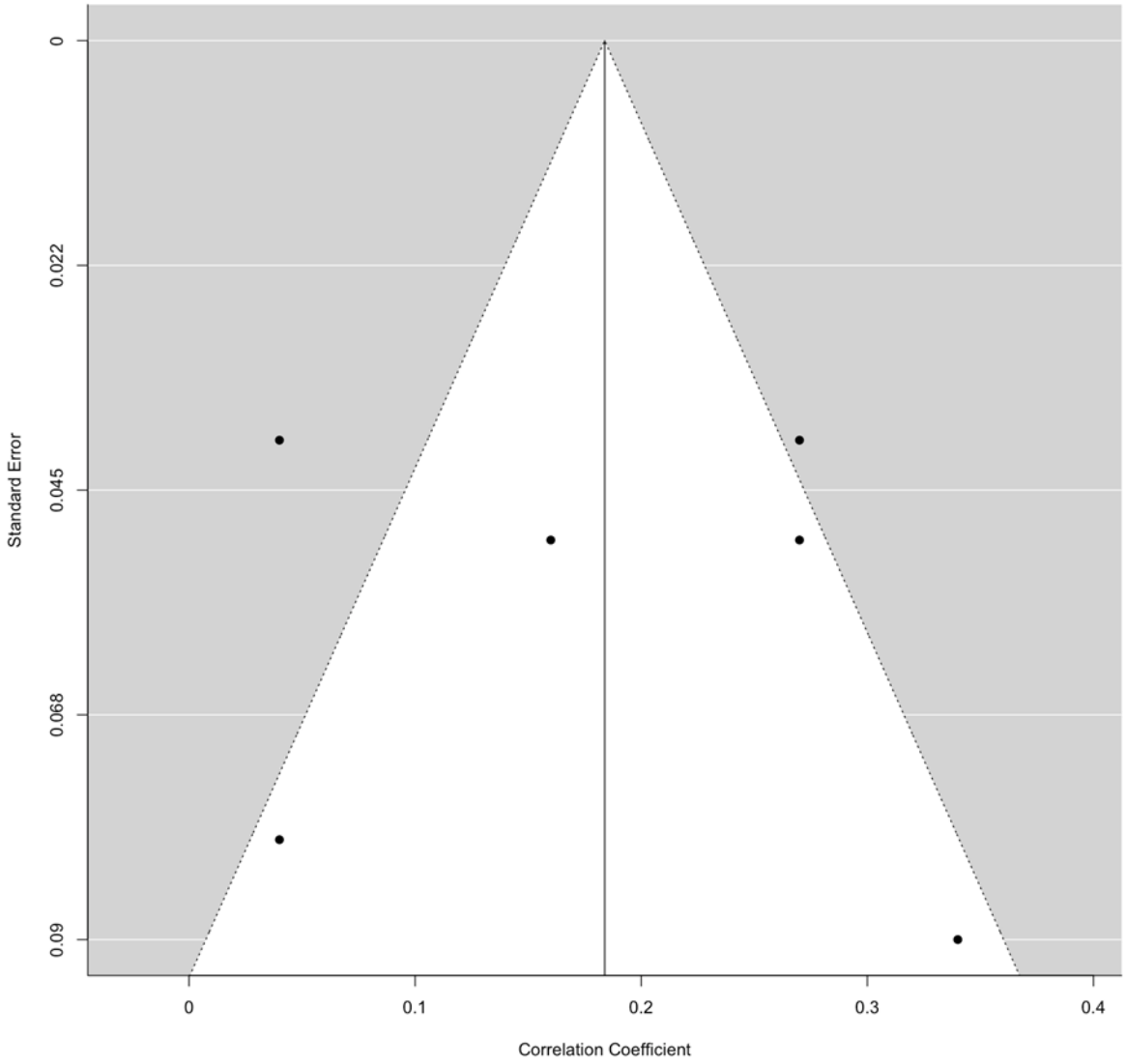

Figure 11: The funnel plot of the correlation between transformational leadership and personal accomplishment.

Discussion

The present meta-analysis of nine published cross sectional studies comprising of over 3400 participants, demonstrates and quantifies the association between transformational leadership and burnout amongst mental health professionals. With burnout being comprised of three components, this review examined the relationship between transformational leadership and the three components; emotional exhaustion, depersonalisation, and personal accomplishment.

The first question that this meta-analysis aimed to investigate was what the evidence for the association between mental health professionals' level of emotional exhaustion and the degree of perceived transformational leadership style shown by their managers. This study found that there was a small significant negative association between transformational leadership and emotional exhaustion, in other words the more a mental health professional perceives their manager to be displaying higher degrees of transformational leadership behaviours, the less they will experience emotional exhaustion. There was little evidence of publication bias found, so the estimated association can be generalised to other mental health professionals beyond those included in this meta-analysis. Despite the difference in measures used to assess emotional exhaustion and leadership, heterogeneity was not apparent.

Secondly, this meta-analysis explored the evidence for the association between mental health professionals' levels of depersonalisation and the degree of their perceived transformational leadership style shown by their managers. A small significant negative association was found, meaning that the more a mental health professional perceives their manager to display higher levels of transformational leadership, the less they will experience depersonalisation. There was evidence of some degree of publication bias, however analysis showed this to have a negligible effect on the outcome reported.

Lastly, the review investigated the evidence for the association between mental health professionals' levels of personal accomplishment and the degree of perceived transformational leadership style shown by their managers. A small significant positive association was found, meaning the more a mental health professional perceives their manager to display higher levels of transformational leadership, the higher their levels of personal accomplishment will be. This review found no evidence of publication bias, however there were high levels of heterogeneity within the studies.

The higher levels of heterogeneity in personal accomplishment may be as a result of how personal accomplishment has been defined. Although Maslach (1981) includes a diminished sense of personal accomplishment as a facet of burnout, more recent arguments in the literature have argued that personal accomplishment is a consequence to burnout rather than a defining feature (Schaufeli, Bakker, Hoogduin, Schaap & Kladler, 2001). Mental health professionals' levels of personal accomplishment may also be influenced by events on the day, for example a mental health professional who has just had a positive interaction with their leader may rate personal accomplishment higher, however this feeling may not be as prolonged as the other facets of burnout. This may be captured using different methodological designs, for example Breevaart et al. (2014) found that daily transformational leadership behaviours were related to naval cadets' daily levels of work engagement by using a diary study.

This is the first meta-analysis that has looked at the association between transformational leadership and burnout in mental health services. Overall, higher levels of transformational leadership were found to be associated with lower levels of emotional exhaustion and depersonalisation as well as with higher levels of personal accomplishment. The correlations were small, although this is similar to findings of other studies in the generic leadership

literature (e.g. Harms et al., 2017) and in other healthcare settings (e.g. Lewis and Cunningham, 2016). While it could be argued that the current results are not too surprising, they are nevertheless important, as they show a consistent association between leadership in mental health workplace settings. These results serve to highlight the role that leaders may play in the health and well-being of the employees that they lead although direct causation cannot be assumed.

Clinical Implications

This review has found transformational leadership to have a small but consistent association with mental health professionals' levels of burnout. Although one cannot assume causation, there may be a benefit in pursuing interventions to help develop leaders' transformational behaviours. However, organisations should not focus employee health and well-being interventions solely on leadership as the amount of variation explained has been found to be small.

Indeed, other factors such as low job resources (Adriaenssens, De Gucht, & Maes, 2015), a lack of organisational support, colleague support and role clarity (Maslach, & Leiter, 2016; O'Connor et al., 2018) have also been shown to be associated with burnout. Furthermore, an individual's ability to cope has been found to be a determinant of burnout with individuals who use passive and avoidant coping strategies more likely to experience burnout (Adriaenssens et al., 2015). Therefore, interventions that focus on developing coping strategies, improving interpersonal skills, increasing social support and improving communication skills have been found to effectively reduce burnout (Wiederhold, Cipresso, Pizzioli, Wiederhold, & Riva, 2018).

Nevertheless, it would be important for leaders to be aware of the impact that their leadership style can have on those that they lead. Following on from this, using feedback tools that allow managers to learn how they are perceived by followers will allow leaders the opportunity to change the way in which they lead dependent on the feedback. It would be important for this feedback to be confidential to ensure that the respondents feel able to provide honest feedback and feedback is gathered from a sample that is representative of the workforce that the leader leads.

Furthermore, it is known that leadership training can effectively enhance transformational leadership behaviours (Barling, Weber, & Kelloway, 1996). Schwarz, Hasson, & Tafvelin (2016) found that a leadership training intervention focussed on increasing transformational leadership behaviours and contingent rewards in order to increase safety in the workplace to be effective. Leaders involved in the intervention rated higher levels of transformational leadership post intervention and their employees reported their work place to be a safer place to work as a result of the intervention. Therefore, for those leaders whose feedback may highlight some deficits in transformational leadership behaviours, it would be helpful for these leaders to be provided with the opportunity to attend training programmes aimed at enhancing transformational behaviours.

Limitations

A limiting factor of these results is that they are based on a small set of studies due to the limited published research in the area. As of result of this, additional moderator analysis could not be employed and therefore this review is not able to determine whether transformational leadership is more effective in different mental health settings, for example working with children, inpatient settings or whether transformational leadership is more effective for different professional groups.

The majority of studies included in this review were conducted in the USA. Given there are differences in how mental health professionals work in different countries and the different types of service delivery models, these findings may not represent the experiences of mental health professionals in countries that are not included in the review, therefore caution should be made when interpreting these results.

It should be noted, that due to the research methodology of all the studies included in this review, firm causal conclusions cannot be drawn. Furthermore, due to all the studies relying on same source data collection (i.e. all from the mental health professional), the results are not able to rule alternative hypotheses out, such as employees experiencing high levels of burnout perceive their leaders to display fewer transformational leadership behaviours which may be as a result of bias or they notice less helpful transformative behaviours in their leaders.

Future directions

The findings of this meta-analysis suggest that there is evidence for a small consistent association between transformational leadership and burnout in mental health professionals. This relationship should continue to be investigated due to the relatively small amount of published studies that have investigated the association and the limited amount of published intervention studies that targeted leadership behaviours. Future research should employ different research designs to fully investigate whether there are direct effects of leadership styles on burnout, for example longitudinal studies, diary studies and intervention to fully explore the impact of transformational leadership behaviours on follower's health. This may be particularly helpful when examining personal accomplishment due to the high levels of heterogeneity found in studies in this review.

The studies included in this review did not attempt to recruit mental health professionals who were experiencing high levels of burnout, and previous qualitative research in other setting found that workers experiencing high levels of stress were not likely to volunteer to participate in research (Ancona & Mendelson, 2014). Therefore, it may be helpful for future research to be aimed at clinical groups to understand the relationship between transformational leadership and burnout in clinical groups who are experiencing high levels of burnout.

In addition, it may be helpful to explore the impact of leaders on the working environment. In O'Connor's et al. (2018) review of prevalence and determinants of burnout in mental health professionals, found that aspects of the working environment (e.g. role clarity and a sense of being fairly treated) may be important factors. Other research has found that staff morale can be affected by a lack of communication from their seniors (Kanste, Kyngas, & Nikkilia, 2007) and that employees who feel well supported, receive good feedback and have autonomy are less likely to develop burnout (Melchior et al., 1999). Thus, future research should consider how leaders' interactions with the working environment might explain the relationship between leadership and burnout which has been shown to be the case for general hospital nurses (Lewis and Cunningham, 2016). This may be even more pertinent in mental health services, considering the unique environmental demands placed upon mental health professionals that make them more vulnerable to burnout (Maslach & Leiter, 2007).

Considering the methodological limitations of the included studies, as discussed above, future research should employ longitudinal designs and consider multiple source data collection so that robust causal inferences can be drawn.

Conclusion

This meta-analytical review investigated the evidence in the literature concerning the association between mental health professionals' perception of their managers' leadership style and their own levels of burnout. It was found that the evidence currently suggests that there is a small but consistent association between transformational leadership and the two main components of burnout; emotional exhaustion and depersonalisation. Future research should continue to investigate this association, attempt to employ longitudinal research designs and consider investigating how leaders' interactions with the working environment may explain the association.

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Chapter Two – Empirical Research Paper:

Burnout and work engagement in mental health professionals: The relationship between transactional and transformational leadership and the working environment.

Supervised by

Dr Theresa Powell

Abstract

Background

Research suggests that professionals working in a mental health environment are particularly vulnerable to developing burnout. The leadership style of managers has also been shown to have an impact on workplace, which may be explained through the leader's influence on the working environment. The present study explores the relationship between leadership styles (transformational and transactional) and workplace wellbeing (burnout and work engagement), and whether this relationship is mediated through the working environment.

Methodology

This was a cross-sectional survey design in which 149 mental health professionals completed an on-line survey consisting of the Maslach Burnout Inventory, Areas of Worklife Scale and a recently developed leadership measure by Jensen et al. (2016). Hypotheses were tested using Pearson's correlation coefficients as well as mediation and moderated mediation analysis.

