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**The Three E's of Occupational Wellbeing:
A study of New Zealand Veterinary Nurse's Workplace Engagement, Exchange,
and Exhaustion**

A thesis presented in partial fulfilment of the requirements for the degree of Master of Arts at
Massey University, Albany, New Zealand.

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2014

Declaration

I declare that this thesis represents my own work, except where due acknowledgement is made, and that it has been previously included in a thesis, dissertation or report submitted to this University or to any other institution for a degree, diploma or other qualification.

A handwritten signature in black ink, appearing to read 'Stafford W. Kimber', written over a horizontal line.

Stafford W. Kimber

Abstract

Occupational wellbeing is an ongoing concern for most employees and their organisations. Occupational stress research has been conducted for more than three decades, however its antipode, occupational eustress, has been present for half the time. Commonly researched manifestations of occupational distress and eustress are burnout and workplace engagement respectively, and both have been shown to occur in a range of roles and professions. Therefore, the goal of this research was to investigate work-related wellbeing among veterinary nurses, a relatively un-researched group, using the Job Demands–Resources (JD-R) model.

A cross-sectional approach was used. Structural equation modelling was used to ascertain the JD-R model's motivational and health pathways among veterinary nurses. Data were collected by online survey, with the help of eight New Zealand tertiary providers and the New Zealand Veterinary Nurses Association. One hundred and eighty-two participants provided data.

The results show that a large proportion of participants displayed high levels of workplace engagement and high quality relationships among team members. In addition, most also saw their work as being of benefit to their family life, and reported feeling engaged with their work. However, the relatively high levels of reported job demands could be of concern, as high demands can lead to emotional exhaustion over time. This research identified reasons to expand the JD-R conceptualisation of job resources and provided a guide towards healthier workplace practices such as identifying ways to increase work–family balance, build solid team–member relationships, and provide adequate job resources to address times of high demand.

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Chapter 1: Introduction

1.1. Background influences: New Zealand and its animals

New Zealand is a country full of animal owners, carers and protectors. Indigenous, stock and domestic animals are embedded in New Zealand culture. From the endangered Brown Kiwi to the dairy cow, we as 'Kiwis' define ourselves around the very animals we protect and export (New Zealand Companion Animal Council, 2011).

The New Zealand export market is dominated by agricultural trade (Statistics New Zealand, 2013a). Primarily the export market is based on dairy, meat and wool. In 2013 the estimated return from this trade was NZ \$46 billion (Statistics New Zealand, 2013a). Animal-based export creates more revenue than the rest of New Zealand primary export industries combined (Statistics New Zealand, 2013a). New Zealand exported animal-based products have increased since 1949 (Statistics New Zealand, 2013a) and, thus agriculture could be seen as the backbone of New Zealand industry.

The New Zealand Companion Animal Council (2011) has estimated there are 5 million domesticated animals that are owned by 68% of New Zealand households. In addition, as of 30 June 2012 there were approximately 42 million animals classified as livestock owned by farms throughout New Zealand (Statistics New Zealand, 2012). Therefore, the need to protect, care and maintain the wellbeing of these animals is crucial to business, and to New Zealand's environment.

New Zealanders own companion animals for individual fulfilment and wellbeing (Department of Conservation, 2013) and research has shown that households that own companion animals report reduced amounts of mental illness and increased wellbeing (Wensley, 2008). In return for this beneficial animal-owner bond, owners reciprocate and

take care of their animals' wellbeing; as such animal healthcare has a principal role in the longevity of New Zealand domesticated and companion animals. The demand is extremely high for experienced individuals to provide care for New Zealand's numerous companion animals (Gardner & Hini, 2006; New Zealand Companion Animal Council, 2011; Statistics New Zealand, 2012). Therefore, it is potentially in the best interests of New Zealand animal lovers to protect the welfare of the limited number of people who work in this sector through the exploration of vocational behaviour and wellbeing.

There are various professions that manage the physical and psychological wellbeing of indigenous, stock and companion animals, including biodiversity rangers (Department of Conservation, 2013), SPCA Animal Welfare Officers, Zookeepers, Veterinarians and Veterinary Nurses. Individuals who work in these roles may be faced with distressful situations such as traumatic experiences, high job demand, and dangerous environments (Cassidy, 2008; Gardner & Hini, 2006; Jeyaretnam, Jones, & Phillips, 2000; Rohlf & Bennett, 2005; Sanders, 2010) but most find considerable rewards in this type of work. The focus of the current research is on the work related-stress of burnout and wellbeing among veterinary nurses.

1.2. New Zealand veterinary nurses

The 2013 New Zealand Census reports 1479 people classified themselves as a veterinary nurse (Statistics New Zealand, 2013b). In 2013 the New Zealand Veterinary Nurse Association (NZVNA) has approximately 630 active members (Waugh, 2013). With only 1479 veterinary nurses to help provide care to New Zealand's 47 million stock and companion animals, clearly the opportunities and requirements for animal care vary widely.

O'Connor (2013) categorises New Zealand veterinary nurses into four main classifications who provide specialised–animal care: (1) the veterinary nurses, whose major

role is generally based around small companion animals such as rabbits, cats and dogs; (2) rural veterinary/animal technicians, whose primary role is the care and maintenance of livestock; (3) veterinary technicians who have been formally educated through a US or UK based educational provider, and whose primary role may vary between companion animals and/or livestock; and (4) veterinary technologists who, like veterinary technicians, have attained a Bachelor's or associated degree in veterinary science and whose primary role may vary between companion animals and/or livestock. For convenience members of all four categories will be referred to as veterinary nurses in this thesis.

While there has been research conducted on vocational stressors of veterinarians (Fritschi, Morrison, Shirangi, & Day, 2009; Gardner & Hini, 2006), there has been comparatively little research conducted on veterinary nurses, especially on factors that identify why they may stay or leave a specific role, such as occupational stressors and positive workplace behaviours. In addition, the author was unable to find research that focused on veterinary nurses' workplace wellbeing, the primary focus of this research. Nevertheless, one study has identified that veterinary nurses do suffer from high turnover rates, especially among women near the start of their careers (Frommer & Arluke, 1999). However, no attempt has been made to explain why some veterinary nurses who are exposed to work-related stressors or demands, such as euthanasia, stay in work while others leave.

1.3. Rationale for the study

As a New Zealander, I grew up around animals. As a child I spent most of my time staying at a family friend's farm in back-country Gisborne, exploring and helping out with farm work. During my time in Gisborne I grew accustomed to having many different kinds of animals around, and I have always managed to find others who shared my passion. The

irony is that my initial passion for animals has helped shift my focus, from the wellbeing of animals, to that of the hard-working people who care for animals.

Naturally, this passion for wellbeing also creates ties to likeminded individuals. My wife Sarah, a veterinary nurse, shares my passion and has dedicated her life to caring for animals. Her stories have fascinated me, from the dynamics among veterinary nurses and veterinarians to the relationships between clients and their patients – the animals.

The demands placed upon veterinary nurses are extremely complex. The level of recall and need to multi-task to successfully complete a day's work under high levels of pressure is something not everyone can cope with. However, many thrive in this environment, with a passion for 'making a difference' through maintaining the wellbeing of animals that require medical attention.

Research has explored the physical and psychological wellbeing of individuals in the veterinary profession (Fritschi et al., 2009; Gardner & Hini, 2006; Hansez, Schins, & Rollin, 2008; Hatch, Winefield, Christie, & Lievaart, 2011; Shirangi, Fritschi, Holman, & Morrison, 2013). Recently, there has been growing concern about both the physical and mental wellbeing of veterinarians throughout the Western world. For instance, concerns have been raised about veterinarians' rates of suicide, suicidal thoughts, and depression, which are high compared to other vocational groups (Gardner & Hini, 2006). These and other findings have created a growing interest in the wellbeing of individuals who work as veterinarians and participate in day-to-day activities within veterinary clinics. Despite the increase in attention towards the physical and psychological repercussions of work demands on veterinarians, there has been very limited research on other professions exposed to similar, if not identical, workplace demands. These demands can include large workloads, a limited salary, long work hours, and emotional trauma (Black, Winefield, & Chur-Hansen, 2011).

Some of the tasks required of veterinary nurses are classified as high-risk, such as dealing with stressed and unpredictable animals; handling animals with zoonotic diseases such as toxoplasmosis, Cryptococcus, leptospirosis, psittacosis and chlamydiosis (Fritschi, 2000; Van Soest & Fritschi, 2004); providing surgery assistance; heavy lifting; handling biohazards; and conducting radiographs with X-radiation (Van Soest & Fritschi, 2004). Research into these hazards has only been conducted recently. For example, in the United States and United Kingdom evidence has emerged of veterinary clinics not providing adequate protection from X-radiation and gas anaesthetics (Fritschi, 2000). However, there has been limited research, if any, into the effects of workplace demands on veterinary nurses' psychological wellbeing (Van Soest & Fritschi, 2004), or into the effects of psychological stressors such as dealing with conflict and grief, and the professional need to euthanise animals (Rohlf & Bennett, 2005; Sanders, 2010).

Despite sharing similar tasks and demands, veterinarians' and veterinary nurses' professional orientations are completely separate. The primary focus for a veterinarian is animal treatment while for a veterinary nurse it is animal care (Rohlf & Bennett, 2005). Veterinary nurses are required to provide preventive measures and outpatient maintenance, however like veterinarians they can be faced with the terrible duality of providing care *and* implementing euthanasia (Rohlf & Bennett, 2005).

As noted above the stressors, strains and coping strategies among veterinary nurses have rarely been researched. To the author, it seems that most individuals in this profession are in it to 'make a difference' and push themselves every day to provide the most practicable patient care possible – sometimes at the expense of their own wellbeing. However, some practitioners manage to provide this kind of care for many years without compromising their own wellbeing (Fritschi et al., 2009). This has led the author to investigate why individuals stay and how they manage to thrive in such demanding work.

1.4. Purpose of the study

Previous research that has examined the work of veterinary nurses has focused on the consequences of risky or stressful tasks such as euthanasia, exposure to biohazards, X-radiation, and zoonosis (Frommer & Arluke, 1999). There has, however, been no attempt to explore why individuals stay in and enjoy their roles, or to study the psychological wellbeing of veterinary nurses. Therefore, this research attempts to identify the reasons as to why veterinary nurses, operating in high-demand, high-strain, dangerous and underpaid roles would not only stay, but also have high levels of workplace engagement.

1.5. Thesis outline

The reminder of this thesis is structured as follows:

Chapter 2 focuses on occupational stress and a common presentation of stress—workplace burnout. Burnout is defined and linked to the workplace engagement and intention to leave the workplace.

Chapter 3 defines the Conservation of Resources model and its theoretical link to the Job Demands—Resources model (JD-R). In addition, the motivational and health pathways are explained and linked to previous research and the author's hypothesised outcomes.

Chapter 4 identifies the shortcomings of the JD-R model and adds two additional social variables which may further explain veterinary occupational wellbeing. The work—family interface and the exchange between team—members are proposed as additional socially—focused facets of an expanded JD-R model.

Chapter 5 outlines the participants who contributed to the research, the measures that were used to gather data, and the statistical method used to analyse the data. This chapter also describes the statistical fit of the study's variables.

Chapter 6 reports the research results, specifically it describes general relationships between variables; it ascertains the measurement and structural fit of the study's variables and hypothesised models respectively; and reports the outcomes of each hypothesis.

Chapter 7 discusses the research findings, the theoretical and practical implications of the study and identifies further research. It then follows with limitations of the research and concludes with a summary of findings.

Chapter 2: Organisational wellbeing

Introduction

This chapter begins by outlining organisation wellbeing and determining the link between stress theory and burnout. It then delineates the three facets of burnout as emotional exhaustion, cynicism or depersonalisation and reduced workplace efficacy. The link between burnout and workplace engagement and occupational commitment or intention to leave work is also described.

2.1. Stress and wellbeing definitions

Stress is a term borrowed from the engineering sector and was originally used to explain the responses of animals in experiments (Selye, 1978). It is now used to explain the stages of alarm, resistance and exhaustion in humans. With this broad definition, stress could be conceptualised as both negative (distress) and positive (eustress) factors relating to the wellbeing of the individual (Pascale, Norbert, Wolfgang, Nicola, & Laurenz, 2012). In an occupational setting, an individual who experiences eustress would be more likely to reflect positive workplace behaviours such as organisational commitment (Bakker, Demerouti, de Boer, & Schaufeli, 2003) and workplace engagement (Schaufeli, Bakker, & Salanova, 2006b). In addition, individuals who are distressed could present in many different ways. For instance, they could become withdrawn (Arnold & Feldman, 1982), exhausted, or reflect antisocial or depersonalised behaviour or burnout (Schaufeli & Taris, 2005; Toppinen-Tanner, Kalimo, & Mutanen, 2002). For the purposes of this thesis, 'stress' will be taken to mean negative, rather than positive, stress that is an individual's negative relation, reaction and performance to a situation (Eschleman, Alarcon, Lyons, Stokes, & Schneider, 2011). In particular the focus will be on a particular form of distress reaction, namely burnout (see section 2.2). Positive responses to workplace demands can also arise,

and this thesis focuses on workplace engagement (section 2.3) as a positive correlate of work-related demands.

2.2. Burnout

Burnout is a well-established concept that has been studied as a part of occupational psychology for over thirty-five years (Schaufeli, Leiter, & Maslach, 2009). Research has focused on the relationships among workplace burnout organisational change, organisational and employee wellbeing, interpersonal relationships, and vocational satisfaction (Leiter & Maslach, 1988, 2004; Maslach & Leiter, 2008; Schaufeli, Leiter, et al., 2009). It has been linked to many types of ill-health, such as depression (Hakanen, Schaufeli, & Ahola, 2008), reduced immune efficiency (Schaufeli, Bakker, & van Rhenen, 2009) and to higher workplace absenteeism (Bakker, Demerouti, de Boer, et al., 2003).