Results

Transformational leadership was significantly correlated to all facets of burnout and work engagement. This was the same for transactional leadership, except no significant correlation was found with personal accomplishment**.** Mediation analysis suggested that working environment characteristics fully conditioned the relationship between both transformational and transactional leadership styles and most facets of workplace wellbeing. There was no evidence that transformational leadership moderates the relationship between transactional leadership and the working environment.

Discussion

The present study is consistent with previous research that has shown a relationship between leadership style, burnout and work engagement and provides new insight into the fact that leaders may impact on these variables through their influence on the working environment.

Introduction

Burnout has attracted a significant amount of attention from occupational health researchers due to its original conceptualisation as a form of extreme physical and psychological exhaustion which is typically caused by emotionally demanding experiences in the workplace (e.g. Farber; 1983; Maslach, 1982; Pines, Aronson & Kafry, 1981). In a healthcare context, the working environment continually places physical, social and psychological demands on healthcare professionals (Duquette, Kérouac, Sandhu & Beaudet, 1994; Leiter & Maslach, 2009) which may explain the high prevalence rate of burnout in many healthcare settings (e.g. O'Connor, Neff & Pitman, 2018; Parola, Coelho, Cardoso, et al., 2016).

Burnout is defined as a psychological syndrome that consists of three main factors; emotional exhaustion, depersonalisation and a diminished sense of personal accomplishment (Maslach, 1998). Emotional exhaustion is defined as the overburdened and depletion of emotional resources and depersonalisation is described as a negative and cynical attitude towards people (Maslach, 1998). The positive end of these two dimensions is known as work engagement. Although engagement and burnout are related constructs, research has consistently found that the two states are not dependant on each other (Demerouti, Mostert, & Bakker, 2010; Schaufeli, Leiter, Maslach & Jackson, 1996).

Work engagement consists of three dimensions; absorption, vigor and dedication. Absorption is defined as employees' concentration, engrossment in their work and work being pleasurable (Gonzalez-Roma, Schaufeli, Bakker & Lloret, 2006; Langelaan, Bakker, Van Doornen & Schaufeli, 2006). Vigor is defined as high levels of energy and mental resilience, investment in their work and demonstrating high levels of persistence even when faced with

difficulties (Schaufeli & Bakker, 2004). Dedication denotes a sense of significance, enthusiasm, inspiration, pride and challenge (Schaufeli & Bakker, 2004, 2010).

Research into burnout has found that the degree to which healthcare professionals experience burnout is associated with adverse patient events such as falls, medication errors and increased patient complaints (Laschinger & Leiter, 2006). It also has been shown to affect a healthcare organisation's ability to operate smoothly and sustainably due to the association between burnout, early retirement (Henkens & Leenders, 2010), increased sick leave amongst other factors (Soler, Yaman, Esteva, Dobbs et al., 2008). Whereas, work engagement, in the generic leadership literature, has been associated with customer loyalty, successful organisational change, managers' self-efficacy, balance, and harmony (Gupta & Sharma, 2016). In healthcare environments, work engagement has been associated with job satisfaction and job retention (Underdahl, Jones-Meineke & Duthely, 2017).

In a recent meta-analytical review by O'Connor et al. (2018) the authors reported high burnout rates in mental health professionals. Factors specific to the mental health field have been suggested to make mental health professionals more vulnerable to burnout (Maslach & Leiter, 2007) such as patient suicide and the complex nature of therapeutic relationships (Chemtob, Hamada, Bauer, Kinney, 1988; Rossler, 2012). O'Connor et al. (2018) recommended that interventions to prevent and reduce burnout should focus on professional autonomy, manageable caseloads, and the development of good team functioning.

This recommendation coincides with mounting evidence that the working environment can influence employees' burnout and engagement levels. Melchior, Philipsen, Abu-Saad, Halfens, Van de Berg and Gassman (1999) reported that low levels of burnout were associated with employees who had good support, feedback, job clarity and autonomy. A later study by Kanste, Kyngas, & Nikkila (2007) concluded similar findings that mental

health professionals who experience a lack of communication from their seniors (e.g. lack of constructive feedback and role clarity) can have serious consequences for staff morale.

One model that incorporates important characteristics of the working environment is the areas of work life (AWL) model (Leiter & Maslach, 2004). The AWL identifies six important characteristics of the work environment that can be expected to influence the chance of burnout developing amongst employees in that environment (Maslach, 2011). These are employees' perceptions of; a manageable workload, control over one's work, fair recognition and reward for work, community within the workplace, fairness in management and treatment of staff and in organisational promotion decisions, and alignment of personal values with the organisation and its goals. Research has shown that low levels of any of these AWL characteristics can lead to burnout (Cordes & Dougherty, 1993; Leiter & Maslach, 2009) whereas sufficient levels of these AWL characteristics can potentially protect employees from burnout and encourage engagement (Koyuncu, Burke, & Filksenbaum, 2006).

It could be claimed that the leader is the most influential factor on the work environment. Within a work context, a leader is the person who is responsible for taking charge and guiding the work-related efforts of others and Smircich and Morgan (1982) argue that leaders are able to "define and shape" the working environment. Therefore, it has been suggested that leaders may be able to influence employees' burnout and engagement levels through their on-going interaction with the work environment (Breevaart, Bakker, Hetland, Demerouti, Olsen & Espevik, 2014).

Transformational leadership is the most researched leadership theory in generic and healthcare leadership literature (Judge & Piccolo, 2004). This research has shown a positive relationship between transformational leadership and job motivation (Macey and Schneider,

2008), job satisfaction, organisational commitment (Pillai, Schriesheim and Williams, 1999), job performance (Bass, Avolio, Jung and Berson, 2003), and organisational effectiveness (Moore, 2008). Furthermore, a meta-analytic review by Harms, Crede, Tynan, Leon and Jeung (2016) concluded that a higher level of transformational leadership was associated with followers experiencing lower levels of burnout. Breevaart et al. (2014) also found that transformational leadership contributes to followers' engagement and Hayati, Charkhabi and Naami (2014) argued that employees' levels of engagement increase when their manager is able to increase their optimism through their transformational leadership style.

Bass (1985) incorporated transformational leadership in the full-range leadership model which also includes transactional and laissez-faire leadership styles. Transformational leadership is defined as the directing and inspiring individual efforts by transforming and motivating employees. Transactional leadership style is based on behaviours where the leader rewards employees for high effort and/or good performance or sanction employees if their effort or performance is unsatisfactory. Transformational and transactional leadership therefore make up the active components of the full range leadership theory (Antonakis, 2012). It has been argued that rather than being opposite ends of a spectrum, transformational leadership may 'augment' any positive impact of transactional leadership (Bass & Avolio, 1993). The passive component of the full-range leadership model is known as laissez-faire which is defined as the absence of an active leader.

The full-range theory is commonly explored using the Multi-Leadership Questionnaire (MLQ) (Bass & Avolio, 1995; Van Knippenberg & Sitkin, 2013). The MLQ measures transformational leadership style on four dimensions: a) idealised influence (also known as charisma); b) inspirational motivation; c) individualised considerations; and d) intellectual

stimulation. Transactional leadership includes three dimensions: a) contingent reward, b) active management by exception and c) passive management by exception.

The Full Range Leadership Model and the MLQ have been criticised on the basis that the conceptualisation of leadership confounds leadership strategies with their effects (Judge & Piccolo, 2004), i.e. transformational leadership is predominantly described by its effects rather than leadership behaviours, which prevents a rigorous analysis of the individual components (Van Knippenberg & Sitkin, 2013). Jensen, Andersen, Bro and Bollingtoft, (2016) argue that the distinctive theoretical aspect of transformational leadership is the leader's intent to activate employees' higher order needs. Therefore, the core ambition of a transformational leader is to induce employees to surpass their own self-interest for the sake of the organisation.

It has been suggested that transactional leadership may lack the "motivational power and inspirational appeal" to stimulate their employees' work engagement (Tims, Bakker and Xanthopoulou 2011). It is thus possible that when a leader's transactional style is augmented by characteristics of transformational leadership, this acts further on the working environment and thus influences burnout or engagement. However, there is limited research that investigates transactional leadership's relationship with burnout or engagement. Kara, Uysal, Sirgy & Lee (2013) reported that higher levels of transactional leadership were found to positively influence employees' quality of life and Breevaart et al. (2014) found that transactional leadership positively influenced workers' levels of engagement. This therefore warrants further investigation.

Considering the findings of O'Connor et al. (2018) findings of high burnout rates in mental health professionals and the evidence that leaders may impact followers' levels of engagement and burnout through their interaction with the working environment, this study

will investigate the effect that transformational and transactional leadership styles have upon mental healthcare professionals' levels of burnout and engagement, and whether this relationship may be explained by the leaders' interaction with the working environment.

The following is expected:

H^{1a}: Mental health professionals' perceptions of their managers' transformational leadership style will be negatively associated with their levels of emotional exhaustion and depersonalisation and be positively associated with their levels of personal accomplishment and work engagement.

H^{1b}: Mental health professionals' perceptions of their managers' transactional leadership style will be negatively associated with their levels of emotional exhaustion and depersonalisation and be positively associated with their levels of personal accomplishment and work engagement.

H^{2}: The relationship between mental health professionals' perceptions of their managers' transformational and transactional leadership style and their levels of burnout and work engagement will be fully conditioned by the working environment.

As noted above, Bass (1985) argues that transformational and transactional leadership styles do not represent opposite ends of a spectrum. Rather, transformational leadership adds to the effect of transactional leadership, known as the augmentation effect, by building on the transactional base by generating extra effort and increasing performance of followers (Bass & Avolio, 1993).

Considering the proposed influence of leadership style on employees' levels of burnout and work engagement and the proposition that this is explained by their influence over

characteristics of the working environment (Breevaart et al., 2014). This study will explore whether transformational leadership augments the effects of the transactional base by influencing the working environment and hence influencing burnout.

Therefore, the following is expected.

> **H^3:** Transformational leadership will moderate the association between transactional leadership style and the working environment which will in turn influence the degree to which mental health professionals experience burnout and work engagement.

Method

Design

This cross-sectional web-based survey was hosted by Lime Survey. Ethical approval for this study was granted by the University of Birmingham's Science, Technology, Engineering and Mathematics Ethical Review Committee (ERN_17-1562; approved 2nd August 2018) (see Appendix A) and sponsorship was agreed by the University of Birmingham Research Governance team (RG_17-231) (see Appendix B). Approval was also gained from the National Health Service (NHS) Health Research Authority (IRAS 238258; approved 22nd August 2018) (see Appendix C).

Procedure

All 60 mental health NHS trusts in England were invited to participate in the study via their research and development departments. Twenty of these NHS sites confirmed their capacity

and capability to participate in the study and agreed to advertise the study via their weekly communications bulletin and/or circulate the survey to staff via email.

Healthcare professionals working in a face to face clinical capacity for mental health services in England provided by the National Health Service (NHS) were invited to the online study. Healthcare professionals who were interested in finding more about the study accessed the participant information sheet online via a hyperlink. There was an option to continue to the survey for those who wished to participate after reading the participant information sheet.

All responses were anonymous and confidential. Participants were not rewarded for their participation in the study.

Participants

Inclusion criteria for the study were 1) healthcare professionals working in a mental health service, 2) working in a face to face clinical capacity with service users, 3) had been in their role for longer than three months, and 4) their manager had been in their role for longer than three months.

Initially, participants were asked four inclusion criteria questions and of the 266 participants that agreed to participate in the study, 47 did not meet the inclusion criteria and therefore took no further part in the study. Of the 219 participants who began the study, 70 did not complete the study which resulted in a final sample of 149 mental health professionals (68% completion rate). Figure 1 illustrates this process and the sample characteristics can be found in Table 1.

Using the estimates of required sample size to detect a mediated effect (Fritz and MacKinnon, 2007) a sample size of 71 participants would have sufficient power to detect a

moderate effect size (beta=.39) and 148 participants would be able to detect a mediated path with a beta coefficient of approximately 0.26.

Accordingly, the current sample size of 149 participants would be sufficient to detect moderate level effects sizes. However, in clinical practice, small effects are of limited practical utility as we wish to identify effects that are sufficient to warrant inclusion in clinical formulation.

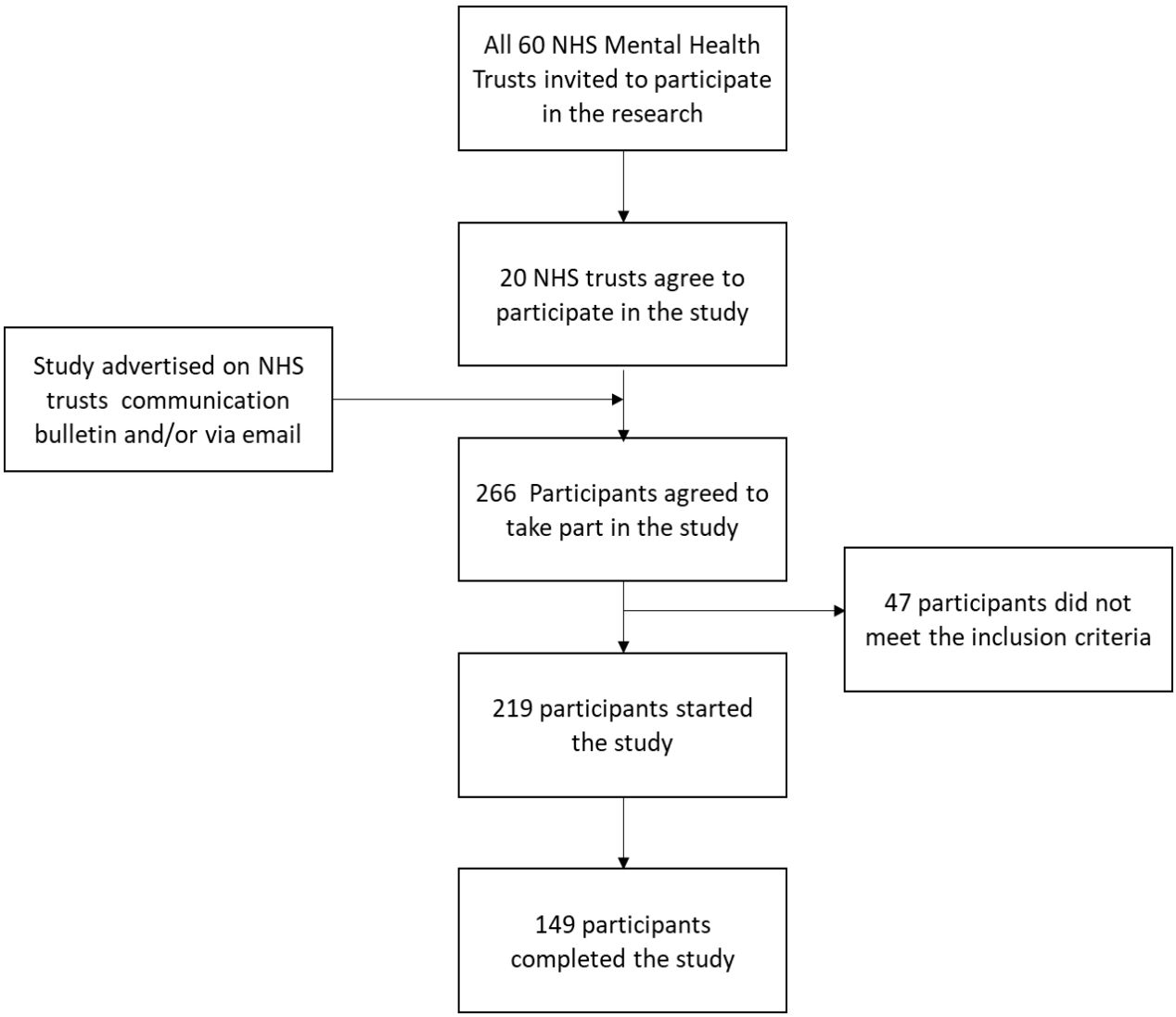

Figure.1: Flow chart of recruitment process.

Table 1

Sample Characteristics

Variables	**N**	**%**
Demographics		
Gender		
Male	33	22
Female	113	76
Prefer not to say	3	2
Age		
21-29	24	16
30-39	36	24
40-49	39	26
50-59	38	26
60 +	11	7
Prefer not to say	1	< 1
Profession		
Healthcare Assistant	5	3
Doctor	5	3
Nurse	60	40
Occupational Therapist	14	9
Physiotherapist	2	1
Psychologist	27	18
Social Worker	8	5
Support Worker	15	10
Other	1	< 1
Prefer not to say	12	8
Length of time working in the NHS		
3-6 months	2	1
7-11 months	2	1
1-2 years	7	5
3-5 years	30	20
6-10 years	25	17
11-15 years	32	22
16-20 years	18	12
21+ years	33	22
Length of time in current position		
3-6 months	11	7
7-11 months	9	6
1-2 years	38	26
3-5 years	41	28
6-10 years	25	17
11-15 years	14	9
16-20 years	4	3
21+ years	7	5

Measures

The variables in this study (work engagement, burnout, leadership style, and the working environment) were measured using questionnaires. Participants were asked to rate their current line manager as well as provide some demographic details about themselves.

Demographics.

Participants were asked about their age, sex, profession, length of time in the NHS, and length of time in their current role (see Appendix D).

Burnout.

Burnout was assessed using the Maslach Burnout Inventory Human Services Survey adapted for Medical Personnel (MBI-HSS) (see Appendix E). The MBI-HSS (Maslach, Jackson, & Leiter, 1996) is a widely recognised measure for burnout. Participants were asked to respond to 22 statements regarding how often they experience; emotional exhaustion, depersonalisation, and personal accomplishment associated with their work on a scale of 0 (never) to 6 (every day). The measure provides scores for the three subscales with higher scores indicating higher levels of emotional exhaustion, depersonalisation and personal accomplishment. The MBI-HSS has been used substantially in the literature to measure burnout in mental health professionals, and has been shown to have acceptable Cronbach α levels (emotional exhaustion = 0.9, depersonalisation = 0.76, personal accomplishment 0.76; Gold, 1984; Iwanicki & Schwab, 1981).

Engagement.

Work engagement was assessed with the 17-item Utrecht Work Engagement Scale (UWES) (Schaufeli, Baker, & Salanova, 2006) (see Appendix H). Items for this questionnaire

measures the three dimensions of work engagement; vigor, dedication, and absorption. Participants were asked to respond with the frequency with which each statement applied on a 7-point scale from 0 (never) to 6 (always). This measure provides scores for the three subscales and a total engagement score. Higher overall scores indicate higher work engagement. The UWES has been shown to have good Cronbach's α scores (0.93) (Schaufeli, Baker, & Salanova, 2006).

Working Environment Characteristics.

Participants' perceptions of their working environment were measured using the Areas of Worklife (AWL) Scale (Leiter & Maslach, 2002) (see Appendix F). Participants reported their perceptions of the absence or presence of the six AWL work environment characteristics (i.e., manageable workload, control, reward, community, fairness, and values). There are 29 statements, participants were asked to respond in the form of ratings of agreement. The AWL is a Likert-type scale; response options range from 1 (strongly disagree) to 7 (strongly agree.) Higher scores reflect a stronger and more positive perception of each work environment characteristic. The AWL scale has shown to have acceptable levels of Cronbach's α score throughout the six subscales (Workload = 0.67, control = 0.83, reward = 0.78, community = 0.8, fairness = 0.8, values α = 0.73) (Leiter & Maslach, 2002).

Leadership Style.

As discussed, previous conceptualisation of transformational and transactional leadership styles has been criticised for confounding leadership with its effects (Van Knippenberg & Sitkin, 2013). Therefore, the Transformational and Transactional Leadership Measure (Jensen et al., 2016) (see Appendix G) was used in this study as it is designed to meet both critiques by focussing on leadership behaviour rather than effects (Jensen et al., 2016). Participants'

perception of their line managers' leadership style was measured using a recently developed measure by Jensen et al. (2016). This measure assess the degree to which participants feel their managers are transformational (7 items) and transactional (12 items). Participants responded in the form of agreement with 1 (strongly disagree) to 5 (strongly agree) with higher scores on each subscale indicating higher levels of transactional and transformational leadership styles. This measure has been shown to have acceptable levels of Cronbach α scores (transformational = 0.89 and transactional = 0.83) (Jacobsen and Andersen, 2019).

Statistical Analyses

Data analyses were carried out using SPSS (v.24; IBM CORP., 2013). Descriptive statistics were used to examine the score distributions for all variables. The sub-dimension scores within the work engagement measure were significantly inter-correlated, therefore only the total engagement score was used. All analyses in this study were evaluated as significant at α = .05 level.

All scales and subscales included in this study were analysed using SPSS to examine their internal reliability. Most subscales achieved an acceptable level of internal reliability ($\alpha \geq .70$ (George & Maller, 2003). Table 2 shows alpha levels and the final number of items in each scale (three items were removed from the leadership measure in order to ensure it reached an acceptable level of internal reliability).

Hypotheses 1a and 1b were tested using Pearson's correlation coefficients. Hypothesis 2 was tested using the PROCESS analytical tool (Hayes, 2013), which makes it possible to test parallel multiple mediatory models within the SPSS software program using a form of ordinary least squares regression analysis. This software tool allows for the simultaneous testing of series of mediators or intervening variables as conditioning factors that influence

the relationship between an independent variable and outcome. Hayes (2013) and Preacher, Rucker & Hayes (2007) recommend calculating bias-corrected 95% confidence intervals from bootstrapped samples as an inferential test. This is because indirect effects involve the product of regression coefficients which are unlikely to be normally distributed which violates a core assumption of traditional inferential tests (Preacher et al., 2007). In this study, when calculating an indirect effect if the bootstrapped 95% confidence interval does not include zero then the indirect effect was deemed to be significant. Using this approach is considered to be more statistically powerful than a normal-theory approach. The total indirect effect for the mediating variables is calculated and the mediator variables are expressed as effects. The proportion of the total indirect effect for all mediators will be reported in order to highlight the relative contribution of the indirect effect.

Hypothesis 3 was tested using moderation analysis. It has been argued that for moderation analyses variables should be mean-centred and standardised (Aiken & West, 1991) to avoid issues of multicollinearity and to aid interpretation of main effects in moderation analyses. However, this has been demonstrated to be unnecessary (Hayes, 2013), and as main effects were not the focus of the present study, it was decided not to mean-centre or standardise variables prior to moderation analysis to aid clarity.

Table 2

Cronbach's alpha values

Subscale	Cronbach's alpha	Number of items
MBI-HSS		
Emotional Exhaustion	0.92	9
Depersonalisation	0.73	5
Personal Accomplishment	0.69	8
UWES		
Total	0.91	
AWL Scale		
Workload	0.85	5
Control	0.81	4
Reward	0.87	4
Community	0.87	5
Fairness	0.84	6
Values	0.78	4
Leadership Style		
Transformational	0.95	7
Transactional	0.89 (item 16,17,19 removed)	9

Results

Means and standard deviations of the study variables are shown in Table 3. Maslach & Jackson (1996) reported that high levels of emotional exhaustion in mental health professionals are considered to be scores that are equal to or above 27. The sample's mean emotional exhaustion score is just below this (26.79) indicating high levels of emotional exhaustion in the sample. Depersonalisation scores for mental health professionals between 5 and 7 are consider to be in the average range; the sample's mean depersonalisation score (6.68) fell into this category. Mental health professionals who score over 28 on the personal accomplishment scale are considered to be experiencing high levels of personal accomplishment, the sample's mean personal accomplishment score is well above this

(36.87) indicating high levels of personal accomplishment (Maslach & Jackson, 1996). The mean scores for emotional exhaustion, depersonalisation and personal accomplishment are all similar to previously published values in mental health professionals as described by O'Connor et al. (2018).

Schaufeli & Bakker (2004) reported that average levels of work engagement are considered to be scores that fall between 3.07 to 4.66 in a normative sample. The sample's mean work engagement score (3.92) indicated average levels of work engagement in the sample.

Leiter & Maslach (2006) report that scores between 2.33 and 3.5 for participants rating their perception of their workload in a normative sample as moderate, the samples mean value for workload (2.57) fell into this range. Moderate scores for control were considered to be scores between 2.67 and 4, the samples mean value for control fell into this range (3.07). Reward scores were considered to be moderate if fell between 2.75 and 3.8, again the sample fell within the moderate range (3.34). Community scores between 2.8 and 4 were considered to be moderate, with the samples score falling into this range (3.54). Fairness scores were considered to be moderate within the range of 2.33 and 3.33. The samples mean fairness score fell into the moderate range (2.85). Lastly, moderate value range were scores between 2.75 and 3.75, with the samples scores again placing in the moderate range (3.2) (Leiter & Maslach, 2006).

Jensen et al. (2016) did not report qualitative categories for scores on the leadership measures. Nevertheless, mean scores for transformational (22.09) was 63% of the total available score and transactional leadership mean score (26.77) was 67% of the total available score. These results are similar to another study that investigated leadership styles in other public service organisations (Jensen & Bro, 2018).

Table 3

Table of mean scores, standard deviations and range responses for all measures.

Variables	Mean	SD	Range
MBI-HSS (MP)			
Emotional Exhaustion	26.79	12.82	2-53
Depersonalisation	6.68	5.87	0-21
Personal Accomplishment	36.87	6.35	19-48
Work Engagement Scale			
Total	3.92	0.98	0.76-5.76
AWL Scale			
Community	3.54	0.84	1-5
Control	3.07	0.89	1-5
Fairness	2.85	0.8	1-5
Reward	3.34	0.98	1-5
Values	3.2	0.79	1-5
Workload	2.57	0.93	1-5
Leadership Questionnaire			
Transformational Total	22.09	7.54	7-35
Transactional Total	26.77	8.08	8-40

Testing H^{1a}.

Mental health professionals' perceptions of their managers' transformational leadership style will be negatively associated with their levels of EE and depersonalisation and be positively associated with their levels of personal accomplishment and work engagement.