The term 'burnout' was coined by Freudenberg (1974), and the conceptual definition was proposed by Maslach and Jackson (1981). These authors defined burnout as an 'inappropriate response to chronic work stress' (Aguayo, Vargas, de la Fuente, & Lozano, 2011, p. 344). Initially, burnout research was centred around individuals working in areas such as teaching, nursing and social work (Halbesleben & Buckley, 2004). However, recent research has shown burnout to be well-established within other areas such as dentistry (Hakanen, Schaufeli, et al., 2008), manufacturing (Ahola, Väänänen, Koskinen, Kouvonen, & Shirom, 2010), and administration and finance (Hansez & Chmiel, 2010). Burnout has been conceptualised as containing three independent dimensions. The two closely related core dimensions of burnout are emotional exhaustion and cynicism or depersonalisation (Maslach & Jackson, 1981); the third dimension is reduced personal efficacy.

Emotional exhaustion is defined as a lack of the energy that an individual once applied to their job, which in turn creates a sense of reduced ability to commit to their

work. This lack of energy also gives rise to a sense of having minimal resources to effectively complete work tasks (Maslach & Zimbardo, 1982). Cynicism, also referred to as depersonalisation, is often a result of emotional exhaustion. The individual detaches themselves from their work role and becomes defensive, unsympathetic, or indifferent towards their job role and those associated with their job (Halbesleben & Buckley, 2004).

Lastly, reduced personal efficacy is the reduced sense of having the ability to complete one's role effectively (Maslach & Zimbardo, 1982). Reduced personal efficacy is independent of the other two dimensions and seems to develop separately at a later stage of the burnout process (Hakanen, Schaufeli, et al., 2008). Following the recommendations of previous research (Schaufeli & Taris, 2005), and taking into account the cross-sectional conditions of this study, reduced personal efficacy was not measured in this research. It appears that this facet of burnout directly relates to the other variables in this study, and its delayed onset means that its cause can only be determined by longitudinal research (Hakanen, Schaufeli, et al., 2008).

Presently, there are four models of burnout, all of which juggle with the onset, cause and/ or relationships between cynicism, inefficacy and exhaustion. First, Golembiewski and Munzenrider (1988) created the phase model of burnout to argue that the three dimensions of burnout develop one after another as burnout intensifies. They concluded that cynicism is the first phase of burnout, which is succeeded and overlaid by inefficacy, and finally followed by emotional exhaustion. However, this model could be restrictive in assuming the progression of burnout is linear and that burnout dimensions follow each other and do not interact in different sequences (Leiter & Maslach, 2005; Maslach & Schaufeli, 1993).

Second, Leiter and Maslach's (1988) alternative process model of burnout argues that one dimension of burnout triggers the development of subsequent

behavioural symptoms. For instance, an employee displaying depersonalised behaviours towards peers and managers could eventually isolate themselves and feel exhausted.

Third, Cherniss's (1980) transactional model of burnout argues that there are three stages of burnout that an individual experiences, (1) an imbalance between work demands and individual resources; (2) an emotional response of exhaustion; and (3) changes in attitudes and behaviours to reflect defensive coping and greater stress. However, this model does focus heavily on changes in behaviour and less on inefficacy and cynicism (Leiter & Maslach, 2005).

Lastly, Leiter and Maslach's (2004) mediation model of burnout identifies job stressors in terms of person–job imbalances and their relationship to exhaustion, cynicism and reduced personal efficacy (Leiter & Maslach, 2005; Maslach & Jackson, 1984). This is the most adopted conceptual measure and definition of burnout (Hakanen, Schaufeli, et al., 2008; R. T. Lee & Ashforth, 1996; Schaufeli & Taris, 2005) and therefore this research will utilise this conceptualisation of burnout.

In summary, the syndrome of occupational burnout is well–established in many occupations, including most human services (Schaufeli, Leiter, et al., 2009). The antecedents of burnout are also well–established, whereby high job demands and inadequate resources contribute to the increased probability of an individual reporting feeling emotionally exhausted and depersonalised (Schaufeli & Bakker, 2004). However, it is less clear why veterinary nurses (and others) choose to stay in their role under stressful conditions. To identify these reasons one would need to establish what factors are enabling veterinary nurses to reduce the effects of stress and remain in their current roles. Therefore, thesis research cannot simply investigate burnout; it must also investigate positive workplace variables such as workplace engagement (Schaufeli & Bakker, 2004).

2.3. Workplace engagement

Workplace engagement is a relatively new concept that has been included in much practitioner research and research within organisations (Macey & Schneider, 2008). It has been identified as distinct from an individual's attitude towards their job and functions on a separate nomological network, which in turn increases its incremental and predictive validity as a predictor of job performance (Christian, Garza, & Slaughter, 2011). However, like other organisational and psychological variables, there has been much debate on the true meaning of 'workplace engagement' and its antecedents. There also has been speculation as to whether workplace engagement is actually an 'old wine in a new barrel' (Christian et al., 2011; Shuck, 2011). Some authors contend that workplace engagement is actually a reconceptualisation of previously established concepts such as job satisfaction (Newman & Harrison, 2008), organisational commitment (Harrison, Newman, & Roth, 2006), and organisational citizenship behaviour (OCB); (Macey & Schneider, 2008).

However, research has identified that most mainstream conceptualisations of workplace engagement are distinct from constructs such as organisational commitment (Schaufeli, Salanova, González-romá, & Bakker, 2002; Viljevac, Cooper-Thomas, & Saks, 2012) and OCB (Halbesleben, Harvey, & Bolino, 2009). While workplace engagement is highly correlated with job satisfaction (Harter, Schmidt, & Keyes, 2003; Viljevac et al., 2012; Wefald, Mills, Smith, & Downey, 2012; Yalabik, Popaitoon, Chowne, & Rayton, 2013), it is in fact a distinct construct, that may mediate, or be an antecedent of, job satisfaction (Viljevac et al., 2012).

There are three main conceptualisations of workplace engagement (Shuck, 2011): (1) the need-satisfying approach (Kahn, 1990); (2) the satisfaction-engagement approach (Harter, Schmidt, & Hayes, 2002); and (3) the burnout-antithesis approach (Maslach & Leiter, 1997). First, the need-satisfying approach is a widely established theory that has

attempted to conceptualise practitioners' approaches to workplace engagement into an operationalised psychological construct (Christian et al., 2011; Rothbard, 2001). It consists of many different epistemological and philosophical approaches, such as social identity theory (Ashforth & Mael, 1989), psychoanalytic theory (Freud, 1922), and self-actualisation theories (Maslow, 1970).

The need-satisfying approach argues that workplace engagement reflects the overall workplace satisfaction of an employee, which is governed by internal and external variables that encourage employees' full exertion in their workplace (Shuck, 2011). It considers both intrinsic and extrinsic effects that interact with employees' workplace perceptions, such as perceived availability of resources, satisfaction with management, and work role clarity (Shuck, 2011).

Engagement has been defined as – 'the simultaneous employment and expression of a person's "preferred self" in task behaviours that promote connections to work and to others, personal presence, and active full role performances' (Kahn, 1990, p. 700). In this approach, engagement would present as an employee being 'mentally present' in their work role or absorbed by their current work, with their attention fixed on the tasks required to successfully attain an acceptable standard of performance, thereby creating positive outcomes for both individuals and organisations (Bakker, Schaufeli, Leiter, & Taris, 2008).

The likelihood of engagement is governed by the individual's perceived levels of (a) meaningfulness, (b) psychological safety, and (c) availability of resources in their work (Kahn, 1990; Shuck, 2011). Meaningfulness is the subjective evaluation as to whether effort or the positive outcomes of effort are perceived as worthwhile (Kahn, 1990). Psychological safety is the perception that the workplace environment is safe enough to allow individuals to reflect their true personality without fear of reprisal to self-image, position or

profession (Shuck, 2011). Availability is the perception of the availability of resources to support psychological, emotional and behavioural demands (Christian et al., 2011).

The satisfaction–engagement approach, meanwhile, is based on around 30 years of research in the Gallup Workplace Audit (GWA) reviews; (Harter et al., 2003). The Gallup organisation defines workplace engagement as an ‘individual’s involvement and satisfaction with as well as enthusiasm for work’ (p. 417). It uses broaden–and–build theory (Fredrickson, 1998) to conceptualise the antecedents of workplace engagement. As such, workplace engagement would be the outcome to the organisation supporting the individual’s most elementary emotional desires within the workplace. If the organisation supports the individual’s positive emotions (joy, interest, contentment, and care or love), they will reciprocate with workplace engagement (Harter et al., 2002).

Although the needs–satisfaction approach is essentially a motivational concept that characterises the energetic distribution of personal resources towards the tasks related with the work role (Christian et al., 2011), the satisfaction–engagement approach is less concerned with a focus on work tasks and more with the attitude towards the organisation or work role. It refers to perceptions of working conditions and job characteristics rather than the work tasks required of the individual (Christian et al., 2011; Harter et al., 2002).

The third approach was proposed by Maslach and Leiter (1997), who argue that workplace engagement is a continual and ubiquitous psychological state that has no particular focus (Schaufeli et al., 2002). It is seen as the direct antithesis to burnout and the three burnout factors of emotional exhaustion, cynicism, and reduced personal efficacy are countered by the positive factors of vigour, dedication and absorption (Schaufeli et al., 2002).

Vigour is defined as an individual's high level of energy and psychological resilience, or their inclination to invest energy into their work (Schaufeli & Bakker, 2004). Dedication is the individual's willingness to align their own identity with that of their workplace and a sense of pride that helps encourage the individual to completely commit themselves into their work role. Absorption, meanwhile, is the individual's willingness and ability to completely immerse themselves into their work role, which can give a sense of 'time flying by' (Bakker, Albrecht, & Leiter, 2011; Hakanen, Bakker, & Demerouti, 2005; Schaufeli & Bakker, 2001; Schaufeli et al., 2002; Schaufeli et al., 2001; Shimazu & Schaufeli, 2008).

Initially this conceptualisation of workplace engagement was measured with the Maslach Burnout Inventory (MBI); (Maslach & Jackson, 1996), in which low scores on emotional exhaustion and cynicism and high scores on efficacy indicate high levels of workplace engagement (Maslach & Leiter, 1997; Schaufeli et al., 2002). However, it has been argued that this method measured lack of burnout instead of engagement per se (Schaufeli et al., 2002). Further developments have aimed to measure the presence of engagement rather than the lack of burnout.

In summary, Shuck (2011) suggests that it is up to the researcher to decide which perspective on engagement best fits their proposed research question. The present research explores the relationships between workplace demands and resources on turnover intention, through the mediating effects of engagement and burnout, in the context of how New Zealand veterinary nurses relate to their work role. The research aims to explore the relationships between job demands and resources and the effects each may have on engagement, burnout and intention to leave. Clear and measurable definitions of both workplace engagement and burnout that relate to the workplace environment of New Zealand veterinary nurses should determine the choice of approach (Rothbard, 2001). This rationale directs the research towards the burnout–antithesis approach, as it is measurable

(Schaufeli et al., 2002), well-established within similar occupations (Schaufeli et al., 2006b), and it sees engagement as distinct from burnout (Shuck, 2011).

Having adopted the burnout–antithesis approach, the specific factors of engagement were conceptualised to oppose those of burnout (Schaufeli et al., 2002). Research has established emotional exhaustion to relate negatively with workplace engagement (Hakanen, Bakker, & Schaufeli, 2006; Schaufeli & Bakker, 2004). As such, this research will examine whether this relationship applies to New Zealand veterinary nurses. Therefore, it was hypothesised that:

Hypothesis 1 (H1): Workplace engagement will be negatively related to emotional exhaustion.

2.4. Intention to leave

The training, selection and recruitment of employees is an extremely costly process, and although turnover intentions are as varied as individuals (Mobley, Griffeth, Hand, & Meglino, 1979), there are variables that organisations may identify and address to reduce turnover. Turnover intention is the individual's intention to search for alternative employment and leave or remain in the workplace (Chughtai, 2013; O'Driscoll & Beehr, 1994; Pitts, Marvel, & Fernandez, 2011). It can be viewed as a process of appraisal considering specific variables such as job alternatives, economic impacts, vocational and emotional costs in relation to the current work environment and a prospective employer (Mobley, 1977). Moreover, turnover intention can be defined as a state of cognitive withdrawal that consists of thoughts of leaving, the intent to search for alternative employment, and the intention to quit, coupled with the act of job search behaviour (Hom & Griffeth, 1991; O'Driscoll & Beehr, 1994).

Past research has used turnover intention to indicate whether variables such as productivity, burnout, engagement and commitment are antecedents of intentions to leave (Campbell, Perry, Maertz, Allen, & Griffeth, 2013; Galletta, Portoghese, Battistelli, & Leiter, 2013; T. W. Lee, Mitchell, Wise, & Fireman, 1996). Individuals who wish to leave their workplace may do so for reasons that are completely unrelated to their work lives (O'Driscoll & Beehr, 1994), and other variables such as negative workplace history and perceived lack of workplace resources may affect quit behaviours (Bakker, Demerouti, & Schaufeli, 2003). The only sure sign of an individual's intent to leave is when they are actively searching for an alternative (Arnold & Feldman, 1982; G. Blau, 1993; Kopelman, Rovenpor, & Millsap, 1992; T. W. Lee et al., 1996), but this is impractical to measure in many situations. Intentions to leave have been found to be a valid predictor of actual turnover rates (G. Blau, 1993; T. W. Lee et al., 1996; Steel & Ovalle li, 1984), and are the focus of the current study.