In a correlation model, supporting H^{1a}, mental health professionals' perceptions of their managers' transformational leadership style was associated with their levels of burnout and work engagement. All correlations can be found in Table 4. Transformational leadership style has a small but significant negative correlation with emotional exhaustion (-0.25) and depersonalisation (-0.18). Also supporting H^{1a}, transformational leadership style was found to

have a significant positive correlation with personal accomplishment (0.24) and work engagement (0.31).

Testing H^{1b}.

Mental health professionals' perceptions of their managers' transactional leadership style will be negatively associated with their levels of EE and depersonalisation and be positively associated with their levels of personal accomplishment and work engagement.

Supporting H^{1b}, results from a correlational model show that mental health professionals' perceptions of their managers' transactional leadership style was associated with emotional exhaustion (-0.3), depersonalisation (-0.21) and work engagement (0.3). However, not supporting H1b, transactional leadership style was not significantly correlated with personal accomplishment.

The generalised least squares statistical approach was used to compare the elements of the correlation matrix as recommended by Steiger (1980). There were no significant differences between the correlation values for transformational and transactional leadership styles with burnout and work engagement outcomes.

Table 4.0

Pearson's (r) between all study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Leadership Measure												
1. Transformational	1	.7**	-.25**	-.18**	.24**	.31**	.22**	.42**	.43**	.33**	.59**	.35**
2. Transactional		1	-.3**	-.21**	.14	.3**	.26**	.42**	.53**	.38**	.56**	.3**
MBI-HSS												
3. EE			1	.55**	-.38**	-.42**	-.64**	-.46**	-.59**	-.34**	-.45**	-.42**
4. Dep				1	.4**	-.41**	-.31**	-.28**	-.44**	-.29**	-.31**	-.38**
5. PA					1	.68**	.25**	.29**	.45**	.32**	.31**	.31**
UWES												
6. Work Engagement						1	.15	.45**	.56**	.49**	.38**	.44**
AWL Scale												
7. Workload							1	.39**	.42**	.16	.42**	.28**
8. Control								1	.61**	.35**	.52**	.36**
9. Reward									1	.5**	.59**	.46**
10. Community										1	.51**	.37**
11. Fairness											1	.54**
12.Values												1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

EE = Emotional Exhaustion, Dep = Depersonalisation, PA = Personal Accomplishment

Testing H^2

The relationship between mental health professionals' perceptions of their managers' transformational and transactional leadership style and their levels of burnout and engagement will be fully conditioned by the working environment.

A series of multiple mediation analyses were carried out to test H^2. Multiple mediation analysis was not carried between transactional leadership and personal accomplishment as there was no significant correlation. Full details of the analysis are provided below.

Transformational leadership and emotional exhaustion.

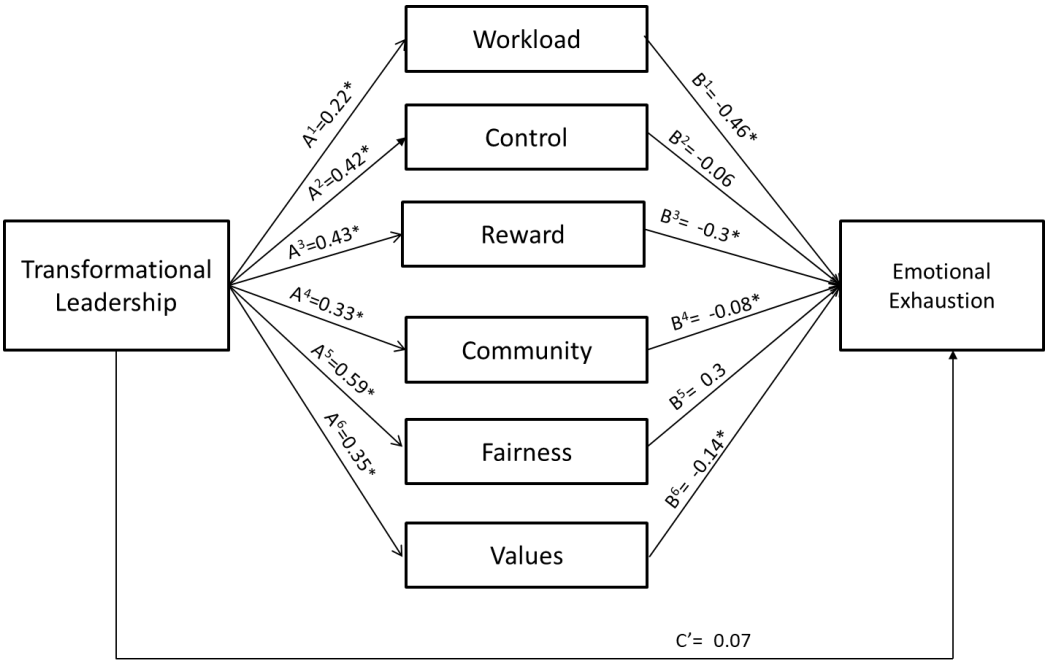

Figure 2**:** *Mediation model showing indirect effect of transformational leadership (X) on mental health professionals emotional exhaustion (Y) through the working environment (M).The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates.*Indicates p<0.05. N=149.* R^2*=0.06.*

Transformational leadership style was positively associated with the working environment variables (path $a_{1\ to}\ a_6$ Figure 2). All working environment variables, apart from fairness, were negatively associated with emotional exhaustion (path $b_{1\ to}\ b_6$). After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transformational leadership and emotional exhaustion was reduced to non-significant levels (c'= 0.07, p=0.34). In traditional methods of mediation analysis, this would indicate full mediation, but in this more comprehensive test of multiple indirect effects, the implication is that the influence of transformational leadership on emotional exhaustion is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

Multiplying the a and b paths together provides the indirect effect (*ab)* as there were multiple mediators, each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect (-0.31). In other words, a one-unit increase in transformational leadership style will result in a 0.31 decrease in emotional exhaustion. A bias corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently less than zero (95% CI = -0.47 to -0.15).

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristics of reward (37.14%) and workload (28.57%). As summarised in Table 4.1, reward and workload were the only two indirect effects for which 95% confidence intervals did not include zero and therefore are deemed as significant.

Table 4.1

Standardized indirect effect of transformational leadership style with emotional exhaustion, with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

TFL to EE	R^2=0.06 F=9.6 p<0.01	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	-0.1	-0.17	-0.02	28.57
Control	-0.02	-0.09	0.04	5.71
Reward	-0.13	-0.22	-0.06	37.14
Community	-0.03	-0.09	0.02	8.57
Fairness	0.02	-0.09	0.13	5.71
Values	-0.05	-0.12	0	14.29
Total	-0.31	-0.47	-0.15	

Transformational leadership and depersonalisation.

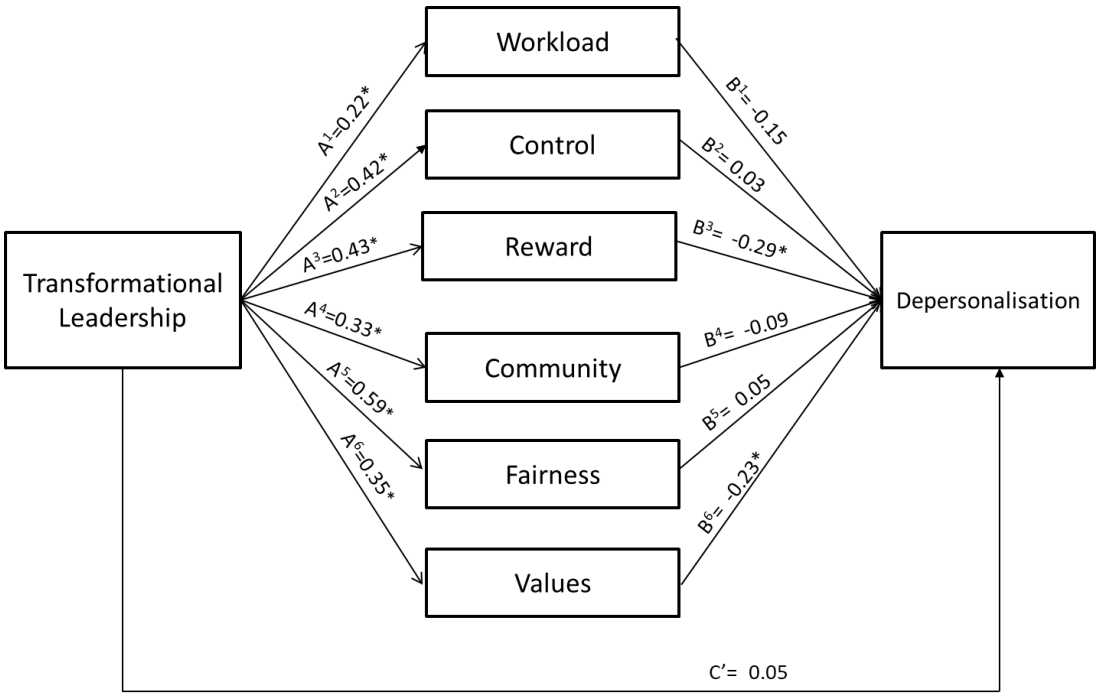

Figure 3: *Mediation model showing indirect effect of transformational leadership (X) on mental health professionals depersonalisation (Y) through the working environment (M). The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.03.*

The relationship between transformational leadership, the working environment variables and depersonalisation is illustrated in Figure 3. Transformational leadership style was positively associated with the working environment variables (path $a_{1\ to}\ a_6$) and all working environment variables, apart from fairness, were negatively associated with depersonalisation (path $b_{1\ to}$ b_6). Multiplying the a and b paths together provides the indirect effect (*ab).* As there were multiple mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect (-0.23). In other words, a one-unit increase in

transformational leadership style will result in a 0.23 decrease in depersonalisation. A bias corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently less than zero (95% CI = -0.39 to -0.08).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transformational leadership and depersonalisation was reduced to non-significant levels (c'= 0.05, p=0.57). This implies that the influence of transformational leadership on depersonalisation is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristic of reward. As reported in Table 4.2, reward accounted for 41.94% of the indirect effect and values accounted for 25.81% of the total indirect effect and were the only two indirect effects that 95% confidence intervals did not include zero and therefore deemed as significant.

Table 4.2

Standardized indirect effect of transformational leadership style with depersonalisation, with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

TFL to Dep	R^2=0.03 F=4.76 p<0.05	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	-0.03	-0.09	0.01	9.68
Control	0.01	-0.07	0.11	3.23
Reward	-0.13	-0.23	-0.03	41.94
Community	-0.03	-0.1	0.03	9.68
Fairness	0.03	-0.11	0.16	9.68
Values	-0.08	-0.16	-0.1	25.81
Total	-0.23	-0.39	-0.08	

Transformational leadership and personal accomplishment.

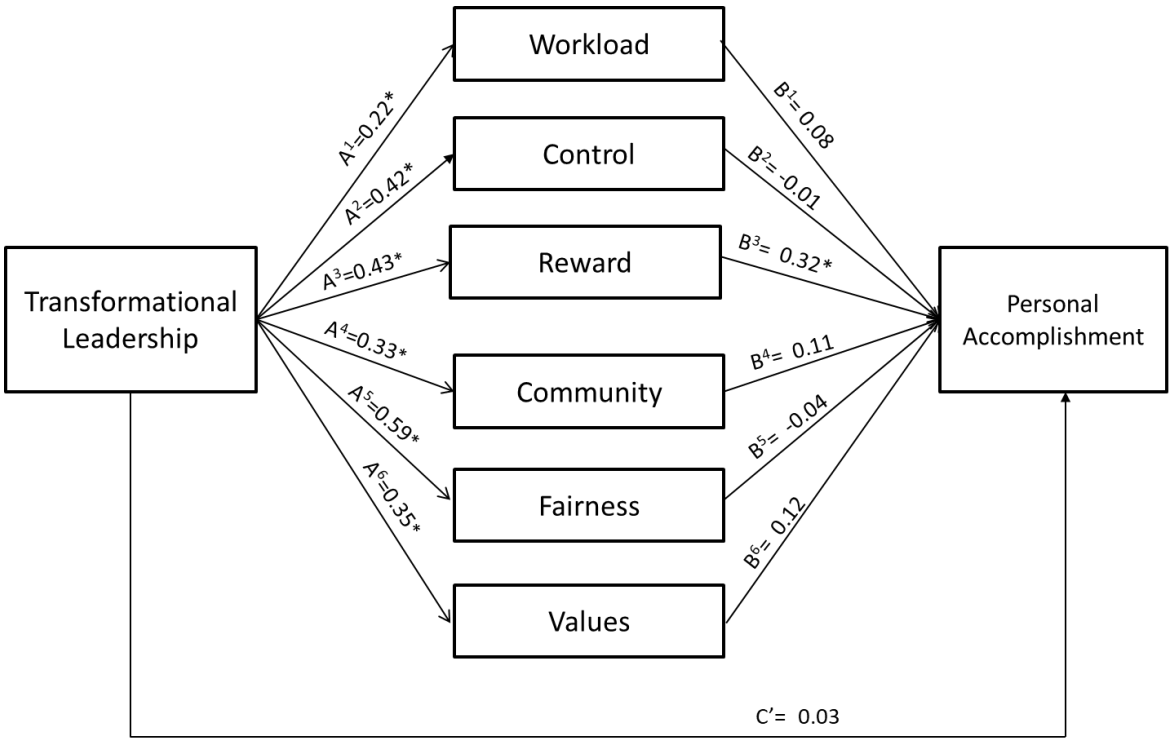

Figure 4: *Mediation model showing indirect effect of transformational leadership (X) on mental health professionals personal accomplishment (Y) through the working environment (M). The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.06*

The relationship between transformational leadership, the working environment variables and personal accomplishment is illustrated in Figure 4. Transformational leadership style was positively associated to the working environment variables (path a_1 to a_6) and all of the working environment variables, apart from fairness and control, were positively associated with personal accomplishment (path b_1 to b_6).

Multiplying the a and b paths together provides the indirect effect (*ab).* As there were multiple mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect (0.21). In other words, a unit increase in transformational leadership will result in a 0.21 increase in personal accomplishment. A bias corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently more than zero (95% CI = 0.08, 0.34).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transformational leadership and personal accomplishment was reduced to non-significant levels (c'= 0.03, p=0.74). This implies that the influence of transformational leadership on personal accomplishment is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristic of reward. Reward accounted for 51.85% of the total indirect effect and was the only indirect effect that 95% confidence intervals did not include zero and therefore deemed as significant, please see Table 4.3.

Table 4.3

Standardized indirect effect of transformational leadership style with personal accomplishment, with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

TFL to PA	R^2=0.06 F=8.68 p<0.01	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	0.02	-0.02	0.07	7.41
Control	0	-0.09	0.08	0
Reward	0.14	0.03	0.25	51.85
Community	0.04	-0.02	0.12	14.82
Fairness	-0.03	-0.17	0.11	11.11
Values	0.04	-0.02	0.12	14.82
Total	0.21	0.08	0.34	

Transformational leadership and work engagement.

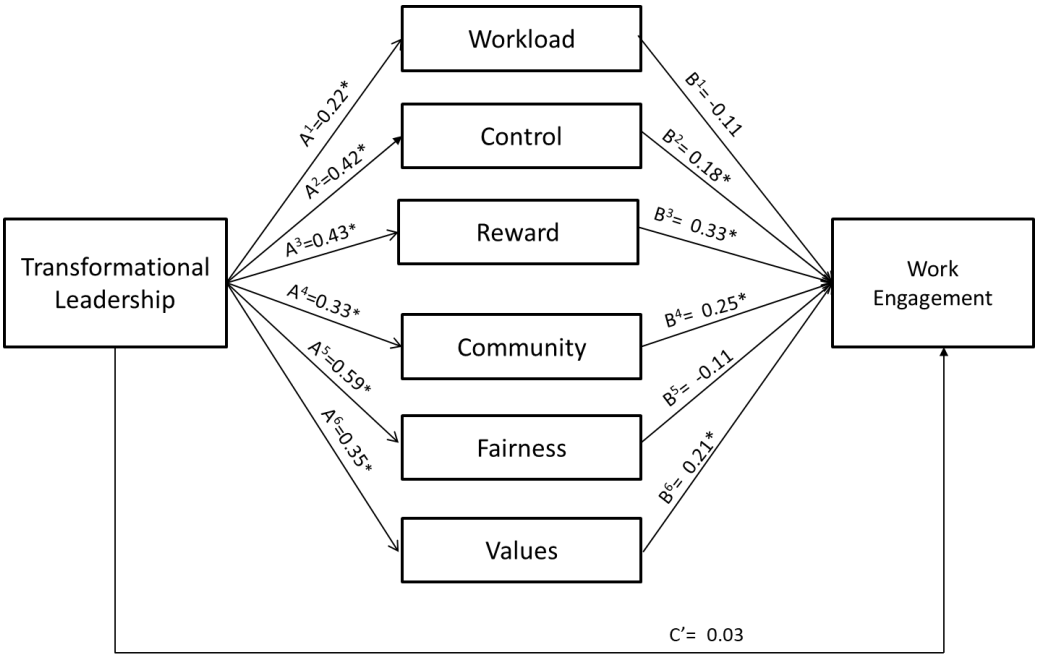

Figure 5: *Mediation model showing indirect effect of transformational leadership (X) on mental health professionals work engagement (Y) through the working environment (M). The estimates were generated using the PROCESS analysi macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.1.*

The relationship between transformational leadership style, the working environment variables and work engagement is illustrated in Figure 5. Transformational leadership style was positively associated to the working environment variables (path a_1 to a_6). All of the working environment variables, apart from fairness and workload, were positively associated with work engagement (path b_1 to b_6). Multiplying the a and b paths together provides the indirect effect (*ab)* as there were multiple mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect (0.28). This means that a one unit increase in transformational leadership will result in a 0.28 increase in work

engagement. A bias corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently more than zero (95% CI = 0.14, 0.43).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transformational leadership and work engagement was reduced to non-significant levels (c'= 0.03, p=0.75). This implies that the influence of transformational leadership on work engagement is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristic of, reward which accounted for 31.82% of the total indirect effect, community which accounted for 18.18% of the total indirect effect, control which accounted for 15.91% of the total indirect effect and values which accounted for 15.91%. These four indirect effects' 95% confidence intervals did not include zero and therefore were deemed significant. All indirect effects and 95% confidence intervals for transformational leadership can be found in Table 4.4.

Table 4.4

Standardized indirect effect of transformational leadership style with work engagement with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

TFL to Work Engagement	R^2=0.1 F=15.53 p<0.01	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	-0.02	-0.07	0.01	4.55
Control	0.07	0.01	0.16	15.91
Reward	0.14	0.04	0.25	31.82
Community	0.08	0.02	0.17	18.18
Fairness	-0.06	-0.18	0.05	13.64
Values	0.07	0.01	0.17	15.91
Total	0.28	0.14	0.43	

Transactional leadership and emotional exhaustion.

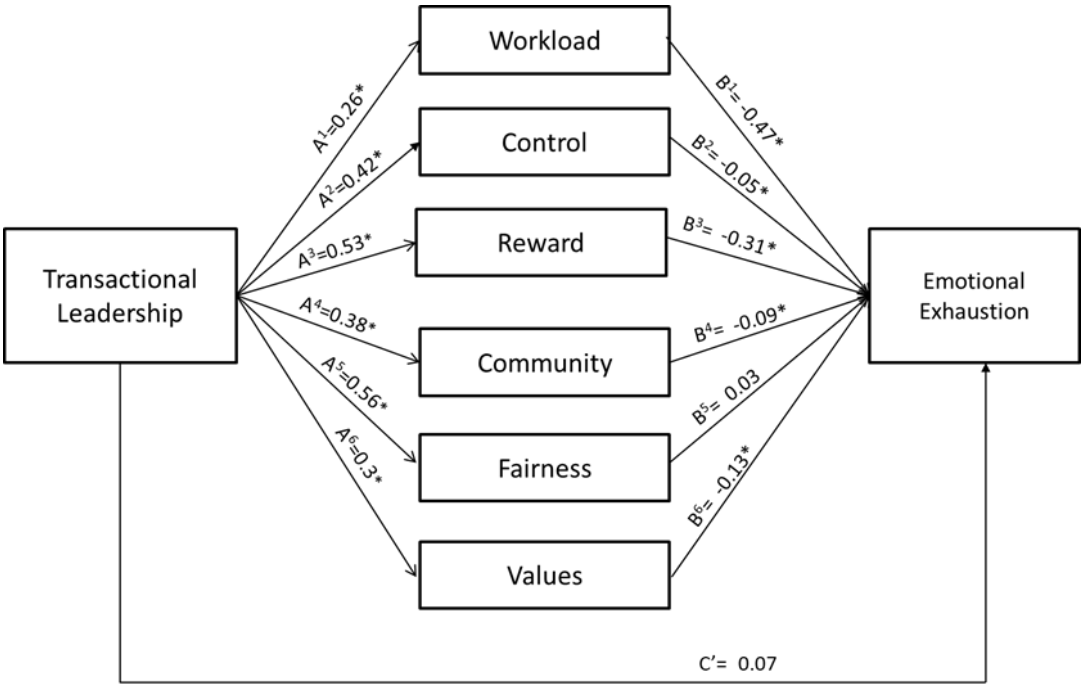

Figure 6: *Mediation model showing indirect effect of transactional leadership (X) on mental health professionals emotional exhaustion (Y) through the working environment (M). The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.09.*

Transactional leadership was also found to be positively related to the working environment variables (path $a_{1\ to}\ a_6$) and all the working environment variables, apart from fairness, were negatively associated with emotional exhaustion (path $b_{1\ to}\ b_6$). This relationship is depicted in Figure 6. Multiplying the a and b paths together provides the indirect effect (*ab),* as there were multiple mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect (-0.36). Again, this means that a one unit increase in transactional leadership will result in a -0.36 unit decrease in emotional exhaustion. A bias

corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently less than zero (95% CI -0.53 to -0.21).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transactional leadership and emotional exhaustion was reduced to non-significant levels (c'= 0.07, p=0.34) which implies that the influence of transactional leadership on emotional exhaustion is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristics of workload and reward with workload accounting for 30.77% of the total indirect effect and reward accounting for 41.03% of the total indirect effect. Both workload and reward indirect effects' 95% confidence intervals did not include zero and therefore were deemed as significant. All indirect effects and 95% confidence intervals for transformational leadership can be found in Table 4.5.

Table 4.5

Standardized indirect effect of transactional leadership style with emotional exhaustion with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

Transactional to EE	R^2=0.09 F=14.23 p<0.01	Bias-corrected bootstrapped 95% confidence intervals			
		Indirect Effect	Lower	Upper	% of total indirect effect
Workload		-0.12	-0.21	-0.04	30.77
Control		-0.02	-0.1	0.04	5.13
Reward		-0.16	-0.27	-0.08	41.03
Community		-0.03	-0.1	0.02	7.69
Fairness		0.02	-0.09	0.12	5.13
Values		-0.04	-0.1	0	10.26
Total		-0.36	-0.53	-0.21	

Transactional leadership and depersonalisation.

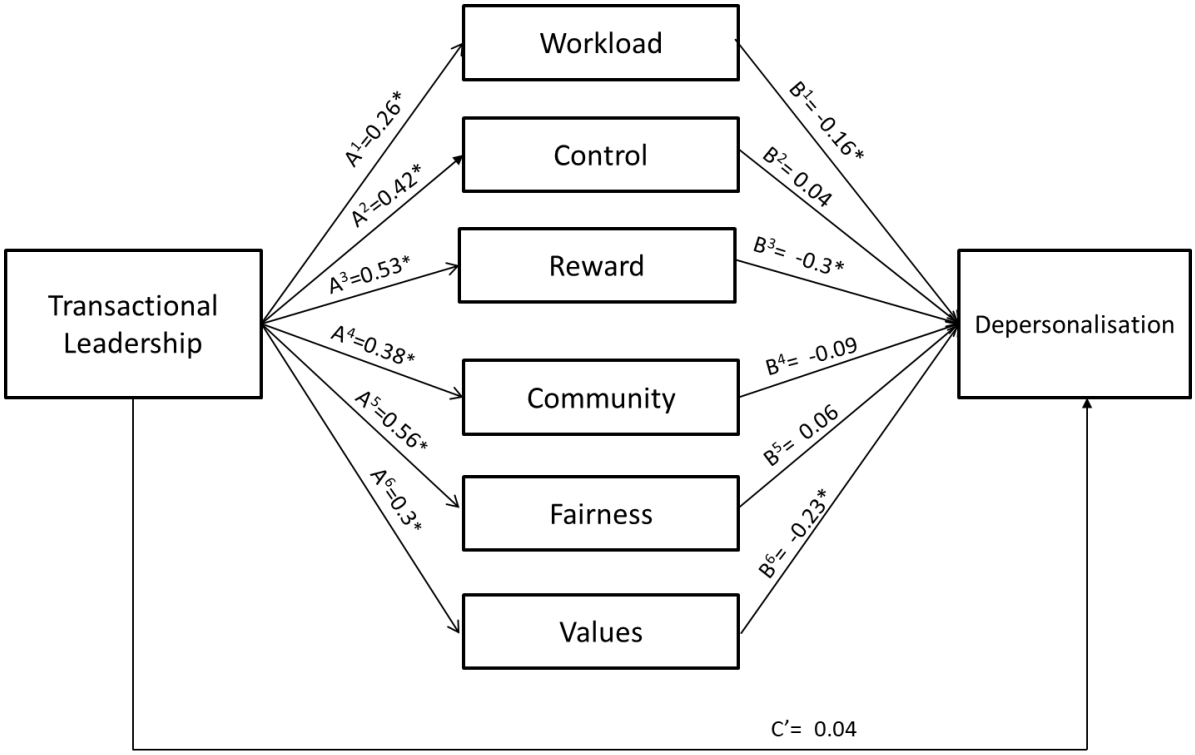

Figure 7: *Mediation model showing indirect effect of transactional leadership (X) on mental health professionals depersonalisation (Y) through the working environment (M). The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are standarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.04.*

Transactional leadership was also found to be positively related to the working environment variables (path $a_{1\ to}\ a_6$) and all the working environment characteristics, apart from control and fairness were negatively associated with depersonalisation (path $b_{1\ to}\ b_6$), see Figure 7. Multiplying the a and b paths together provides the indirect effect (*ab)* as there were multiple mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect of -0.26. This means that a one unit increase in transactional leadership would result in a 0.26 decrease in depersonalisation. A bias corrected 95%

confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently less than zero (95% CI -0.42 to -0.1).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transactional leadership and depersonalisation was reduced to non-significant levels (c'= 0.04, p=0.64) which implies that the influence of transactional leadership on depersonalisation is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristics of reward and values which accounted for 44.44% and 19.44% of the total indirect effect respectively. Both reward and values indirect effects' 95% confidence intervals did not include zero and therefore were deemed as significant. All indirect effects and 95% confidence intervals for transactional leadership can be found in Table 4.6.