In summary, intention to leave has been used in the current research as an outcome variable to identify whether the variables of workplace burnout and engagement affect veterinary nurses' decision to leave work. The following chapter incorporates workplace burnout, engagement, and intention to leave into the Job Demands–Resources model in an attempt to explain veterinary nurses' level of wellbeing in a potentially high–demand workplace. Turnover intention will be included in hypotheses formulated in Chapter 3.

Chapter 3: Job Demands and Resources

3.1. Introduction

The conservation of resources (COR) model is one of the foundation theories on which the Job Demands–Resources model (JD-R) is based. This chapter describes the COR model, its antecedents, and how it fits within the JD-R model. In addition, the existing research on the health and motivational pathways and how burnout, engagement, turnover intention, and job demands and resources fit within these pathways is reviewed.

3.2. Conservation of resources

The COR model identifies that individuals aim to protect, preserve and invest resources that can function as a buffer to reduce strain. It identifies that individuals will invest resources to protect resources from further or potential loss (Hobfoll, 2001), and the more resources individuals have the more likely they will invest their resources to gain future resources (Hobfoll, 2001). Job resources can be defined as ‘objects, personal characteristics, conditions or energies that are valued in their own right or that are valued because they act as conduits to the achievement or protection of valued resources’ (Hobfoll, 2001, p. 339). They are the things that people value and consequently strive to attain, preserve and defend (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008). Individuals who have limited resources are more likely to lose them and those with more are more likely to gain further resources (Hakanen, Perhoniemi, et al., 2008).

COR moves away from response–based approaches to stress and focuses on the causes of distress (Hobfoll, 1989, 2001; Hobfoll, Johnson, Ennis, & Jackson, 2003). It identifies that resources are required to overcome stress associated with ongoing or particular events. Accordingly, if an individual’s resource pools are depleted or not

equipped to deal with an event, stress will ensue (Hobfoll, 1989, 2001; Hobfoll et al., 2003). This model identifies the disparity between resource loss and resource gain. Resource loss can be considered as the depletion of an individual's collective or personal resources in relation to a particular scenario or event, while resource gain is the acquisition of resources in spite of resource loss (Hobfoll, 1989). A major premise is that individuals who have large reservoirs of resources would be most successful at protecting and gaining further resources because they have more resources to invest, causing increasing gains (Hobfoll, 1989). Other implications are that individuals who have high workplace demands and inadequate resources may aim to protect their resources via managing job demands (Hobfoll, 1989, 2001). As a result, they may not have enough energy to be vigorously absorbed and dedicated to their work, and may suffer from job strain (Li, Jiang, Yao, & Li, 2013; Schaufeli, Bakker, et al., 2009; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Conversely, individuals with fewer resources, may take higher risks to gain additional resources, have a higher risk of loss, and be unable to invest resources towards future gains (Hobfoll, 2001). Individuals with limited resources would be more likely to be exposed to loss causing a potentially cyclic loss–spiral, in which further losses of resources reduces their resource pool (Hakanen, Perhoniemi, et al., 2008; Hakanen, Schaufeli, et al., 2008; Hobfoll, 1989, 2001).

3.3. Criticisms of COR

COR assumes that stress depends exclusively on the availability of resources and overlooks the dynamics, frequency and characteristics of other 'stuff' such as demands to which resources are required to respond (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001). This issue relates to a broad definition of resources in which a resource could be anything and therefore measurement becomes an issue. A resource should be something that benefits, protects or promotes wellbeing and that, by its absence, does not directly

cause strain. In other words, by failing to provide information about the kind of events or situations that require resources to address, the COR model does not make a clear distinction between demands and lack of resources as sources of stress. Herein lies the piece missing from the COR: it fails to specify that resources, when lacking, may take on the characteristics of a demand and contribute to further resource loss and strain (Demerouti et al., 2001).

Without identifying the interplay between job demands and resources in relation to wellbeing, the COR model only specifies a unidirectional path between job resources and a reduction of job resources (Demerouti et al., 2001). To rectify this shortcoming the demands–control model (DCM); (Hockey, 1993) hypothesise that perceived job stress was the result of high job demands and limited job control (Hakanen et al., 2005; Karasek, 1979). Subsequently, the Job Demands–Resources (JD-R) model (Demerouti et al., 2001) was proposed, which combines the COR model and the DCM to explain the effect of both job demands and resources on other resources, demands, and overall wellbeing. The JD-R model provides a well–rounded and parsimonious approach to occupational wellbeing (Demerouti et al., 2001).

3.4. Job demands–resources model

The JD-R model (see Figure 1) is conceptualised as a dynamic occupational model. It incorporated the DCM (Hockey, 1993; Karasek, 1979) and COR model (Hobfoll, 1989, 2001) to describe a functional and holistic picture of workplace wellbeing (Demerouti et al., 2001; Xanthopoulou, Bakker, Dollard, et al., 2007). The JD-R model identifies that, irrespective of occupation, the psychosocial work environment can be categorised into two facets: job demands and job resources, and that these determine the overall wellbeing and organisational commitment of the individual (Hakanen, Schaufeli, et al., 2008). The model highlights that more salient and less superficial resources assist in limiting the effect of a

demanding workplace (del Líbano, Llorens, Salanova, & Schaufeli, 2012; Demerouti et al., 2001). Jobs subjected to many demands and with inadequate levels of resources may, thus contribute towards less workplace engagement and increased emotional exhaustion and cynicism.

However, the JD-R model may be too simplistic. Previous research has identified significant unexplained variance between job demands and workplace engagement (Crawford, LePine, & Rich, 2010). This unexpected variance has been written off as an artefact in the data (Bakker, van Emmerik, & Euwema, 2006; Schaufeli & Bakker, 2004) but may also be explained by individuals' appraisals of and coping with demands (Crawford et al., 2010).

There has been very little research using the JD-R model to focus on the well-being of veterinary nurses, but ample research on occupations whose job demands and resources may correspond to those of veterinary nurses. Research has identified the energy-depleting process of high work demands resulting in job strain, and the motivational process of high job resources resulting in positive workplace behaviours (Bakker, Le Blanc, & Schaufeli, 2005).

The JD-R model has been developed into a multidimensional model that consists of two pathways (Figure 1). The health pathway identifies the process of energy depletion and consists of job demands, workplace strain such as burnout, and reduced organisational commitment (Bakker, Demerouti, & Verbeke, 2004; Hakanen et al., 2006) or ill-health (Bakker & Demerouti, 2007). The motivation pathway identifies the motivational processes that consist of job resources, positive workplace behaviours such as workplace engagement, and organisational commitment (Bakker, Demerouti, de Boer, et al., 2003; Demerouti et al., 2001; Hakanen et al., 2005). In addition, although originally the health and motivational

pathways of the JD-R model were portrayed as separate processes, research has established interactions between the pathways (Hakanen et al., 2006).

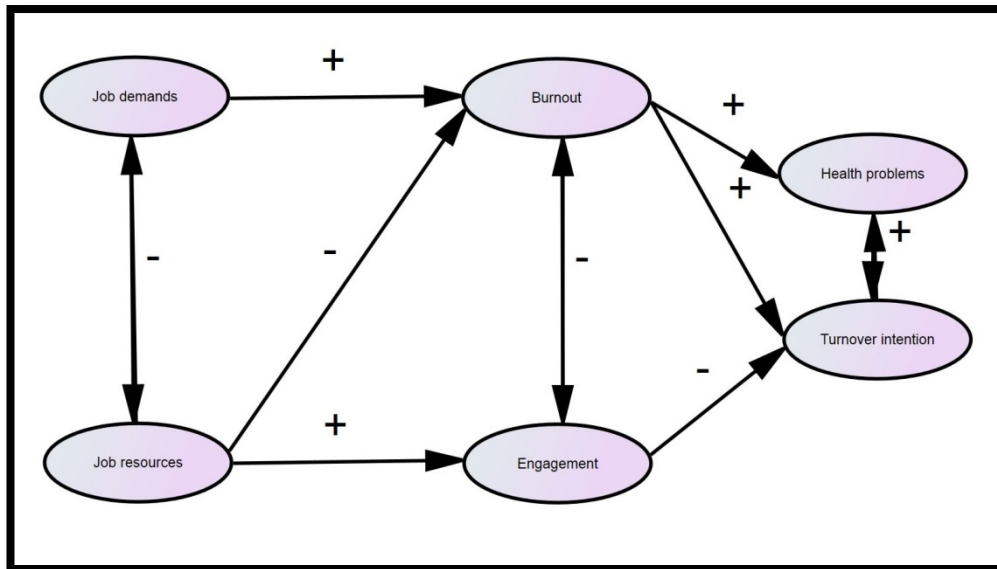


Figure 1: The Job Demands–Resources model (JD-R). Negative signs represent negative relationships (e.g. more resources mean less burnout); positive signs represent positive pathway (e.g. more resources means more engagement). Adapted from W. B.Schaufeli and A. B. Bakker,2004, “Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study,” 25(3), p. 297. Copyright 2004 by the *Journal of Organizational Behavior*.

3.5.The health pathway

Job demands are defined as ‘physical, social, or organisational aspects of the job that require sustained physical or mental effort’ (Demerouti et al., 2001, p. 501). These are the facets of an individual’s job role that may create potential strain. Ongoing and/or unrealistic expectations, exertion, and effort can be conceptualised as job demands. Resources may minimise the effects of job demands and reduce stressful outcomes (de Jonge & Dormann, 2006; Demerouti et al., 2001; Frese, 1999).

Matching theory contends that for a resource to effectively minimise the impact of demands on outcomes such as emotional exhaustion, it must specifically address and directly counter the effects of a demand (Bakker, ten Brummelhuis, Prins, & der Heijden, 2011). However, research from several empirical studies shows that resources do not have

to align; in effect these studies have established that various combinations of job demands and resources may have similar effects on one another, and resources do not have to specifically oppose a demand (Bakker & Demerouti, 2007; Bakker, Demerouti, & Euwema, 2005; Hakanen et al., 2005; Xanthopoulou, Bakker, Demerouti, et al., 2007).

In researching job demands and resources it is important to identify which demands and resources represent a relatively accurate picture of the occupational tasks veterinary nurses may encounter. This research has identified veterinary nurses' likely job demands and resources through exploring previous research on similar occupations such as dental (Hakanen, Schaufeli, et al., 2008), intensive care unit (ICU); (Divatia, 2014; Kuguoglu, Aytekin, & Yilmaz, 2014), emergency, and primary care nurses (Ayala & Carnero, 2013).

In particular, medical nurses appear to have similar or parallel workplace dynamics to veterinary nurses. These include disparities in gender (Hakanen, Perhoniemi, & Bakker, 2014), occupational conditions such as variable shift work (Bakker, Le Blanc, et al., 2005), emotional investment (Freeney & Fellenz, 2013) and degree-level qualifications (e.g. the three-year degree in the Bachelor of Nursing at Massey University), which are required to effectively execute the work (Özden, Karagözoğlu, & Yildirim, 2013).

Many occupational facets of medical nursing work could be categorised as job demands and may contribute to negative occupational outcomes (Tummers, van Merode, & Landeweerd, 2002). However, it seems the most the prominent job demands relative to medical nurses are (a) workload or quantitative job demands (Bakker, Le Blanc, et al., 2005; Dasgupta, 2012; Panari, Guglielmi, Simbula, & Depolo, 2010; Schmidt & Diestel, 2013; Tummers et al., 2002), (b) cognitive complexity or cognitive demands (de Rijk, Le Blanc, Schaufeli, & de Jonge, 1998; Hystad, Eid, & Brevik, 2011), and (c) psychological or emotional demands (Hawkins, Howard, & Oyebode, 2007; Mallett, Price, Jurs, & Slenker, 1991; Mark & Smith, 2012).

Quantitative demands can be defined as the frequency of task allocation, and the available time required to complete the work task (Pejtersen, Kristensen, Borg, & Bjorner, 2010). For example, a nurse's workload would be partly determined by the number of patients who require care and this may be unpredictable, requiring the nurse to fit in and complete new tasks during timeframes allocated to other tasks, pushing the nurse to rush (Bakker, Le Blanc, et al., 2005).

Emotional demands are prolonged, sustained and invested psychological efforts that may be disturbing or psychologically draining (Pejtersen et al., 2010). For this research, an emotional demand could be the psychological effort required of veterinary nurses to cope, complete or manage a task or situation (Pejtersen et al., 2010), such as managing a critical patient who they have to euthanise (Baran et al., 2009). The nurse may find this disturbing or psychologically draining and may have to console and relate emotionally to a family member who has found the event to be upsetting (Mallett et al., 1991).

Cognitive demands are the frequency, difficulty and complexity of the moment-to-moment cognitive requirements needed to adequately complete a task (de Rijk et al., 1998; Pejtersen et al., 2010). For example, a cognitive demand may be a life-threatening situation that requires a veterinary nurse to analyse and perform a procedure which could save the patient's life. The nurse would need to quickly weigh-up the possible outcomes of each of a range of options, and identify the most practicable option, while performing effective care.

Although these three classes of demands are broad they contribute to ascertaining a New Zealand veterinary nurse's level of cognitive and psychological investment, and the frequency and complexity of moment-to-moment decisions required to complete workplace tasks (Pejtersen et al., 2010).

The COR model contends that an individual would be more concerned with avoiding resource loss than accomplishing gains, and it is more likely that demands would lead to burnout than resources that could buffer against it (Halbesleben & Buckley, 2004). The health pathway of the JD-R is an 'energy draining process' (Hakanen, Schaufeli, et al., 2008, p. 255), related to emotional exhaustion (Bakker, Le Blanc, et al., 2005; Black et al., 2011; Demerouti et al., 2001; González-Romá, Schaufeli, Bakker, & Lloret, 2006; Hakanen, Schaufeli, et al., 2008; Li et al., 2013; Nahrgang, Morgeson, & Hofmann, 2011; Schaufeli & Bakker, 2004; Xanthopoulou, Bakker, Demerouti, et al., 2007). The health pathway also specifies that low resources and high demands contribute to energy draining and emotional exhaustion.