Table 4.6

Standardized indirect effect of transactional leadership style with depersonalisation with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

Transactional to Dep	R^2=0.04 F=6.89 p<0.01	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	-0.04	-0.11	0	11.11
Control	0.02	-0.07	0.12	5.56
Reward	-0.16	-0.30	-0.04	44.44
Community	-0.04	-0.11	0.04	11.11
Fairness	0.03	-0.09	0.16	8.33
Values	-0.07	-0.15	-0.1	19.44
Total	-0.26	-0.42	-0.1	

Transactional leadership to personal accomplishment.

Transactional leadership style was not found to be significantly associated with personal accomplishment. Therefore, further mediation analysis was not carried out.

Transactional leadership to work engagement.

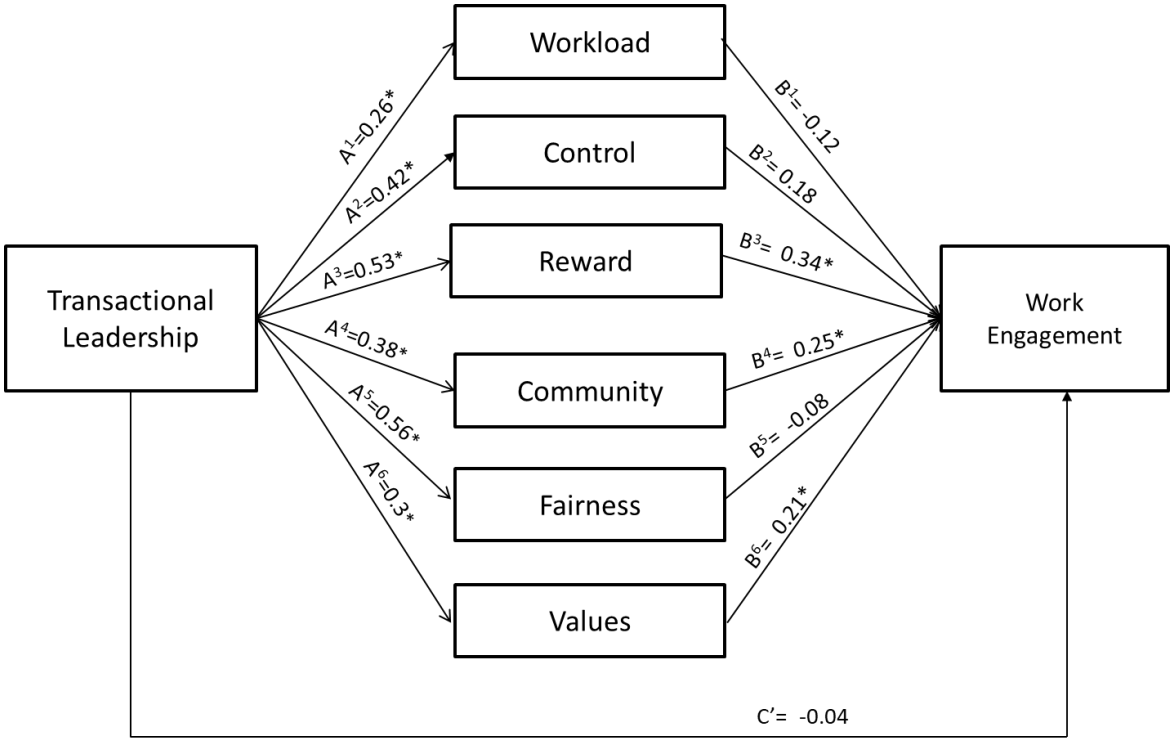

Figure 8: *Mediation model showing indirect effect of transactional leadership (X) on mental health professionals work engagement (Y) through the working environment (M). The estimates were generated using the PROCESS analysis macro (Model #4) within the SPSS program (Hayes, 2013). The coefficients are unstandarized estimates. .*Indicates p<0.05. N=149.* R^2*=0.09.*

Transactional leadership was found to be positively related to the working environment variables (path $a_{1\ to}\ a_6$) and there was a positive association between all the working environment variables and work engagement, apart from workload and fairness, see Figure 8. Multiplying the a and b paths together provides the indirect effect (*ab)* as there were multiple

mediators each ab effect was then added together as recommended by Hayes (2018) resulting in the total indirect effect of 0.34. In other words, a one unit increase in transactional leadership style would result in a 0.34 increase in work engagement. A bias corrected 95% confidence interval from 5000 bootstrap samples indicated the indirect effect was consistently more than zero (95% CI 0.2 to 0.48).

After including the work environment characteristics of the AWL model as intervening variables in this model, the association between transactional leadership and work engagement was reduced to non-significant levels (c'= 0.04, p=0.66) which implies that the influence of transactional leadership on depersonalisation is fully conditioned through mental health professionals' perception of the working environment characteristics of the AWL model.

The PROCESS analysis indicated that the above relationship was most strongly conditioned by the perceived work environment characteristics of control, reward, community and values. Control accounted for 16% of the total indirect effect, reward accounted for 36% of the total indirect effect, community for 20% of the total indirect effect and values for 12% of the indirect effect. These four indirect effects' 95% confidence intervals did not include zero and therefore were deemed as significant. All indirect effects and 95% confidence intervals for transactional leadership can be found in Table 4.7.

Table 4.7.

Standardized indirect effect of transactional leadership style with work engagement with bias-corrected bootstrapped 95% confidence intervals (5000 bootstrap samples).

Transactional to Work Engagement	R^2=0.09 F=14.6 p<0.01	Bias-corrected bootstrapped 95% confidence intervals		
	Indirect Effect	Lower	Upper	% of total indirect effect
Workload	-0.03	-0.08	0.01	6
Control	0.08	0.01	0.16	16
Reward	0.18	0.06	0.32	36
Community	0.1	0.03	0.17	20
Fairness	-0.05	-0.16	0.06	10
Values	0.06	0.01	0.14	12
Total	0.34	0.2	0.48	

It should be noted, however, that as these variables were measured using cross-sectional questionnaires, firm casual conclusions cannot be drawn.

Testing H^3.

H3: Transformational leadership will moderate the association between transactional leadership style and the working environment which will in turn influence the degree to which mental health professionals experience burnout and work engagement.

This hypothesis was tested by calculated the moderating effects of transformational leadership in the model shown in Figure 9. The index of moderated mediation for each of the mediator variable is shown in Table 4.8. None of the index moderated mediation values were significant for each outcome, and therefore H3 was not supported.

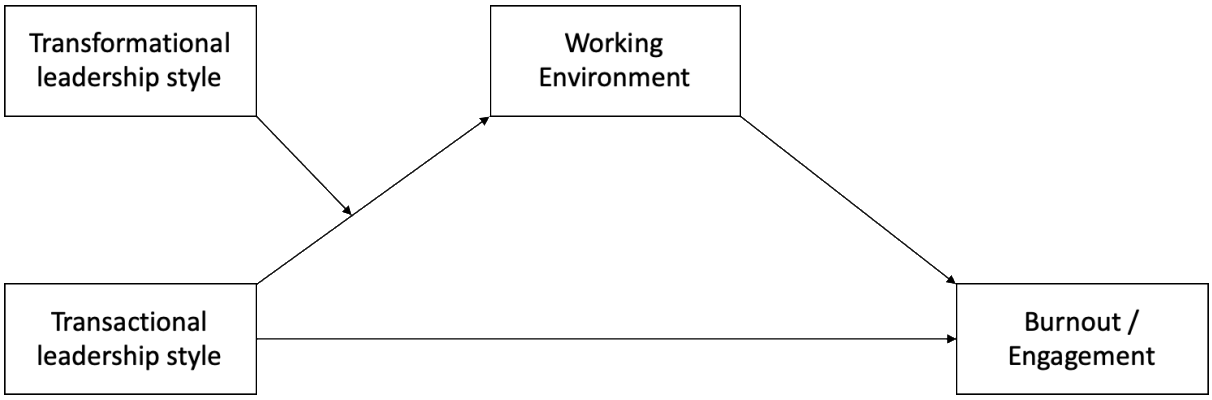

Figure 9: Moderated mediation model showing transactional leadership influence over burnout/engagement after being conditioned by the working environment and moderated by transformational leadership style.

Table 4.8

Results of moderated mediation analysis

Transactional to EE		Bias-corrected bootstrapped 95% confidence intervals	
	Index of moderated mediation	Lower	Upper
Workload	0	-0.02	0.04
Control	0	0	0.01
Reward	0	-0.02	0.01
Community	0	-0.01	0
Fairness	0	0	0.01
Values	0	-0.01	0.0

Transactional to Dep		Bias-corrected bootstrapped 95% confidence intervals	
	Index of moderated mediation	Lower	Upper
Workload	0	0	0
Control	0	0	0
Reward	0	-0.01	0
Community	0	0	0
Fairness	0	0	0
Values	0	-0.01	0

Transactional to PA		Bias-corrected bootstrapped 95% confidence intervals	
	Index of moderated mediation	Lower	Upper
Workload	0	0	0
Control	0	0	0
Reward	0	0	0.1
Community	0	0	0
Fairness	0	0	0
Values	0	0	0.1

Transactional to Work Engagement		Bias-corrected bootstrapped 95% confidence intervals	
	Index of moderated mediation	Lower	Upper
Workload	0	0	0
Control	0	0	0
Reward	0	0	0
Community	0	0	0
Fairness	0	0	0
Values	0	0	0

Discussion

The current study aimed to explore the relationship between mental health professionals' perception of their managers' leadership style and their levels of burnout and work engagement (H^1). This study also aimed to investigate whether this relationship could be explained through the managers' interaction with the working environment (H^2) and aimed to test the proposition that a transformational leader will build upon a transactional base by their interactions with the working environment (H^3).

In support of H^{1a}, higher levels of transformational leadership were found to be associated with lower levels of emotional exhaustion and depersonalisation as well as with higher levels of personal accomplishment and work engagement.. These findings are consistent with meta-analytical reviews in the generic leadership literature (e.g. Harms et al., 2017) as well as with other studies that have investigated this relationship in mental health services (e.g. Green et al., 2014; Webster et al., 1999, etc.).

Similar findings emerged for transactional leadership style supporting H^{1b}, with higher levels of transactional leadership being associated with lower levels of emotional exhaustion and depersonalisation. Although there is limited research into the association between transactional leadership and burnout to compare the results of this study, the results are contrary to Naghidibibalan and Azadehdel (2015) who found there to be no relationship between transactional leadership and burnout in bank employees.

Furthermore, higher levels of transactional leadership were also found to be associated with higher levels of work engagement. This result opposes Tims et al. (2011) claim that transactional leadership may lack the motivational power and inspirational appeal to stimulate work engagement. Breevaart et al. (2014) reported similar findings to the present study with

regards to transactional leadership's association with work engagement. However not supporting H^{1b}, no association was found between transactional leadership and personal accomplishment, which is discussed further below.

Supporting H^2, the relationship between transformational leadership style and the three components of burnout (emotional exhaustion, depersonalisation and personal accomplishment) as well as work engagement were fully conditioned through the leaders' interaction with the working environment. Transformational leadership's association with personal accomplishment was found to be fully conditioned by the working environment and this was largely to do with their ability to influence the working environment to be more rewarding. This may be as a result of transformational behaviours such as articulating clear standards and expectations for performance and showing recognition to employees for goal achievement (Muchiri, Cooksey & Walumbwa, 2012).

Also in support of H^2, the relationship between transactional leadership style and two of the components of burnout (emotional exhaustion and depersonalisation) as well as work engagement were fully conditioned through the leaders' interaction with the working environment. However not supporting H^2, transactional leadership and personal accomplishment was not found to be fully conditioned through the leaders' interaction with the working environment. The lack of association between transactional leadership and personal accomplishment may therefore be due to transactional leaders' tendency to reward or punish employees who perform either above, or below expectations, resulting in the majority of the workforce meeting goals but receiving no feedback from their managers.

The relationship between transformational leadership style and work engagement was fully conditioned by the working environment with results suggesting that their ability to develop a sense of community in the workplace, share the values of the organisation and allowing

followers to have more control over their work all helped to increase work engagement levels of mental health professionals. In other words, this may suggest that followers whose leaders are transformational may feel more empowered by their leader to take on additional responsibility and surpass their own expectations and self-interest in the quest to contribute to the collective interest (Bass & Riggio, 2006).