Accordingly ongoing and/or excessive workplace demands such as quantitative workload, emotional and cognitive demands can result in strain and emotional exhaustion, which can in turn lead to reduced organisational commitment and higher turnover intent (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Demerouti et al., 2001; Hakanen, Schaufeli, et al., 2008; Q. Hu, Schaufeli, & Taris, 2011). Therefore, it is hypothesised that:

Hypothesis 2 (H2): Job demands are positively related to emotional exhaustion (burnout).

Previous research has found that high demands and low resources are the primary antecedents of burnout. It appears that high job demands and inadequate job resources intensify the effect of emotional exhaustion and cynicism (R. T. Lee & Ashforth, 1996; Schaufeli & Bakker, 2004). Burnout may occur through two processes. First, job demands lead to prolonged strain that contributes to emotional exhaustion (Ahola, Salminen, Toppinen-Tanner, Koskinen, & Väänänen, 2013; Demerouti et al., 2001; Hakanen, Schaufeli, et al., 2008; Schaufeli & Taris, 2005). Second, lack of job resources reduces the individual's

ability to effectively overcome emotional exhaustion which in turn leads to withdrawal behaviour such as cynicism (Demerouti et al., 2001). Therefore, it is hypothesised that:

Hypothesis 3 (H3): Emotional exhaustion is positively related to cynicism (burnout).

Of interest to this research is the relationship between a veterinary nurse's emotional exhaustion and turnover intention. A specific facet of burnout, emotional exhaustion has been found to have a positive relationship with an individual's intention to leave the workplace (Schaufeli & Bakker, 2004). This effect may be due to the reduced reciprocal exchange between the individual and their organisation. Specifically, the social exchange between the two parties may be perceived as inequitable by the individual and thereby feelings of commitment to the organisation may be reduced (Schaufeli & Bakker, 2004). Employing this rationale, if a veterinary nurse feels the cause of their emotional exhaustion is their work role, their commitment to the organisation would reduce and may increase turnover intention, (Geurts, Schaufeli, & De Jonge, 1998; Jamal, 1990).

Therefore, it is hypothesised that:

Hypothesis 4 (H4): Emotional exhaustion mediates the relationship between job demands and turnover intention; and

Hypothesis 5 (H5): Emotional exhaustion is positively related to turnover intention.

Job demands contribute to job strain, which can cause burnout (Leiter & Maslach, 1988). However, job resources may function as means to overcome strain, and reduce the propensity to feel drained and fatigued (Hobfoll & Freedy, 1993). A veterinary nurse may be able to buffer the effects of emotional exhaustion through having adequate resources such as positive recognition or promotion. Therefore, it is hypothesised that:

Hypothesis 6 (H6): Job resources will be negatively related to emotional exhaustion.

3.6. The motivational pathway

The motivational pathway has a different process from the health pathway. It reflects an individual's occupational wellbeing through the investment of resources to reduce the effects from job demands and to promote positive workplace behaviours and organisational commitment (Demerouti et al., 2001; Schaufeli & Bakker, 2004; Schaufeli, Taris, & van Rhenen, 2008). A workplace behaviour commonly studied within the motivational pathway is work engagement, which consists of vigour, dedication and absorption (Schaufeli et al., 2002).

Job resources relate to psychological, social, physical, and/or the occupational facets of the job (Hakanen, Schaufeli, et al., 2008). They can function in three ways. First, they may operate in achieving work goals. Second, they may contribute to the development of personal growth, learning, and occupational enhancement. Third, job resources may function to ease or reduce job demands and the psychological and physiological strain they create (Schaufeli & Bakker, 2004).

Much research has investigated the effects of job resources on workplace wellbeing, and has found that job resources not only contribute to the reduction of job demands, but also contribute towards positive workplace wellbeing and workplace engagement (Hakanen, Schaufeli, et al., 2008; Q. Hu et al., 2011; Schaufeli & Bakker, 2004; Schaufeli et al., 2008; Wefald et al., 2012; Xanthopoulou, Bakker, Dollard, et al., 2007; Yalabik et al., 2013). Studies investigating medical nurses' wellbeing found that the most prominent job resources for determining occupational outcomes were (a) possibilities for development (Opie et al., 2010; Trinchero, Brunetto, & Borgonovi, 2013), (b) job predictability (Bégat, Ellefsen, & Severinsson, 2005; Spence Laschinger, Grau, Finegan, & Wilk, 2012), and (c) workplace recognition (Caruso et al., 2012).

Potential for workplace development is an individual's perception of their opportunities and their ability to learn new information and utilise pre-established skills and training at work (Pejtersen et al., 2010). Workplace development is a job resource as it can indicate to the individual that their knowledge, skills and abilities are significant and worthy of investment (Landy & Conte, 2010b; Xanthopoulou, Bakker, Demerouti, et al., 2007), thereby increasing their sense of efficacy and promoting wellbeing.

Predictability is the perception that there is an appropriate and effective supply of information that enables the individual to successfully complete their work tasks (Pejtersen et al., 2010). This also reflects the individual's perception of job control, as workplaces that do not effectively communicate appropriate information may affect the individual's ability to complete their work tasks and reduce their feelings of control and job predictability (Dasgupta, 2012; de Rijk et al., 1998).

As established by existing research, the need for control in most individuals is high (de Rijk et al., 1998; White, 1959). Perceptions of high job predictability result in perceptions of workplace control (Burr, Albertsen, Rugulies, & Hannerz, 2010; Pejtersen et al., 2010; White, 1959), reducing strain caused by unpredictable work and allowing the allocation of resources towards the effective completion of workplace tasks (Caruso et al., 2012).

Workplace recognition is the perceived respect, acknowledgement and just treatment received from managers and peers (Caruso et al., 2012; Kristensen & Borg, 2003; Pejtersen et al., 2010). Workplace recognition functions in two ways: (1) an individual's perception of managerial behaviour – whether their actions are just and recognise good effort, and (2) an individual's perception of consistency, where effort is rewarded consistently and fairly (Mone, Eisinger, Guggenheim, Price, & Stine, 2011; Pejtersen et al., 2010; Scanlan, Meredith, & Poulsen, 2013).

If job resources are abundant enough to effectively reduce the strain caused by job demands, the individual may be able to invest further resources into ensuring future gains (Hobfoll, 1989, 2001). The JD-R model's motivational pathway reflects how the availability of resources create motivation through the individual's need for positive fulfilment, often expressed by individuals investing resources for further growth, development, learning or goal achievement (Schaufeli, Bakker, et al., 2009).

Organisations that offer resources that promote development could motivate individuals to dedicate themselves to their work through resource investment. An individual's dedication to work is often reflected in their invested energy, vigour, absorption, dedication and organisational commitment, and reduced intention to leave (Nahrgang et al., 2011; Salanova & Schaufeli, 2008; Schaufeli, Bakker, et al., 2009). Therefore, it is hypothesised that:

Hypothesis 7 (H7): Job resources are negatively related to job demands.

Hypothesis 8 (H8): Workplace engagement is negatively related to turnover intention.

In summary, this chapter has defined the COR and JD-R models and identified specific research that has focused on the current research's hypotheses. The next chapter describes two additional variables that the JD-R model does not include. It explores the work–family interface and how the work domain interacts with the family domain, specifically the perception of work benefiting or enriching family life, which in turn may increase positive workplace behaviours such as engagement. In addition, the social exchanges between team members are conceptualised as a resource that operates in unison with job resources to buffer the effects of job demands. Both of these social

variables are proposed by the author as a 'missing link' and it is hypothesised that their inclusion may further explain the dynamics of workplace wellbeing.

Chapter Four: Work–family balance and team–member exchange

Introduction

Resources can also come from interpersonal networks, such as those involving family members outside work, and team members and peers at work. In addition to the resources as outlined in Chapter 3, this study examines work–family balance and team member exchange in relation to the JD-R model. These variables are proposed as the ‘missing link’ of the JD-R model, and this chapter discusses them as social resources.

4.1. Work–family balance

Work–family facilitation, positive spillover, enhancement and enrichment are the primary concepts used to explain the positive outcomes caused by work and family/life domains interacting in harmony (Grzywacz, Carlson, Kacmar, & Wayne, 2007). Although some of their characteristics differ, the concepts have much in common. For instance, all are bidirectional in that they identify two pathways that operate simultaneously. These consist of a work–to–family pathway, in which work–based antecedents affect the family domain; and a family–to–work pathway in which family based antecedents affect the workplace domain.

4.1.1. *Theoretical underpinnings*

Resource scarcity proposes that an individual’s resources are limited and that to adequately perform in a specific role one must compromise resources in another role (Merton, 1957). In other words, the allocation of resources towards role A would cause strain on resources in role B. To minimise role strain an individual employs certain psychological tactics such as delegation and compartmentalisation to attempt to satisfy demands (Merton, 1957). However, the resource scarcity concept contends that these

tactics do not allow an individual to effectively cover all demands all the time, so resource allocation is devoted to factors of the highest value (Goode, 1960). Resource scarcity is bidirectional in that it allows the work role to interfere with the family role and vice versa (Greenhaus & Beutell, 1985), but it does not allow for one role to facilitate or support the other.

Consequently, work–family and family–work conflict could be an outcome of resource scarcity, and these are serious issues that may contribute to physical and mental ill–health and reduced marital satisfaction (Bakker, ten Brummelhuis, et al., 2011; Balmforth & Gardner, 2006; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005).

Therefore, adopting the resource scarcity and conflict approach would focus only on negative aspects of work–family balance (Kirchmeyer, 1993). The present research focuses on role accumulation, the positive side of the work–family interface (Greenhaus & Powell, 2006). Role accumulation counters the resource scarcity model and identifies that people are not necessarily debilitated by role strain. It ascertains the effective ‘mechanisms’ in place that counteract role strain (Sieber, 1974) and holds that positive interactions between work and family may maintain or increase wellbeing (Greenhaus & Powell, 2006).

Positive experiences can create spillover from one domain into another, creating increased wellbeing (Barnett & Hyde, 2001; Greenhaus & Powell, 2006). Positive experience, skills, energy and other resources from one domain can counteract or buffer the effects of distress caused by another domain, enhancing the individual’s ability to effectively function in multiple roles (Greenhaus & Powell, 2006; Marks, 1977; Sieber, 1974).

4.1.2. Hypotheses and expected outcomes:

Resource scarcity has been overtaken by ideas of positive interactions between the roles, and family and work resources can support each other (Powell & Greenhaus, 2006). Four existing concepts define the interaction of accumulation within the work and family domains. They are: (1) positive spillover, (2) work–family enhancement, (3) work–family facilitation, and (4) work–family enrichment (Carlson, Kacmar, Wayne, & Grzywacz, 2006). In most work–family research these perspectives are interchangeable (Powell & Greenhaus, 2006), however it appears that work–family enrichment is the most appropriate concept for the theoretical framework of this research. As such, it focuses on the individual’s perception of positive spillover and the benefits of domain harmony. It only requires self-report and is easy to measure (Greenhaus & Powell, 2006).

The original conceptualisation of the JD-R model holds that the health and motivation pathways may function alongside each other. However, as workplaces become more flexible and mobile, the domains between work and family have become increasingly blurred and intertwined (Landy & Conte, 2010a). Therefore, the JD-R model needs to adapt to this paradigm shift and be expanded to incorporate the possible effect of other life domains.

Role enrichment helps further explain how a wide range of resources impact workplace wellbeing by capturing the effects of work resources enriching family life and vice versa (Greenhaus & Powell, 2006). Research has identified that enrichment in the family domain can directly or indirectly be affected by the availability of resources in the work domain (Carlson et al., 2006; Hakanen, Peeters, & Perhoniemi, 2011; Hakanen, Schaufeli, et al., 2008; Peeters, Watez, Demerouti, & de Regt, 2009; Wayne, Grzywacz, Carlson, & Kacmar, 2007). For example, individuals who report high levels of job autonomy, a workplace resource that allows the individual to freely decide how to approach

workplace tasks, have high levels of work-to-family enrichment (Grzywacz & Butler, 2005).

Therefore it was hypothesised that:

Hypothesis 9 (H9): Work-to-family enrichment is positively related to job resources.

Role enrichment has also been linked to wellbeing (Carlson, Hunter, Ferguson, & Whitten, 2014; Demerouti, Shimazu, Bakker, Shimada, & Kawakami, 2013; Hultell & Gustavsson, 2011; Karatepe, 2010; Peeters et al., 2009), work satisfaction (Carlson et al., 2014; Sim, 2013), and workplace engagement (Bakker, Schaufeli, et al., 2008), in line with the COR model that states that available resources may be invested to gain further resources, thus leading to future resource gains (Hobfoll, 1989).

Workplace engagement can increase role enrichment through positive affective spillover. When engagement is present, the positive affect caused by vigour, absorption and dedication in role A can spill over into other roles, such as family (Airila et al., 2014; Culbertson, Mills, & Fullagar, 2012; Hakanen et al., 2011; Siu et al., 2010). Therefore, it was hypothesised that:

Hypothesis 10 (H10): Work-to-family enrichment is positively related to workplace engagement.

In addition, enrichment may mediate the relationship between job resources and workplace engagement (Wayne et al., 2007). Individuals who experience adequate job resources that are perceived to benefit their family life may feel more dedicated and more energised at work (Hakanen et al., 2011; Wayne et al., 2007). In other words, resources provided at work could instrumentally or affectively enhance the family domain, thereby increasing the individual's propensity to reciprocate with investment of energy into work (Wayne et al., 2007). A perceived enhancement of the family domain would allow the

individual to further invest their resources into their work, increasing their resource reservoir (Hobfoll, 2001). Therefore, it was hypothesised that:

Hypothesis 11 (H11): Work-to-family enrichment will mediate the relationship between job resources and workplace engagement.

The family-to-work pathway has been found to function differently from that of the work-to-family enrichment pathway. Instead of operating as a mediator between family resources and family wellbeing, family-work enrichment may function as a resource that increases workplace engagement (Grzywacz, 2000; Grzywacz & Bass, 2003; Lu, 2011; McNall, Nicklin, & Masuda, 2010). It appears that work enrichment created by the resources gained in the family domain may be different to those gained from work (Carlson et al., 2006). As such, resources that spill over from the family domain may not increase job resources, but instead may directly increase engagement (Hakanen et al., 2011; Jaga, Bagraim, & Williams, 2013). Therefore, it was hypothesised that:

Hypothesis 12 (H12): Family-to-work enrichment will be positively related to workplace engagement.

4.2 Team-member exchange

This research incorporates team-member exchange into the JD-R model as an additional resource that functions to buffer and increase the effects of job resources on workplace strain and workplace engagement (Bakker, Demerouti, et al., 2005; Bakker, van Emmerik, & van Riet, 2008; Haines, Hurlbert, & Zimmer, 1991).

Social exchange is defined as an individual's interaction with their leaders, subordinates and peers and is governed by the implicit need to promote and endorse one's own self-worth (P. M. Blau, 1964). Social exchange theory (SET) assumes that humans are

innately social, and the promotion of an individual's self-worth directly relates to the social group in which they belong (Homans, 1958). Individuals who are faced with common goals are likely to work in collaboration with each other and share resources such as time and experience to accomplish tasks (Emerson, 1976).

In addition, individuals are likely to use social ties to address job demands (Bakker, Demerouti, et al., 2005; Bakker, van Emmerik, et al., 2008). Therefore, team-member exchange is utilised in this study to explain how interpersonal interactions with the social group at work can help overcome demands and increase collective resources (see Figure 2). Team Member Exchange has been conceptualised as a measure of the quality of social exchange between individuals through their willingness to assist, share resources, and interact with members of their team or group (Seers, 1989). Team members who reflect high-quality exchange relationships are likely to also report higher levels of trust and willingness to encourage an exchange of information and resources (Chiaburu & Harrison, 2008; Deckop, Cirke, & Andersson, 2003; Edmondson, 1996; Halbesleben, 2006). With high quality exchanges, particular skills and attributes should be better utilised thereby increasing team performance and collective job resources (Hoegl & Wagner, 2005).

In addition, professional relationships between peers may strengthen the relationship between the individual and the organisation (Cartwright & Holmes, 2006; Cole, Schaninger Jr, & Harris, 2002; Liao, Yang, Wang, Drown, & Shi, 2013). Individuals who are a part of a team are often exposed to the same demands, resources and general stimuli as their peers and therefore often can experience similar strains (Totterdell, 2000). The impact of demands and resources on individuals within a team may also affect other team members (Bakker et al., 2006), which could be argued to be a form of emotional contagion (Bakker, Schaufeli, Sixma, & Bosveld, 2001; Bakker et al., 2006; Hatfield, Cacioppo, & Rapson, 1994; Ilies, Wagner, & Morgeson, 2007; Totterdell, 2000).

With this in mind, this research is interested in utilising the team-member exchange model to investigate the effects team-member exchange may have on an individual's resources (Chandola, Kuper, Singh-Manoux, Bartley, & Marmot, 2004). A quality team-member exchange relationship may indicate that an individual perceives a high level of trust within their peer group (Liao et al., 2013). Quality exchanges may indicate psychological connectedness and effective occupational commitment to the team (Kahn, 1990; Seers, 1989). If a workplace supplies adequate and appropriate job resources for the individual, it may increase their propensity and obligation to invest available resources into their team, thus creating a reciprocal resource reservoir between team members (Allen & Rogelberg, 2013; Bakker, Demerouti, de Boer, et al., 2003; Cole, Walter, Bedeian, & O'Boyle, 2012). Therefore, it was hypothesised that:

Hypothesis 13 (H13): Team– member exchange will be positively related to job resources.

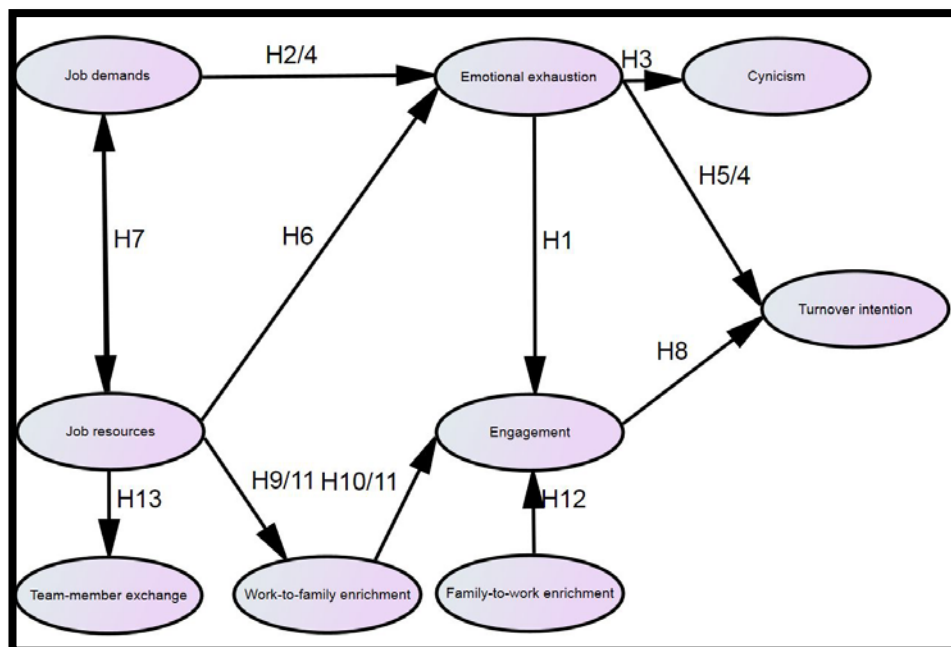


Figure 2: The expanded JD-R model (JD-Rs) with the work–family enrichment and team–member exchange concepts. H's represent hypothesised pathways. Adapted from W. B.Schaufeli and A. B. Bakker, 2004, "Job demands, job resources, and their relationship with burnout and engagement: A multi–sample study," 25(3), p. 297. Copyright 2004 by the Journal of Organizational Behavior.

In summary, both work-family enrichment and team-member exchange have been hypothesised to fit within the JD-R model and to function as a mediator and a resource respectively. The two additional variables of the updated motivational pathway have been hypothesised to function as social variables that link the individual's social ties and family role to workplace wellbeing. As such, when both variables operate at high-quality and harmonious levels, workplace wellbeing should increase. The following chapter outlines the method used to evaluate the hypothesised pathways (see Figure 2).

Chapter 5: Method

Introduction

This chapter describes the method used in this research. A cross-sectional web-based survey was used to collect data from New Zealand veterinary nurses. Participants were contacted via Facebook groups; the alumni email contacts of eight New Zealand tertiary educational providers; and the New Zealand Veterinary Nurse Association (NZVNA). Information about the study was provided along with a link to the survey. Ethics approval was secured by a Low Risk Notification to the Massey University Ethics Committee. All responses were anonymous. To maintain confidentiality, information on participants' workplaces was not collected and therefore no data were available as to size of practices or the nature of their work.

5.1. Participants

Participants were New Zealand-based veterinary nurses who had recently practised or who were currently practising in the profession. According to Statistics New Zealand (2013b) 1479 people classified themselves as veterinary nurses in the 2013 Census, and 253 of these responded, representing 17.1% of the New Zealand veterinary nurses community.

The final sample comprised 182 (72%) respondents, as 71 (28%) surveys of the original sample contained more than 10% missing data (Byrne, 2010). Using Little's (1988) missing completely at random (MCAR) test, the remaining data showed no significance in non-random patterns between data points. Missing data were then imputed using the collective medians of each data point (Byrne, 2010; Field, 2009; Little, 1988).

The participants included 3 males (1.2%) and 179 female (98.3%). The very small number of male participants meant that gender differences could not be examined and

both gender groups were combined. Participants' experience ranged from less than one year to more than 10 years' in the profession, with the average experience being 5 years and 1 month (standard deviation [SD]= 3.42). The participants' qualifications were categorised as currently studying (0.5%); a New Zealand Qualifications Authority (NZQA) - approved National Certificate in Veterinary Nursing (46.7%); a Diploma in Veterinary Nursing (39.5%); a Bachelor Degree in Veterinary Technology (2.7%); and miscellaneous qualifications (10.4%), for example a diploma received from the Royal College of Veterinary Nurses (RCVN) or a Bachelor of Zoology with a Psychology minor (see Table 1).

Most worked full-time (76.4%); the average hours worked per week were 37.26 (SD = 10.20). Participants' average period of time spent in their current role was 2 years, 9 months (SD = 2.31; see Table 1). The average number of team members participants worked with was 4. In addition, participants were asked to specify their current work role and the majority (82.96%) specified they had one work role only: 40.4% were junior nurses, 52.23% senior nurses, 3.97% were in a supervisory role, and 3.31% were practice managers (see Table 2).

Table 1:

Means, standard deviations (SDs) and other descriptive statistics of participants

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>%</i>
<i>Qualifications</i>				
Currently training			1	.50
Certificate			86	47.20
Diploma			71	39.00
Bachelor degree			5	2.70
Other			19	10.40
<i>Gender</i>				
Male			3	1.60
Female			179	98.40
<i>Contract type</i>				
Full-time			139	76.40
Part-time			40	22.00
Locum			3	1.60
<i>Years qualified</i>	5.20	3.42		
<i>Years in role</i>	2.31	1.37		
<i>Hours per week</i>	37.27	10.20		
<i>Average team members worked with</i>	4.12	1.23		

Note. N= number of participants, % = percentage of participants.

Table 2:

Frequencies and percentages for participants' specified work roles

<i>N work roles</i>	<i>N</i>	<i>%</i>
<i>1 work role</i>		
Junior nurse	61	40.40
Senior nurse	79	52.23
Supervisor	6	3.97
Practice manager	5	3.31
<i>2 work roles</i>		
Junior nurse & supervisor	1	4.00
Senior nurse & supervisor	21	84.00
Senior nurse & practice manager	3	12.00
<i>3 work roles</i>		
Junior nurse, senior nurse & supervisory	2	33.33
Senior nurse, supervisory & practice manager	4	66.67

Note. N= number of participants, % = percentage of participants.

5.2. Measures

Burnout was assessed with the Maslach Burnout Inventory – General Survey (MBI-GS); (Maslach & Jackson, 1981). The scales for emotional exhaustion and cynicism were included as they were the most relevant to the aims of this study; reduced personal efficacy was not included. Items were a 7–point Likert scale, where 0 = ‘never’ and 6 = ‘always/every day’. Confirmatory factor analysis (CFA) was undertaken to identify the items which best specified each scale (see Table 3). Emotional exhaustion consisted of 4 items (Items 1, 3, 7, and 9; see Appendix B), (e.g. ‘I feel emotionally drained from my work’). Cynicism was measured with 5 items (see Appendix B), (e.g. ‘I worry that this job is hardening me emotionally’). The reliability coefficients (Cronbach’s alpha) for emotional exhaustion and cynicism were .89, and .76 respectively.

Workplace engagement was assessed with the shortened version of the Utrecht Work Engagement Scale (UWES-9); (Schaufeli, Bakker, & Salanova, 2006a). Initially, from the 9–item scale, 4 items (items 1, 2, 4 and 9; see Appendix B) were identified in the CFA to display the best one–factor fit (see Table 3). In addition, the single–factor measure reflected better fit than a three–factor measure, which had reduced fit (see Table 3; $\chi^2 = 135.52$, $p < .01$, TLI = .84, CFI = .88, and RMSEA = .15). The scale was used to ascertain the participants’ levels of energy (vigour), dedication, and absorption they invest into their work. To assess workplace engagement as a whole concept, the items of the UWES–9 were combined into an aggregate measure (Schaufeli et al., 2006a). Work engagement was rated on a 7–point Likert scale, where 0 = ‘never’ and 6 = ‘always/every day’ (e.g. ‘At my work, I feel bursting with energy’ – vigour; ‘My job inspires me’ – dedication; and ‘I am immersed in my work’ – absorption). The reliability coefficient (Cronbach’s alpha) for workplace engagement was .89 (see Table 3).

Turnover intention was assessed with a 3 item measure (see Appendix B) (O'Driscoll & Beehr, 1994; O'Driscoll, Ilgen, & Hildreth, 1992). The 3 items best fitted a single factor after error variances for items 2 and 3 were constrained (see Table 3; Byrne, 2010). Item 1 was scored on a 6–point Likert–type scale, where 1 = ‘never’ and 6 = ‘all the time.’ Items 2 and 3 were scored on a six–point Likert scale, where 1 = ‘very unlikely’ and 6 = ‘very likely’ (e.g. ‘How likely is it that, over the next year, you will actively look for a new job outside this organisation?’ - Item 2). The reliability (Cronbach’s alpha) for turnover intention was .86 (see Table 3).

Job demands were assessed with the Copenhagen Psychosocial Questionnaire version 2 (COPSOQ-II); (Pejtersen et al., 2010). Quantitative, emotional and cognitive demands were assessed (e.g. quantitative demands – ‘how often do you not have time to complete all your work tasks?’; emotional demands – ‘does your work put you in emotionally disturbing situations?’; and cognitive demands – ‘do you have to keep your eyes on lots of things while you work?’). The scales comprised 3 items each, rated on a 5–point Likert scale, where 1 = ‘always’ and 5 = ‘never/hardly ever’. CFA was undertaken to identify the items which best specified each scale. Analysis identified a single factor for job demands, comprising 5 items (items 2, 4, 5, 6, and 8; see Appendix B), with a Cronbach’s alpha of .74. Details of the CFA are presented in the Data Analysis section below. Fit indices are presented in Table 3.