Fairness was the only working environment characteristic that was not found to have a statistically significant indirect effect in any of the models. Within the mediation models fairness was found to be positively associated with emotional exhaustion and depersonalisation and negatively associated with personal accomplishment and work engagement, which is conceptually at odds. Given the effect of fairness was consistently non-significant and the risk that interpreting statistically non-significant results can be misleading (as another sample may produce findings that are different), no inferences have been made about this result.

Lewis and Cunningham (2016) investigated the relationship between transformational leadership, the working environment, burnout and work engagement in general nurses. They found larger associations than that found in the present study. This may be due to variation in methodological designs e.g. Lewis and Cunningham (2016) combined the three facets of burnout to make one total score or it may be as a result of the differences between general nursing and mental health care.

Similar, to this study, Lewis and Cunningham (2016) found that reward and workload were significantly conditioning work environment factors that were related to burnout and they also found that control and reward were significantly related to work engagement. However, unlike the present study, Lewis and Cunningham (2016) did not find that transformational leadership was significantly conditioned through values.

Although transactional leadership was conditioned by the same significant work environment variables, transactional leadership's association with work engagement was slightly more dependent on ensuring the environment remained rewarding for followers and less on values than transformational leadership.

Taking a closer look at the two leadership styles' interaction with the working environment, it would appear that reward is an important characteristic being the only significant mediator across *all* facets of burnout and work engagement. Whereas, workload appears to be more influential in determining the degree to which mental health professionals experience negative symptoms such as emotional exhaustion, other working environment characteristics such as control, community and values appear to be the most influential in determining whether mental health professionals have a positive experience of work. This illustrates the importance of testing both positive and negative aspects of wellbeing at work.

The augmentation effect is the extent to which transformational leadership builds on the transactional base in contributing to followers' performance (Bass, 1985). This study did not find any evidence to support the augmentation effect in H^3, that transformational leadership will moderate the association between transactional leadership style on burnout and work engagement through the interaction with the working environment.

The employee outcomes measured in this study are more health related rather than performance related and it may be that the augmentation effect is not pertinent to outcomes associated with employee well-being e.g. burnout and work engagement. However, this seems unlikely, given the well-researched and consistent findings that burnout and work engagement are associated with employee performance. For example, Gorji (2011) found that increased levels of burnout in employees were related to decreased levels of performance and

Yongxing, Du, Xie and Lei (2017) found work engagement to be positively associated with job performance.

Therefore, since transformational leaders induce their followers to grow beyond the initially expected performance, transformational leadership may explain the unique variance in employee outcomes over and above the effect of transactional leadership. One interpretation of findings from this study is that transformational leaders' ability to influence their followers to grow beyond the initially expected performance is not explained through the interaction with the working environment, and it could be argued that the transactional base could well be the working environment itself. The augmenting effect may be captured through other transformational effects that have not been captured in this present study e.g. increased satisfaction, motivation and organisational identification (Zhu, Sosik, Riggio & Yang, 1992).

Lastly, the findings may not have supported H^3 due to the measure of leadership used in the present study and the fact that the transactional and transformational subscales were highly correlated which will be discussed further under the limitations of this study. However, as findings from this study suggest that both transactional and transformational leadership styles are related to increased levels of work engagement and lower levels of employee burnout and considering the theoretical underpinning from Bass & Avolio (1993) that the augmentation of these styles are more effective, it is likely that the measurements used in this study have not been able to detect an effect specific to each leadership style.

Recommendations

It is important to note that the variance explained in all of these models is small, with no model accounting for more than ten percent of the variance, and therefore there are many other sources of variation that are not included in this model.

This study investigated managers' leadership styles association with mental health professionals' levels of burnout and work engagement and whether the association was explained through characteristics of the working environment. This study has found managers' leadership styles to have a consistent small association with burnout and work engagement in mental health professionals. Thus, interventions aimed at managers' leadership style alone, is not likely to see a large change in burnout and work engagement in their followers. Nevertheless, this study has found there to be a small consistent association between managers' leadership style, burnout and work engagement and therefore interventions focussing on this may still be beneficial.

Research suggests that leadership behaviours can be learned and training programs have been shown to enhance the extent to which managers' exhibit transformational leadership behaviours (Barling, Weber, & Kelloway, 1996). Given the associations between transformational leadership and burnout found in this study, such leadership training may be beneficial.

This study has shown that a manager's leadership style is associated with employees' experience of burnout and work engagement through their interaction with the working environment. Findings from this study suggest that an employee's perception of how rewarding they perceive their work environment to be is a significant variable that conditions all four employee outcomes. Therefore, organisational interventions to ensure that employees are rewarded for their work-related efforts would be the most sensible place to start. Considering mental health professionals most often work in public organisations, rewards are not always financial, however as stated by Breevaart et al. (2014) rewards can also be psychological in nature, for example the reward experienced from praise and constructive feedback. Therefore, employees may benefit from this type of reward, which is a facet of both

transformational and transactional leadership which can be operationalised directly by leaders within the organisation. Additionally, organisational efforts to focus on creating a sense of community and a shared sense of purpose will help to develop a workforce that is more engaged.

All of the working environment characteristics were found to have relatively strong correlations with emotional exhaustion and moderate correlations with depersonalisation, personal accomplishment and work engagement (apart from workload). However, this study shows that managers' transformational and transactional leadership styles account for only a small amount of the variance. Around 90% of staff in a typical health care organisation is non-management, and within this large group are individuals who may be influencing levels of burnout and work engagement in the teams in which they are based (Lee & Cummings, 2008). This concept of 'Informal Leadership' is described by Smart (2005) as being outside the boundaries of formal authority and involves leaders who make things happen through subtle power and influence (Downey, Parslow, & Smart, 2005). Furthermore, many NHS organisations espouse a model of distributed leadership which means one leader may not be the sole influence on an individual's working environment at any one time (Martin, Beech, MacIntosh, & Bushfield, 2014). Therefore, future researchers may wish to investigate who else has influence over the working environment, to what extent and how this may be associated with burnout and work engagement.

Limitations

There are several potential limitations to this study that need to be considered. Firstly, as previously mentioned, the cross-sectional design of this research means that firm causal conclusions about the association between leadership, the working environment, burnout and work engagement cannot be drawn. Therefore, future research may wish to investigate the

effectiveness of leadership courses by measuring transformational and transactional leadership behaviours whilst monitoring burnout levels in their followers. Additionally, the effect of the leadership behaviours on the working environment could also be monitored. Even though the mediation model tested in this study is consistent with previous theoretical and empirical research, more testing of the model using different research methodologies needs to be carried out to establish support for the causal mediation proposed in the theoretical model.

Second, this study used a different measurement of transformational and transactional leadership styles than that used in several previous studies due to recent criticisms in the literature regarding the MLQ and its measurement of effects rather than behaviours (Van Knippenberg & Sitkin, 2013). However, the two leadership subscales were highly correlated which suggests it may not differentiate between the two styles. However, some difficulty in teasing out differences may be inevitable given Bass' (1985) proposed theory that transformational leadership builds upon a transactional base, which could imply that searching for a unique effect of transformational leadership style is not appropriate as it may not exist as an entity without the transactional base.

Third, this study attempted to recruit participants from all NHS mental health trusts in England and although 20 of these trusts agreed to participate in the study, the response rate was small relative to the amount of potential participants who may have been exposed to the study adverts. The final sample may thus not be representative of the workface under study and there may be several sources of bias. For example, research by Ancona & Mendelson (2014) found that employees who were experiencing high levels of stress were not likely to volunteer to participate in research, they may therefore be under-represented. Nevertheless, Health Education England (2017) reported that 59% of clinical staff consist of nurses and

31% of clinical staff are allied health professionals which is similar to the sample in this study. However, this study appears to be less representative of medical staff as Health Education England (2017) report 10% of clinical staff to be from a medical background.

Of the 60 Trusts approached, 20 agreed to participate and one could speculate that these may be Trusts who have a proactive approach to reducing stress and increasing well-being in their organisations. The same principle may apply to the 20 Trusts in terms of the degree to which they actively promoted the study but unfortunately no information is available about this. Nevertheless, not collecting this information may been seen as a strength of the study due to responses being anonymous participants may have felt able to respond in an honest way without fear of consequence from their employer.

Lastly, this study relies on self-report and single-source information and it would benefit from multiple source information such as from leaders themselves to avoid common method bias. Nevertheless, it is important to note that the relationships investigated here are likely to be more strongly linked to followers' perception of their leader and environment rather than the leaders' perceptions of their own style.

Future directions

To offer more certainty about the causal nature of the dynamics discussed in this study, future work would helpfully include studies specifically designed to address causal hypotheses, such as longitudinal or experience sampling (e.g. Breevaart et al., 2014). If future studies using alternative research approaches are consistent with findings from this study, it would make sense for subsequent studies to evaluate effectiveness of interventions aimed at the leader's interaction with the working environment.

Furthermore, some research has shown that for leaders themselves, strain is negatively associated with transformational behaviours (Diebig, Poethke,& Rowold, 2017). It would be helpful to investigate further the impact of leaders' strain and whether this may act as a barrier to leaders being able to interact helpfully with some aspects of the working environment (e.g. praise). This would make a strong rationale to support the development of interventions for leaders who are at risk of experiencing burnout themselves.

Lastly, despite the present study not supporting H3, the continued investigation of whether transformational leadership may intensify transactional effects should continue, as it is likely that the absence of significant findings in this study could be related to the measure used.

Summary

In summary, transformational and transactional leadership were found to be significantly correlated with emotional exhaustion, depersonalisation, and work engagement. Only transformational leadership was significantly correlated with personal accomplishment.

Factors of the working environment had a significant role in fully conditioning the relationship between transformational and transactional leadership styles with mental health professionals' levels of burnout and work engagement. Specifically, reward was found to be a significant mediating variable for the three facets of burnout and engagement. Workload and values were also associated significant mediators for emotional exhaustion and depersonalisation. Community, control and values were significant mediating variables for work engagement across both the leadership styles.

These findings are consistent with research that has shown transformational and transactional leadership to be associated with low levels of burnout and high levels of work engagement. Further research should continue to employ different methodological designs, such as

longitudinal designs, to study the relationship as well evaluate organisational interventions that influence workplace characteristics.

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Chapter Three – Public Dissemination Document:

The well-being of mental health professionals and the role in which their managers and the working environment play.

Supervised by Dr Theresa Powell

Introduction

Burnout is a major public health issue that has significant implications for healthcare professionals. It has been suggested that working in a mental health environment may make mental health professionals more vulnerable to developing burnout and a recent meta analytical review by O'Connor et al., (2018) have found there to be high prevalence of burnout amongst mental health professionals.

Burnout is defined as a psychological syndrome that consists of three main factors; emotional exhaustion, depersonalisation and a diminished sense of personal accomplishment (Maslach, 1998). The positive end of these three dimensions is known as work engagement. Although engagement and burnout are related constructs, research has consistently found that the two states are not dependant on each other (Schaufeli, Leiter, Maslach & Jackson, 1996, Demerouti, Mostert, & Bakker, 2010).

For mental health organisations in particular, burnout has been shown to predict future sick leave (Toppinen-Tanner, et al., 2005) and high levels of burnout have been correlated with reduced fidelity to evidence-based practice (Mancini et al., 2009). Burnout has also been correlated with a number of negative organisational measures including increased staff turnover, frequent absenteeism, recruitment and cost of training of new staff (Rollins et al., 2010). Additionally, high levels of emotional exhaustion and depersonalisation were correlated with distant and rejecting attitudes towards patients on mental health inpatient wards (Holmqvist & Jeanneau, 2006). As a result of this, burnout has been reported as a critical issue in mental health care that threatens the sustainability of service providers and the ability of mental health professionals to provide effective patient care (Lasalvia & Tansella, 2011).

There is mounting evidence that burnout and work engagement is associated with the working environment. For examples Kanste, Kyngas & Nikkila (2007) found a lack of communication from their seniors negatively impacted staff morale, and Melchior, Philipsen, Abu-Saad, Halfens, Van de Berg and Gassman (1999) found that low levels of burnout were associated with employees who had autonomy over their work, job clarity and good support.

It could be claimed that the leader is the most influential factor in the work environment. Within a work context, a leader is the person who is responsible for taking charge and guiding the work-related efforts of others, and Smircich and Morgan (1982) argue that leaders are able to "define and shape" the working environment. Therefore, it has been suggested that leaders may be able to influence employees' burnout and engagement levels through their on-going interaction with the working environment (Breevaart, Bakker, Hetland, Demerouti, Olsen & Espevik, 2014).

This report summarises two pieces of research, which aim to better understand the relationship between managers' leadership styles and the degree to which mental health professionals experience burnout and work engagement. The first, a review of the current literature which brings together all available studies to investigate the relationship between transformational leadership and burnout in mental health professionals. The second, a primary research study looking at how the leadership style of managers' may be associated with burnout and work engagement and whether this association is due to the leaders' influence over the working environment.

Literature Review: The relationship between transformational leadership and burnout in mental health professionals: A Meta-Analysis.

Background.

As previously stated, a recent meta-analytical review by O'Connor, et al., (2018) reported that the prevalence of burnout amongst mental health professionals is high and there have been a substantive amount of research in the generic leadership literature that has found that leaders who display a transformational style may help to protect their followers from developing burnout. Given the high prevalence of burnout in mental health professions, it is important to review the current literature concerning potential factors that may help to protect mental health professionals from burnout.

Methodology.

Systematic searches were conducted in three databases in August 2018. Nine studies that reported the association between transformational leadership and burnout in mental health professionals met the inclusion criteria for the review and were included in the analysis.

Results.

Transformational leadership was found to be significantly associated with all three facets of burnout. Negatively associated with emotional exhaustion (r = -0.26, CI 95% = -0.31, -0.22), and depersonalisation (r=-0.17, 95% CI = -0.22,-0.13) and positively associated with personal accomplishment (r=0.18, 95% CI= 0.08, 0.28).

Discussion.

There were a small number of studies that have investigated the relationship between transformational leadership and burnout in the mental health field. Nevertheless, the consistency of significant findings indicate that transformational leadership can be helpful in protecting mental health professionals from burnout.

Primary Research Study: Burnout and work engagement in mental health professionals: The effects of transactional and transformational leadership and the working environment.

Background.

This study examines the relationship between transformational and transactional leadership styles with the three components of burnout and work engagement. This study also investigated whether the relationship between transformational and transactional leadership and burnout and work engagement could be explained through the leaders' interaction with the working environment.

Methodology.

This was a cross-sectional survey design in which 149 mental health professionals completed questionnaire measures of their perception of their managers' leadership style as well how they perceived their working environment and questionnaires measuring their levels of burnout and work engagement. Hypotheses were tested using Pearson's correlation coefficients as well as mediation and moderated mediation analysis.

Results.

Higher levels of transformational leadership style were found to be significantly associated with lower levels of emotional exhaustion and depersonalisation, as well as with higher levels

of personal accomplishment and work engagement. Higher levels of transactional leadership were found to be significantly associated with lower levels of emotional exhaustion and depersonalisation as well as with higher levels of work engagement. However, no significant correlation was found with transactional leadership and personal accomplishment. Mediation analysis found that the working environment characteristics fully condition the relationship with transformational and transactional leadership style and burnout as well as with work engagement.

Taking a closer look at the two leadership styles interaction with the working environment, it would appear that reward is an important characteristic being the only significant mediator across *all* facets of burnout and work engagement. Whereas, workload appears to be more influential in determining the degree to which mental health professionals experience negative symptoms such as emotional exhaustion. Other working environment characteristics such as control, community and values appear to be the most influential in determining whether mental health professionals have a positive experience of work.

Discussion.

The present study is consistent with theoretical understanding and previous research into transformational leadership relationship with burnout and work engagement. Transactional leadership association with burnout and work engagement has received less attention in the research, but results in the present study are consistent with some previous findings.

Research suggests that leadership can be learned, and training programs have shown to enhance the extent to which managers' exhibit transformational leadership behaviours (Barling, Weber, & Kelloway, 1996). Therefore, findings from this study support leaders training programmes to help develop managers to exhibit helpful leadership behaviours.

This study has shown that a manager's leadership style does have an influence on the degree to which employees experience burnout and work engagement through their interaction with the working environment. Findings from this study suggest that an employee's perception of how rewarding they perceive their work environment to be, is a significant variable that conditions all four employee outcomes. Therefore, preventative organisational interventions to ensure that employees are rewarded for their work-related efforts would be the most sensible place to start.

There are several potential limitations to this study that need to be considered. Firstly, as has previously been mentioned, the cross-sectional design of this research means that firm causal conclusions about the association between leadership, the working environment, burnout and engagement cannot be drawn. A longitudinal research design would help to establish whether this effect is consistent overtime.

Finally, this study used a different measurement of transformational and transactional leadership styles due to recent criticisms in the literature regarding the MLQ and its measurement of effects rather than behaviours (Van Knippenberg & Sitkin, 2013). However, the two leadership subscales are highly correlated which suggests it does not differentiate between the two styles. However, some difficulty in teasing out differences may be inevitable given Bass' (1985) proposed theory that transformational leadership builds upon a transactional base, which could imply that searching for a unique effect of transformational leadership style is not appropriate as it may not exist without the transactional base.

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Appendix A: Ethical Approval from Science, Technology, Engineering and Mathematics Ethical Review Committee.

Dear [redacted]

Re: "The effect of leadership style and the working environment on burnout amongst mental health staff"
Application for Ethical Review ERN_17-1562

Thank you for your application for ethical review for the above project, which was reviewed by the Science, Technology, Engineering and Mathematics Ethical Review Committee.

On behalf of the Committee, I confirm that this study now has full ethical approval. Please also find attached the final approval documents from the research governance team.

I would like to remind you that any substantive changes to the nature of the study as described in the Application for Ethical Review, and/or any adverse events occurring during the study should be promptly bought to the Committee's attention by the Principal Investigator and may necessitate further ethical review.

Please also ensure that the relevant requirements within the University's Code of Practice for Research and the information and guidance provided on the University's ethics webpages (available athttps://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Links-and-Resources.aspx) are adhered to and referred to in any future applications for ethical review. It is now a requirement on the revised application form (https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Ethical-Review-Forms.aspx) to confirm that this guidance has been consulted and is understood, and that it has been taken into account when completing your application for ethical review.

Please be aware that whilst Health and Safety (H&S) issues may be considered during the ethical review process, you are still required to follow the University's guidance on H&S and to ensure that H&S risk assessments have been carried out as appropriate. For further information about this, please contact your School H&S representative or the University's H&S Unit at healthandsafety@contacts.bham.ac.uk.

Kind regards,

[redacted]
Deputy Research Ethics Officer
Research Support Group
C Block Dome (room 132)
Aston Webb Building
University of Birmingham
Edgbaston B15 2TT
Tel: [redacted]
Email: [redacted]

Appendix B: Confirmation of Sponsorship

UNIVERSITY OF BIRMINGHAM

FINANCE OFFICE

Mr Matthew Perkins
School of Psychology
University of Birmingham

Thursday, 2 August 2018

[redacted]

Project Title: The effect of leadership style, and the working environment on burnout amongst mental health staff.
Sponsor Reference: RG_17-231
ERN reference: ERN_17-1562

Under the requirements of UK Policy Framework for Health and Social Care Research, the University of Birmingham agrees to act as Sponsor for this project. Sponsorship is subject to you obtaining a favourable ethical opinion and NHS R&D management approval where appropriate.

As Chief Investigator, you must ensure that local study recruitment does not commence until all applicable approvals have been obtained. Where a study is or becomes multi-site you are responsible for ensuring that recruitment at external sites does not commence until local approvals have been obtained.

Following receipt of all relevant approvals, you should ensure that any subsequent amendments are notified to the Sponsor, REC and relevant NHS R&D Office(s), and that an annual progress report is submitted to the Sponsor, REC and NHS R&D departments where requested.

Please ensure you are familiar with the University of Birmingham Code of Practice for Research (http://www.birmingham.ac.uk/Documents/university/legal/research.pdf) and any appropriate College or School guidelines.

Finally please contact researchgovernance@contacts.bham.ac.uk should you have any queries.

You may show this letter to external organisations.

Yours sincerely

[redacted]

Head of Research Governance and Ethics
Research Support Group

[redacted]

University of Birmingham Edgbaston Birmingham B15 2TT United Kingdom
w: www.finance.bham.ac.uk

Appendix C: Ethical Approval from Health Research Authority

Mr [redacted]
Trainee Clinical Psychologist
Birmingham and Solihull Mental Health NHS Foundation Trust
B1, 50 Summer Hill Road
Birmingham
B1 3RB

Email: hra.approval@nhs.net
Research-permissions@wales.nhs.uk

22 August 2018
Amended and Reissued 28 August 2018

Dear [redacted]

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**The effect of leadership style, and the working environment on burnout amongst mental health staff.**
IRAS project ID:	**238258**
Protocol number:	**RG_17-231**
Sponsor	**University of Birmingham**

I am pleased to confirm that HRA and Health and Care Research Wales (HCRW) Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

How should I continue to work with participating NHS organisations in England and Wales?
You should now provide a copy of this letter to all participating NHS organisations in England and Wales, as well as any documentation that has been updated as a result of the assessment.

Participating NHS organisations in England and Wales **will not** be required to formally confirm capacity and capability before you may commence research activity at site. As such, you may commence the research at each organisation 35 days following sponsor provision to the site of the local information pack, so long as:

- You have contacted participating NHS organisations (see below for details)
- The NHS organisation has not provided a reason as to why they cannot participate
- The NHS organisation has not requested additional time to confirm.

You may start the research prior to the above deadline if the site positively confirms that the research may proceed.

Appendix D: Demographic Questionnaire

Demographic Questions

1. Gender: Male Female Prefer not to say

2. Which category below includes your age?

   18-20 21-29 30-39 40-49

   50-59 60 or older Prefer not to say

3. What is your profession? (Please select one)

   Nurse Social Worker Psychologist Medical Doctor

   Occupational Therapist Support Worker

   Healthcare Assistant Other (please say) _____

   Prefer not to say

4. How long have you worked in the NHS? (Please select one)

   0-6 Months 7-11 Months 1-2 Years 3-5 Years

   6-10 Years 11-15 Years 16-20 Years 21+ Years

   Prefer not to say

5. How long have you worked in your present position in the NHS? (Please select one)

   0-6 Months 7-11 Months 1-2 Years 3-5 Years

   6-10 Years 11-15 Years 16-20 Years 21+ Years

   Prefer not to say

Appendix E: Maslach Burnout Inventory Human Services Survey adapted for Medical Personnel (Maslach, Jackson, & Leiter, 1996) Exemplar Items.

*Please note that due to copyright law, only a small number of items are included.

Appendix F: Area of Worklife Scale (AWL; Leiter & Maslach, 2002) Inventory Exemplar Items.

Please use the following rating scale to indicate the extent to which you agree with the following statements.

Strongly Disagree - Disagree - Hard to Decide - Agree - Strongly Agree

Workload

I do not have time to do the work that must be done.

Control

I have control over how I do my work.

Reward

I receive recognition from others for my work.

Community

Members of my work group communicate openly.

Fairness

Resources are allocated fairly here.

Values

My values and the Organization's values are alike.

Appendix G: Transformational and Transactional Leadership Questionnaire

Please use the following rating scale to indicate the extent to which you agree with the following statements. Please circle the number corresponding to your answer.

1= strongly disagree 2= somewhat disagree3= neither agree or disagree

4= somewhat agree 5= strongly agree

Transformational Leadership Sub-Scale

1. My leader concretizes a clear vision for the team's future
2. My leader communicates a clear vision of the organization's future
3. My leader makes a continuous effort to generate enthusiasm for the organization's vision
4. My leader has a clear sense of where he or she believes our organization should be in 5 years
5. My leader seeks to make employees accept common goals for the organization
6. My leader strives to get the organization to work together in the direction of the vision
7. My leader strives to clarify for the employees how they can contribute to achieve the organization's goals

Transactional Leadership Sub-Scale

8. My leader rewards the employees' performance when they live up to the leader's requirements
9. My leader rewards the employees' dependent on how well they perform their jobs
10. My leader points out what employees will receive if they do what is required
11. My leader lets employees' effort determine received rewards
12. My leader gives individual employees positive feedback when they perform well
13. My leader actively shows his or her appreciation of employees who do their jobs

better than expected

14. My leader generally does not acknowledge individual employees' even though they perform as required
15. My leader personally compliments employees when they do outstanding work
16. My leader gives negative consequences to the employees if they perform worse than their colleagues
17. My leader make sure that it has consequences for the employees if they do not consistently perform as required
18. My leader takes step to deal with poor performers who do not improve
19. My leader gives negative consequences to his or her employees if they do not perform as the leader requires.

Appendix H: Utrecht Work Engagement Scale (Schaufeli, Baker, & Salanova, 2006)

Work & Well-being Survey (UWES) ©

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy* *(VI1)*
2. _____ I find the work that I do full of meaning and purpose *(DE1)*
3. _____ Time flies when I'm working *(AB1)*
4. _____ At my job, I feel strong and vigorous *(VI2)**
5. _____ I am enthusiastic about my job *(DE2)**
6. _____ When I am working, I forget everything else around me *(AB2)*
7. _____ My job inspires me *(DE3)**
8. _____ When I get up in the morning, I feel like going to work *(VI3)**
9. _____ I feel happy when I am working intensely *(AB3)**
10. _____ I am proud on the work that I do *(DE4)**
11. _____ I am immersed in my work *(AB4)**
12. _____ I can continue working for very long periods at a time *(VI4)*
13. _____ To me, my job is challenging *(DE5)*
14. _____ I get carried away when I'm working *(AB5)**
15. _____ At my job, I am very resilient, mentally *(VI5)*
16. _____ It is difficult to detach myself from my job *(AB6)*
17. _____ At my work I always persevere, even when things do not go well *(VI6)*

* Shortened version (UWES-9); VI= vigor; DE = dedication; AB = absorption