Job resources were assessed with the COPSOQ–II (Pejtersen et al., 2010). Potential for development, job predictability and recognition were assessed (e.g. potential for development – ‘does your work give you the opportunity to develop your skills?’; job predictability – ‘do you receive all the information you need in order to do your work well?’; and recognition – ‘are you treated fairly at your workplace?’).The scales comprised 4 items for potential for development, 2 for job predictability, and 3 for recognition. Each item was

rated on a 5–point Likert scale, where 1 = ‘to a very small extent’ and 5 = ‘to a very large extent’. CFA was undertaken to identify the items that best specified each scale. Analysis identified a single factor for job resources, comprising 4 items (items 4, 5, 6 and 9; see Appendix B), with a Cronbach’s alpha of .84 (refer to Tables 3 and 5).

Work–family enrichment contained two facets: (1) work–to–family enrichment (WFE) and (2) family–to–work enrichment (FWE). Both facets were assessed with Carlson, Kacmar, Wayne, and Grzywacz’s (2006) measure of work–family enrichment. All items were rated on a 5–point Likert scale, where 1 = ‘strongly disagree’ and 5 = ‘strongly agree’. To maximise reliability and validity, 4 items were used to measure WFE (items 3, 5, 7 and 9; see Appendix B); (e.g. ‘my work helps me to gain knowledge and this helps me be a better family member’) (Carlson et al., 2006). The reliability coefficient (Cronbach’s alpha) for WFE was .86.

Additionally, 5 items were used to measure FWE (items 2, 4, 5, 6 and 8; see Appendix B); (e.g. ‘My family helps me to gain knowledge and this helps me be a better worker’). FWE was treated as an aggregate measure (Carlson et al., 2006). CFA was undertaken to identify the items which best specified each scale. The reliability coefficient (Cronbach’s alpha) of FWE was .88 (refer to Table 3 for fit indices).

Team–member exchange was assessed with Seers, Petty, and Cashman’s (1995) Team–Member Exchange Quality Scale (TMX). The scale assessed the participants’ willingness and flexibility to invest energy and communicate with team members. Item 1 was scored on a 5–point Likert scale, where 1 = ‘never’ and 5 = ‘always.’ Items 2 and 3 were scored on a 5–point Likert scale, where 1 = ‘not well’ and 5 = ‘very well’. Item 4 was scored on a 5–point Likert–type, where 1 = ‘not willing’ and 5 = ‘very willing.’ (e.g. ‘How willing are other members of your team to help finish work that was assigned to you?’). Initially, from the 10–item scale, 4 items were identified in the CFA to display the best one–factor fit

(items 2, 4, 5 and 10; see Appendix B); (see Table 3). The reliability (Cronbach's alpha) of TMX was .77.

Demographic variables included (1) gender, (2) length of time as a qualified practitioner, (3) current qualification, (4) contract type, (5) time in current role, (6) role type, (7) average working hours per week, and (8) the number of team members the participant worked with (see Appendix B).

Table 3:
Fit indices for the parameter-level measurement models

Measure	<i>df</i>	X^2	<i>p</i>	TLI	CFI	RMSEA
1 Demands	5	8.97	.11	.96	.98	.07
2 Resources	2	3.52	.17	.99	.99	.07
3 Work-to-family enrichment	2	2.66	.27	.99	.99	.04
4 Family-to-work enrichment	5	8.90	.11	.99	.99	.07
5 Team-member exchange	2	2.95	.23	.98	.99	.05
6 Workplace engagement	2	3.77	.15	.99	.99	.07
7 Emotional exhaustion	2	3.71	.16	.98	.99	.07
8 Cynicism	5	8.79	.12	.97	.99	.07
9 Turn over intention	1	.85	.37	1.00	1.00	.00

Note. *df* = degrees of freedom, X^2 = Chi-squared, *p* = probability, TLI = Tucker-Lewis Index, CFI = comparative fit index, and RMSEA = root mean square error of approximation. Each variable was tested for goodness of fit.

5.3. Data analysis

The data met the parametric assumptions of normality (see Table 4). Bivariate relationships were examined using Pearson's correlation coefficient. The two-stage process recommended by Anderson and Gerbing (1988) was used to test the hypothesised relationships. The first stage consisted of building measurement models for each variable (see Table 3). Measurement models were independently constructed and tested to provide evidence of construct validity for each measure. For a sample size of around 150 Anderson and Gerbing (1988) recommend there should be more than three indicators per construct. As the current study had 182 participants, all exogenous and endogenous variables had at least three indicators.

To test each variable's construct validity, Hair, Black, Babin, and Anderson (2009) suggest examining the variables' average variance extracted (AVE) to gauge convergent validity and comparing the AVE to the average shared variance (ASV) of other variables of interest to gauge discriminant validity. AVE reflects the variance explained by a group of items that theoretically represent a latent variable through measurement, such as job demands. For instance, the items that are included to represent job demands would co-vary to explain its variance (Chin, 1998; Fornell & Larcker, 1981). An AVE value greater than .5 suggests that the variance explained by items that represent a latent variable explains the proportion of its variance (Fornell & Larcker, 1981) and indicates good convergent validity (Hair et al., 2009).

In addition, ASV measures the variance of every item outside a specific latent variable and identifies the cross-loading of these items (Chin, 1998; Hair et al., 2009). As such, ASV was used to distinguish whether the variance of a variable such as job demands would be explained by other items not included to represent it. Therefore, AVE establishes whether the items within a variable accurately represent it and ASV indicates whether the latent variable is so broad that it may represent multiple constructs within a model. Furthermore, Hair et al. (2009) recommend comparing the AVE of a latent variable to its ASV. If a variable's ASV value is greater than its AVE value, the majority of the variable's variance is explained by items belonging to other variables items outside of that variable (Chin, 1998; Hair et al., 2009).

Each variable was tested for multicollinearity against its respective dependent variable (Byrne, 2010; Field, 2009; Hair et al., 2009; L. T. Hu & Bentler, 1998). All variables were significantly distinct from other variables (see Table 4). The data were assessed for normality by the evaluation of kurtosis and skew at the item level with AMOS 20.0 (Arbuckle, 2009) and showed no significant kurtosis or skew. The hypothesised 9-factor

measurement model's factors were individually tested for goodness of fit and were grouped into eight predictors: job demands; job resources; burnout; workplace engagement; work-to-family enrichment; family-to-work enrichment; team-member exchange; and one outcome variable consisting of turnover intention (see Table 3).

Table 4:

Multicollinearity matrix for the variance inflation factor of each measurement variable

Measure	Mean	1	2	3	4	5	6	7	8	9
1 Job demands	1.41		1.41	1.43	1.44	1.44	1.44	1.28	1.44	1.44
2 Job resources	2.18	2.23		2.08	2.23	1.94	2.27	2.27	2.29	2.13
3 Work-to-family enrichment	1.98	2.04	1.87		2.06	2.06	1.71	2.02	2.04	2.05
4 Family-to-work enrichment	1.05	1.06	1.04	1.06		1.06	1.04	1.05	1.04	1.06
5 Team-member exchange	1.66	1.70	1.44	1.70	1.70		1.69	1.69	1.65	1.68
6 Workplace engagement	1.86	1.91	1.90	1.58	1.88	1.90		1.86	1.91	1.89
7 Emotional exhaustion	2.10	1.96	2.20	2.17	2.20	2.19	2.16		1.89	2.06
8 Cynicism	1.37	1.40	1.41	1.40	1.39	1.36	1.41	1.21		1.39
9 Turn over intention	1.91	1.96	1.82	1.95	1.95	1.93	1.93	1.82	1.92	

Note. Items 1–9 reflect variance inflation factor (VIF); items greater than ± 3 , indicate items have high shared variance.

Common method variance (CMV) may arise when a participant inaccurately conceptualises and responds to items of the study (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003b). Forms of communication between researcher and participant may cause CMV. CFA may be utilised to determine whether a single factor (Harman's single-factor test) may account for a majority of variance (Fornell & Larcker, 1981; Podsakoff et al., 2003b). The test for the fit of a single-factor measurement model is shown in in Table 7.

Due to the complexity of the hypothesised model, structural equation modelling (SEM) was used (Anderson & Gerbing, 1988; Byrne, 2010). SEM can analyse interrelationships between multiple variables and define the relationships among the complete set of variables (Hair et al., 2009). SEM was used to assess the interdependence of variables. It simultaneously assesses the relationship between exogenous and endogenous variables and measures variables that may operate as a dependent variable to one set of independent variables and also as an independent variable to other variables. In addition, because SEM assess the interdependence between variables, it can integrate latent variables into the analysis while simultaneously accounting for measurement error (Hair et al., 2009).

5.4. Model fit

The maximum likelihood method of estimation was used in conjunction with AMOS 20.0 (Arbuckle, 2009) to assess goodness of fit. Both absolute and incremental fit indices were used to assess measurement and structural model fit. Specifically, the indices were Chi-squared (χ^2), the Tucker-Lewis Index (TLI), the comparative fit index (CFI) and the root mean square error of approximation (RMSEA).

For all of the models, both absolute and incremental goodness-of-fit indices were implemented. Chi-squared (χ^2) is the original absolute-fit index for SEM and is also used as

a foundation for some of the more modern fit indexes (Byrne, 2010). However, X^2 is affected by many factors such as (a) sample size, in which larger samples have higher probability of Type I error (L. T. Hu & Bentler, 1999); (b) model size, in which models with many variables have higher X^2 values, which also increases the probability of Type II error (Bentler, 1990; Byrne, 2010); and (c) distribution, especially skew and kurtosis which can increase the X^2 value (Lockhart, 1967). Although X^2 has some issues it is still an effective fit indicator for sample sizes around 200, but cannot be a sole indicative measure. Thus X^2 was accompanied by three other incremental fit indices.

RMSEA and CFI estimate the goodness of fit between the null and alternative models (Raykov, 2000). The RMSEA uses optimally chosen parameter estimates to fundamentally test model fit against the theoretical covariance matrix of a population (Browne & Cudeck, 1989; Byrne, 2010). In other words, RMSEA is an atypical measure that represents the 'badness-of-fit' by testing the fit of the sample against a theoretic population. Both measures are sensitive to model misspecification and provide good indication of model quality (Byrne, 2010; L. T. Hu & Bentler, 1998) but are subject to over-inflated values when analysing small sample sizes (under $N = 150$) (L. T. Hu & Bentler, 1999).

Unlike RMSEA, CFI takes into account and adjusts for the issues caused by sample size and analyses the discrepancies between data points and hypothesised and null models (Bentler, 1990, 1992). TLI also examines fit with a similar method to that of CFI, however unlike CFI, TLI takes into account and adjusts for the model's specified parameters (e.g. if the hypothesised model has limited or many parameters) (Byrne, 2010; Tucker & Lewis, 1973). The fit values for both TLI and CFI range from 1.00 down to 0—a value close to one indicates a good fit, and a value of .9 or higher is taken as an indicator of good fit (Bentler, 1992). RMSEA coefficients normally operate between 1.00 and zero, and a score close to zero indicates good fit. An arbitrary cut-off of .08 and .1 has been suggested by MacCallum,

Browne, and Sugawara (1996) as an indicator of acceptable fit, however L. T. Hu and Bentler (1999) suggest that a value of less than .06 would indicate better fit.

In summary, this chapter has described the makeup of the research participants that consisted of their demographic difference such as the time in current role; and level of qualifications. It has also identified and described the measures used to measure the research's latent variables, and defined the statistical methods that will determine the validity of the research's variables and hypothesised model. In addition, chapter 5 has defined SEM and the incremental fit statistics which will be used to test the proposed SEM and pathway hypotheses. The following chapter will report the descriptive statistics; utilise Anderson and Gerbing's (1988) two-step approach to test the fit of the proposed measurement model, and employ SEM to evaluate the hypothesised outcomes.

Chapter 6: Results

Introduction

This chapter presents the research results. First, the validity and reliability of each variable is evaluated, and then Anderson and Gerbing's (1988) two-step approach to structural equation modelling is used to establish on the goodness-of-fit for the hypothesised 9-factor and Harman's single-factor measurement models (Hair et al., 2009). Mediation is then established using Baron and Kenny's (1986) test for mediation to ascertain any changes in significance between direct effects and partial mediation models. Finally, this chapter reports on the outcomes of the hypothesis testing. The maximum likelihood method of estimation was used with AMOS 20.0 (Arbuckle, 2009) to test the covariance matrices of the models (Bentler & Bonett, 1980; Tucker & Lewis, 1973).

6.1. Descriptive statistics

The correlations, means and standard deviations (SDs) are presented in Table 6. Job demands showed a moderate relationship with emotional exhaustion, cynicism and turnover intention, and negative relationships with job resources, work-to-family enrichment, team-member exchange and workplace engagement. Job resources displayed a positive relationship with work-to-family enrichment, team-member exchange, and workplace engagement, and a negative relationship with emotional exhaustion and turnover intention.

Work-to-family enrichment showed a positive relationship with team-member exchange and workplace engagement, and a negative relationship with emotional exhaustion and turnover intention. Team-member exchange showed a positive relationship with workplace engagement and negative relationship with emotional exhaustion and turnover intention. Workplace engagement, meanwhile, showed negative relationships with emotional exhaustion and turnover intention, while emotional

exhaustion showed a moderate relationship with cynicism and turnover intention.

Additionally, cynicism and turnover intention showed a moderate relationship. The only demographic variables that were significantly related were years in current work role and years qualified.

The average variance extracted (AVE) and average shared variance (ASV) values indicate good construct validity (see Table 6); (Fornell & Larcker, 1981). An AVE value of .5 and higher indicates good convergent validity and indicates that items included within a latent variable describe a proportion of its variance. An ASV value lower than an AVE value greater than .5 indicates good discriminant validity (Chin, 1998; Hair et al., 2009). The AVE values for all nine variables was greater than .5 (see Table 6), with job demands having the lowest value (.51) and turnover intention having the highest (.72). The lowest AVE and highest ASV values were for job demands but these were still above Hair et al's (2009) suggested AVE threshold of .5 and below Chin's (1998) suggested ASV threshold of .5, thus all measures indicate good convergent validity.

Table 5:

Means, standard deviations (SDs) and Pearson's correlations coefficients for study variables

		Mean	SD	AVE	ASV	1	2	3	4	5	6	7	8	9	10	11	12
1	Job demands	3.55	.58	.51	.18	(.74)											
2	Job resources	3.09	.86	.63	.28	-.35**	(.84)										
3	Work-to-family enrichment	3.03	.90	.61	.22	-.22**	.58**	(.86)									
4	Family-to-work enrichment	3.36	.86	.65	.01	-.06	-.06	.04	(.88)								
5	Team member exchange	3.10	.88	.55	.23	-.27**	.60**	.43**	.00	(.77)							
6	Workplace engagement	4.09	1.14	.63	.22	-.27**	.49**	.63**	.12	.41**	(.86)						
7	Emotional exhaustion	3.10	1.24	.59	.29	.52**	-.39**	-.42**	-.03	-.34**	-.46**	(.84)					
8	Cynicism	1.63	1.09	.53	.07	.29**	-.09	-.08	-.12	.01	-.14	.47**	(.79)				
9	Turn over intention	3.06	1.60	.72	.30	.32**	-.52**	-.47**	-.06	-.40**	-.45**	.51**	.27**	(.86)			
10	Years qualified	5.20	3.42	–	–	.07	-.04	-.10	-.03	-.04	-.14	-.06	-.06	.00	–		
11	Years in role	2.31	1.37	–	–	-.02	-.09	-.14	.00	-.10	-.01	.05	-.09	.08	.55**	–	
12	Hours per week	37.27	10.20	–	–	.09	.08	.00	.02	.11	.10	.09	.07	-.03	.12	.11	–

Note. ** Correlation is significant at the .01 level, * .05 level (2-tailed), Cronbach's alpha in parentheses, AVE = average variance extracted, ASV = average shared variance.

6.2. Measurement models

Initially, each latent variable was tested independently (Anderson & Gerbing, 1988; Hair et al., 2009) and these displayed excellent fit, the lowest fit being for job demands (see Table 6).

Table 6:
Fit indices for parameter-level measurement models

	Measure	<i>df</i>	χ^2	<i>p</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
1	Job demands	5	8.97	.11	.96	.98	.07
2	Job resources	2	3.52	.17	.99	.99	.07
3	Work-to-family enrichment	2	2.66	.27	.99	.99	.04
4	Family-to-work enrichment	5	8.90	.11	.99	.99	.07
5	Team-member exchange	2	2.95	.23	.98	.99	.05
6	Workplace engagement	2	3.77	.15	.99	.99	.07
7	Emotional exhaustion	2	3.71	.16	.98	.99	.07
8	Cynicism	5	8.79	.12	.97	.99	.07
9	Turn over intention	1	.85	.37	1.00	1.00	.00

Note. *df* = degrees of freedom, χ^2 = Chi-squared, *p* = probability, *TLI* = Tucker-Lewis Index, *CFI* = comparative fit index, and *RMSEA* = root mean square error of approximation. Each variable was tested for goodness of fit.

Once variable fit was established (Anderson & Gerbing, 1988; Hair et al., 2009), a measurement model with all 9 factors (Ma) was examined and the fit indices reflected good fit ($\chi^2 = 1048.854$, *df* = 655 *p* < .001, *TLI* = .90, *CFI* = .91, and *RMSEA* = .06), which suggests that all items loaded on to their respective factors, with minimal variance explained by cross-loading (see Table 7); (Byrne, 2010). All critical ratios for each parameter estimate were greater than ± 1.96 (*p* < .05), suggesting that all parameters accurately described their hypothesised latent variables (Byrne, 2010).

Harman's single-factor test was used to test for common method variance (CMV); (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003a). All items were aggregated into one single-factor measurement model (Mb), and fit statistics indicated poor fit (see Table 7). This indicated that a single-factor did not account for the bulk of the variance in the data (Anderson & Gerbing, 1988; Hair et al., 2009; Rees, Alfes, & Gatenby, 2013).

Table 7:

Fit indices and differentials for the research measurement models

	Model	χ^2	χ^2_{diff}	df	df_{diff}	p	TLI	CFI	RMSEA
Ma	9-factor measurement model	1009.30		637		<.001	.90	.91	.06
Mb	Harman's single-factor test for CMV	3379.09	2369.78	739	102	<.001	.39	.43	.14

Note. χ^2_{diff} = difference of Chi-squared, df = degrees of freedom, df_{diff} = difference in df .

6.3. Structural model

The results of the structural analysis showed that the hypothesised model (M1), which was based on the JD-R with the additional variables of work–family enrichment and team–member exchange (see Figure 3), fitted the data well ($\chi^2 = 1048.854$, $df = 655$, $p < .001$, TLI = .90, CFI = .91, and RMSEA = .06; see Table 8).

H1 was supported as emotional exhaustion was negatively related to workplace engagement. H 2 and H6 were supported as emotional exhaustion had a positive relationship with job demands and a negative relationship with job resources (see Figure 6).

H3 and H5 were also supported, as emotional exhaustion had positive relationships with both cynicism and turnover intention. H7 was supported as job demands had a negative relationship with job resources, as was H13 as job resources had a positive relationship with both team–member exchange and work–to–family enrichment (H9), which in turn had a positive relationship with workplace engagement (H10). In addition, H8 was supported as workplace engagement had a negative relationship with turnover intention. However, the relationship between family–to–work enrichment and workplace engagement (H12), while positive was not significant ($p < .05$).

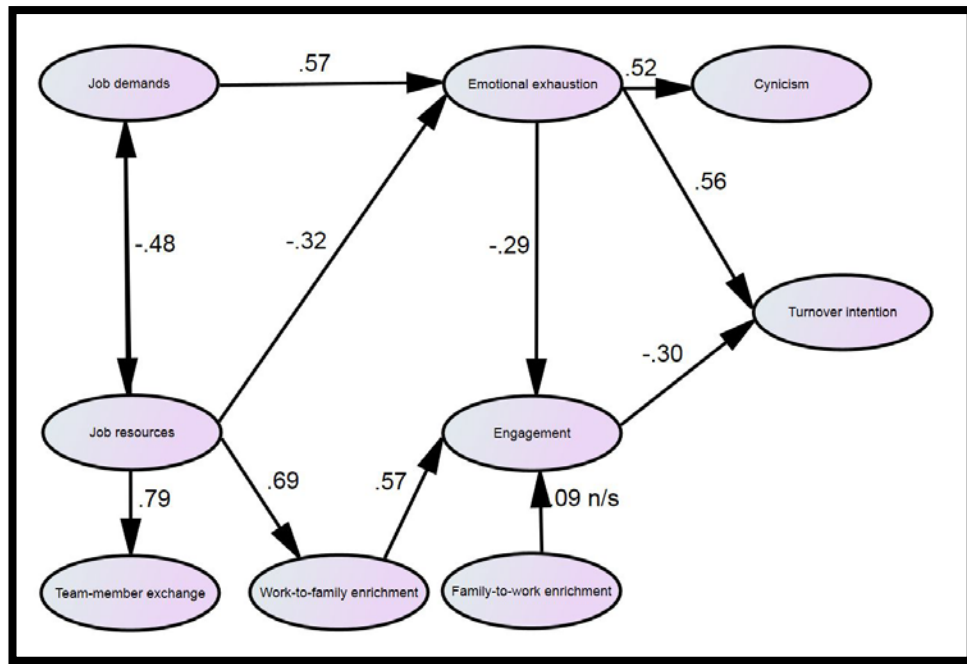


Figure 3: The expanded Job Demands–Resources (JD-Rs) model with work–family enrichment and team–member exchange included. Excluding Family-to-work enrichment, all pathways = $p < .001$.

In relation to H4 and H11 the analysis followed Baron and Kenny's (1986) guidelines for testing mediation. After the fit of the hypothesised model (M1) was established, a direct effects model (M2dir) and a partial mediation pathway model (M2par) were tested (Figures 4 and 5 respectively).

First, M2dir was tested to establish the significance of the pathway between the predictor and criterion variables (Job demands → Turnover intention). M1 indicated that the pathways between job demands and emotional exhaustion, and emotional exhaustion and turnover intention were significant (see Figure 3). M2dir (Figure 4) was adapted from M1. In M2dir, the pathways leading to and from the mediators were removed and pathways were drawn directly from predictors to outcome variables (Figure 4); (Baron & Kenny, 1986; Hakanen et al., 2006). M2dir reflected a significant relationship between job demands and turnover intention but the fit was poorer than M1 (see Table 8).

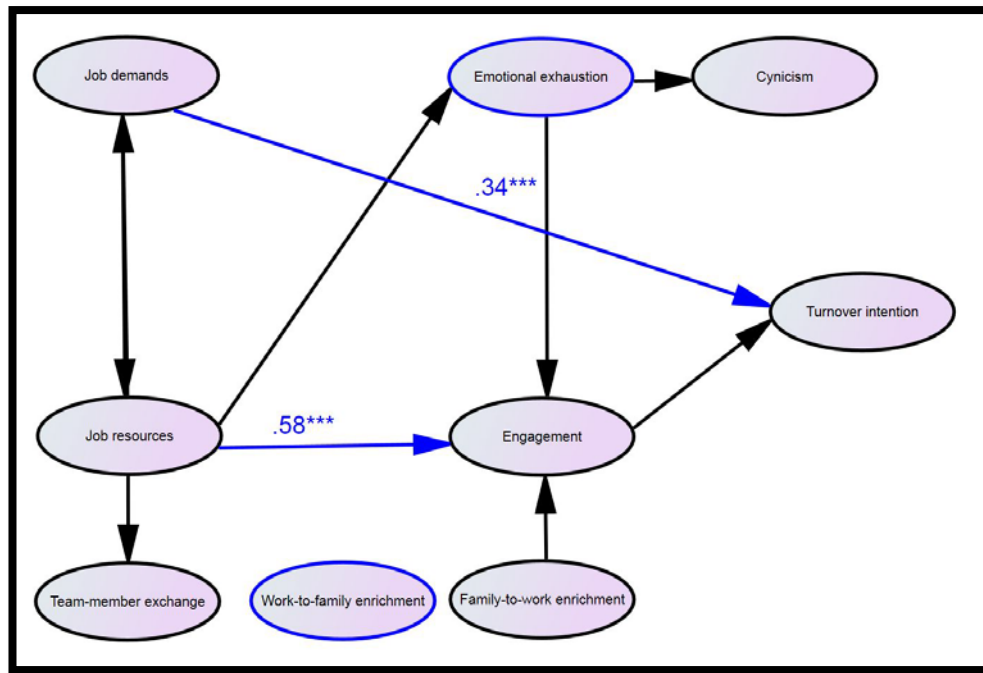


Figure 4: The direct effects model (M2dir), showing standardised regression weights without burnout and work-to-family enrichment as mediators. Blue lines represent direct pathways; *** = $p < .001$.

Table 8:
Fit indices for the structural equation models

	Model	χ^2	df	p	TLI	CFI	RMSEA
M1	Hypothesised model	1048.85	655	< .001	.90	.91	.06
M2dir	Direct effects model (without burnout and work-to-family enrichment as mediators)	1232.91	658	< .001	.85	.86	.07
M2par	Partial mediation model	1048.84	654	< .001	.90	.91	.06

Note. M1 = hypothesised model and corresponds to Figure 3; M2dir = direct effects model and corresponds to Figure 4, M2par = partial mediation model and corresponds to Figure 5.

M2par incorporated both direct and indirect pathways between predictor, outcome and mediator variables (Baron & Kenny, 1986; Bentler, 1992; Hair et al., 2009; Hakanen et al., 2006). Once the pathways of job demands to emotional exhaustion and emotional exhaustion to turnover intention were included as mediators, the significance of the direct pathways was drastically reduced and became non-significant. This established that emotional exhaustion fully mediates the pathway between job demands and turnover

intention, therefore confirming H4 (see Figure 5); (Baron & Kenny, 1986; Hakanen et al., 2006).

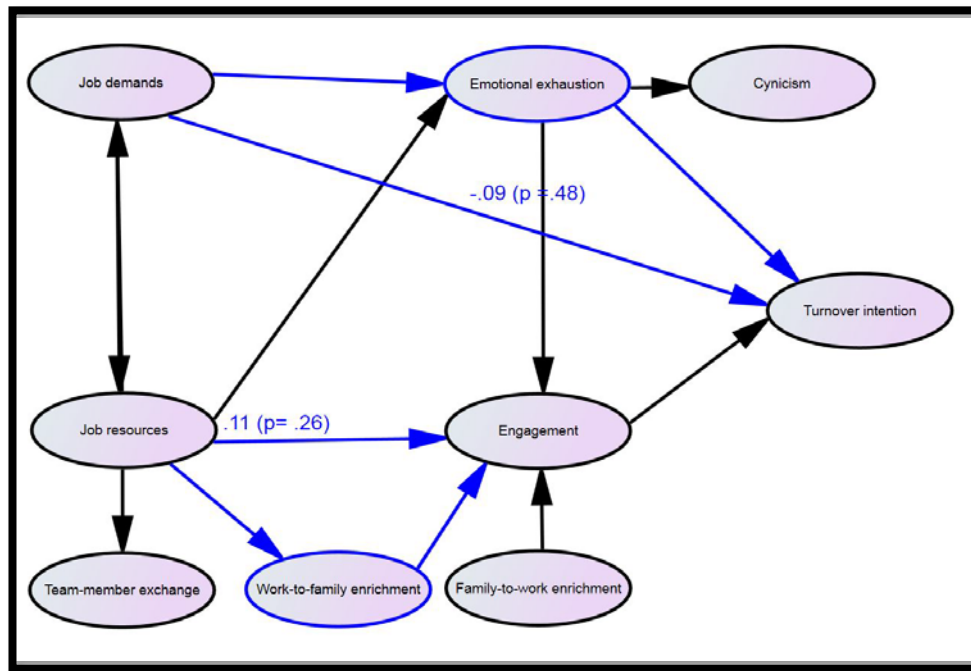


Figure 5: The partial mediation model (M2par), showing standardised regression weights with emotional exhaustion and work-to-family enrichment as mediators. Blue lines represent direct and mediated pathways.

M2dir showed a moderate relationship between the job resources and workplace engagement (see Figure 4). Once the pathways of job resources leading to work-to-family enrichment, and work-to-family enrichment to workplace engagement were included the power and significance of the direct pathways between job resources and workplace engagement drastically reduced and became non-significant (see Figure 5, for M2par). Therefore, H11 which holds that work-to-family enrichment fully mediates the relationship between job resources and workplace engagement was supported (Baron & Kenny, 1986; Hakanen et al., 2006).

In summary, construct validity was established for each variable independently through examining AVE and ASV; and through CFA for the 9-factor measurement model. Following Anderson and Gerbing's (1988) two-step approach, the validity and fit of the

measurement model was identified to be within acceptable parameters (Hair et al., 2009), SEM was then used to test the research hypotheses. Apart from H12, all other hypotheses were confirmed to be significant. The following chapter will extrapolate these findings and identify implications for research and practice; discuss recommendations for future research; and identify possible limitations.

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Chapter 7: Discussion

Introduction

The research reported in this thesis applied Demerouti et al.'s (2001) job demands-resources (JD-R) model to the veterinary nurse occupation. Additional social facets were incorporated into the JD-R to further explain the dynamics of occupational wellbeing (Bakker, Demerouti, & Schaufeli, 2003). Data were collected from a sample of 182 New Zealand veterinary nurses who completed an online survey focused on occupational wellbeing.

The aims of this research were twofold. First, it attempted to apply the well-established JD-R model to a relatively unexplored occupational group. Second, it attempted to incorporate team-member exchange (Emerson, 1976; Seers, 1989) and work-family enrichment to explain the effect of social resources on workplace wellbeing (Greenhaus & Powell, 2006). The importance of grounding the research in sound theory was recognised (Byrne, 2010; Hair et al., 2009; Hoyle, 1995) and accordingly well-established hypotheses were used to explain the dynamic processes that determine the wellbeing of veterinary nurses. Although JD-R and social resource pathways are independently well-established (Bakker, Demerouti, et al., 2005; Bakker, van Emmerik, et al., 2008; Demerouti et al., 2001; Hakanen et al., 2014; Halbesleben & Buckley, 2004), this research combined these pathways into a unique holistic occupational model.

Before the paradigm shift towards positive psychology, research had largely explored ill-health in attempts to establish preventative approaches (Kirchmeyer, 1993). Some argued that this method did not fairly represent the psychological processes of women and minority groups (Feldberg & Glenn, 1979; Kirchmeyer, 1993). The author is very conscious that this research should reflect the best interests of the profession and

represent women fairly (Feldberg & Glenn, 1979; Herzog, 2007; Lawthom, 1999). Therefore, the research attempted to establish a balanced view of workplace wellbeing to represent a profession that is dominated by women. In an attempt to establish an even-handed approach in assessing workplace wellbeing, data on workplace engagement and burnout were collected and analysed simultaneously.

Burnout has been a well-established work related syndrome within academia for over 35 years (Schaufeli, Leiter, et al., 2009). Workplace engagement is commonly considered the antithesis of burnout and contains the opposite components of burnout (Bakker, Schaufeli, et al., 2008; Maslach & Leiter, 1997, 2008; Shuck, 2011). A popular model that theorises the dynamics between burnout and workplace engagement and their antecedents is the JD-R (Demerouti et al., 2001), which has been widely used to explain the interaction of job demands and resources on burnout and workplace engagement (Bakker, Albrecht, et al., 2011; Bakker, Demerouti, de Boer, et al., 2003; Hakanen, Schaufeli, et al., 2008).

Research has established links between workplace engagement, the work-family interface (Karatepe & Demir, 2014; Siu et al., 2010), and team members' social exchange (Liao et al., 2013; Love & Forret, 2008). However, studies that have used JD-R to explain workplace wellbeing have neglected the social processes that occur within and outside the workplace. This research explored the interaction between the traditional concepts of JD-R and two social variables in one holistic model, in order to establish if variables within both the motivational and health pathways showed significant relationships between the pre-established pathways and work-family enrichment (Hakanen et al., 2011) and team-member exchange (Bakker, Demerouti, et al., 2005; Hakanen et al., 2014; Westman, 2011).

The results of structural equation modelling confirmed the direct and mediated pathways hypothesised. The hypothesised JD-R model with the added social pathways

showed good fit, suggesting the added variables explained variance in workplace wellbeing among New Zealand veterinary nurses. This indicates that the work– family interface and team–member exchange may be integral parts of the motivational and health pathways of the JD-R. This research’s findings are similar to those of Hakanen et al. (2011).

Additionally, team–member exchange was shown to relate to job resources as an independent entity. This suggests that veterinary nurses who have adequate work resources would interact well with their peers and this combination would increase participants’ propensity to be engaged and report fewer job demands, less emotional exhaustion and less intent to quit their work (Figure 3). Bakker, van Emmerik, et al. (2008) also found social exchanges between team members to be salient to the wellbeing of an individual and distinct from other resources.

As expected, emotional exhaustion mediated the relationship between demands and turnover intention. Participants who experienced high demands were also more likely to feel exhausted and consider leaving their jobs. While causation cannot be inferred from cross–sectional data, it appears as though those who feel exhausted may be more likely to see work demands as higher, and possibly those who are considering leaving (for any reason) may see their job as more demanding and exhausting than those who are committed to staying. Longitudinal research by Hakanen, Schaufeli, et al. (2008) and Hakanen and Schaufeli (2012) has provided evidence for causal pathways between job demands, burnout and occupational commitment; while they were not confirmed in this study they are plausible and deserve further research.

Results suggested that work–family enrichment may also act as a resource supporting work engagement. Supportive work resources such as learning and development within the workplace could also support family functioning, in that they may give individuals the opportunity to establish their careers, and increase their self–efficacy

and ability to support their family or desired lifestyle. In addition, the findings suggest that if the individual perceives their workplace to support family functioning they should then reciprocate and invest themselves through positive workplace behaviour. Previous research has found similar mediatory pathways wherein resources which are perceived to benefit the family domain lead to an individual's behavioural investment back into the workplace (Hakanen et al., 2011; Karatepe & Demir, 2014; Siu et al., 2010).

The response to job demands leading to burnout and eventual occupational withdrawal has been well documented within other occupations such as teaching (Hakanen et al., 2006), dentistry (Hakanen et al., 2005), medicine (Caruso et al., 2012) and now veterinary nursing. As veterinary nurses' job resources remain static or reduce and job demands increase, emotional exhaustion and cynicism increase. It appears that job demands evoke a stress response and in turn cause energy depletion which when coupled with insufficient job resources may contribute to reduced motivation and exhaustion. Left unchecked this may initiate or increase job search behaviour (Bakker, Demerouti, et al., 2005; LeRouge, Wiley, & Maertz Jr, 2013; O'Driscoll & Beehr, 1994).

Previous research has identified high turnover rates in veterinary nurses who are at the beginning of their careers (Frommer & Arluke, 1999). The current research displays no relationship between years in role and any variables in the JD-R. Therefore, it appears job tenure or experience has little to do with the health or motivational pathways of the JD-R. In other words, highly experienced veterinary nurses are just likely as less experienced nurses to report high levels of engagement or exhaustion. However, the current research's participants were relatively new to their roles, and future research is needed to determine whether there is a link between tenure, strain and wellbeing.

Of particular interest is the presence of high levels of exhaustion and engagement. Participants reported that they were both engaged *and exhausted*. It is possible that the

energy, dedication and absorption veterinary nurses show in their roles may not be sustainable and engagement may eventually turn into fatigue over time (Vinje & Mittelmark, 2007). Future longitudinal research could establish whether the high levels of workplace engagement are sustainable or whether they reduce functioning and increase burnout.

This research has established that veterinary nurses who report high levels of workplace engagement are more likely to report reduced emotional exhaustion and intent to quit their job and look for alternative employment (Hakanen, Schaufeli, et al., 2008; Saks, 2006; Shuck, Reio, & Rocco, 2011). The current research, in line with previous research (Hakanen, Schaufeli, et al., 2008; Saks, 2006; Shuck et al., 2011), shows that workplace engagement is indeed a central aspect of retaining an individual within in their current role.

Participants who perceived high levels of potential for development, predictability and recognition also reported high-quality exchanges between team members and high levels of enrichment, which may spill over into the family domain. However, social exchange between veterinary nurses should not be deemed a job resource per se, as social exchange can vary in quality and may function in parallel with either job demands or resources (Hakanen et al., 2014; Totterdell, Kellett, Teuchmann, & Briner, 1998; Westman, 2011) and can either evoke a stress or motivational response (Hakanen et al., 2014).

Moreover, individuals who perceive plentiful job resources, such as autonomy and flexibility, are more likely to report that their work life benefits the family domain (Gordon, Whelan-Berry, & Hamilton, 2007; Grzywacz & Butler, 2005; Voydanoff, 2004). This research has confirmed that veterinary nurses who report that their work benefits their family domain are more likely to be engaged with their work and more likely to reciprocate and invest energy into their work (Hakanen et al., 2011; Hobfoll, 2001).

However, these relationships do not work in isolation. For instance, work engagement and turnover intention play roles in the JD-R model in which each facet would accumulate and/or diminish through dynamic and complex interactions.

While work-to-family enrichment was found to play a significant role, family-to-work enrichment and workplace engagement were not linked in this study. Previous research has produced mixed results, with a study on a sample of American professional women finding that family-to-work enrichment was not related to job satisfaction (Gordon et al., 2007), while Siu et al.'s (2010) Chinese participants did demonstrate a link. It is possible that individuals in more collectivist societies such as China and Singapore may conceptualise the interaction between the family and work domains differently to people in more individualistic cultures such as the United States (Yang, Chen, Choi, & Zou, 2000) and New Zealand. As such, an individual in a collectivist culture may be more likely to conceptualise work as family-orientated, and as a means of provision, in contrast to a member of an individualist culture who may identify work as an obstacle that could stand in the way of caring for family (Harzing & Hofstede, 1996; Yang et al., 2000).

An individual in a collectivist society may have an instrumental need to aid the economic requirements of their family unit (Aryee, Fields, & Luk, 1999; Thein, Austen, Currie, & Lewin, 2010), and fulfilling these needs could boost the family morale and the individual's self-efficacy, which would then spill over into the work domain (Lau, 1981). In contrast, an individualist society may be more likely to conceptualise the family and work domains to be in competition with one another (Aryee et al., 1999; Thein et al., 2010), and family-to-work enrichment may be at the cost of organisational commitment and workplace engagement.

In New Zealand, family-to-work enrichment may not directly relate to workplace engagement and instead may function indirectly through an affective positive gain spiral

(Hobfoll, 2001; Powell & Greenhaus, 2006), whereby the positive affect gained at work would spill over into the family domain which would in turn reinforce positive affect in the work domain (Greenhaus, Bedeian, & Mossholder, 1987; Greenhaus & Powell, 2006; Hakanen et al., 2011). Further longitudinal cross-cultural research would be needed to distinguish whether family-to-work enrichment functions differently between collective and individualist cultures.

7.1. Implications for research

The findings of this research show that New Zealand veterinary nurses are highly-engaged in their work and have high-quality relationships with their team members. The JD-R as examined here suggests that an abundance of resources offered at work may be considered as a benefit to the family domain and thus could increase the reciprocal exchange of positive workplace behaviours such as engagement. The work domain may impact the family domain instrumentally or through positive affect and in turn the family domain may bolster workplace wellbeing. The inclusion of the work-family interface in the JD-R captures the interactional effects of exogenous life-domains on the workplace and further contributes to the explanation of workplace wellbeing. It is important to remember that the direction of causality cannot be determined through cross-sectional research. A bi-directional relationship between workplace engagement and work-to-family enrichment has been demonstrated, in which the direction of causation is not always clear (Hakanen et al., 2011; Siu et al., 2010). In addition, this research has not ascertained whether the expanded model is applicable to other occupations. Therefore, further research is needed to determine whether the direct and mediated effects demonstrated herein occur throughout the world of work.

Social and workplace resources that are perceived to benefit family may contribute to positive workplace behaviours. Therefore, the two additional variables of team-member

exchange and work–family enrichment have identified that the JD-R model gains from considering a broader conceptualisation of resources that could affect individual workplace wellbeing. Although previous research has included types of social exchange into the JD-R (Bakker, Demerouti, et al., 2005), they have only been conceptualised as a type of job resource, which could be either present or absent. Social exchanges may be a separate entity and function to complement either job resources or demands. In this research team–member exchange was related to job resources, however it may relate to job demands if the quality of exchange is poor (Seers et al., 1995). Therefore, the social dynamics between team members should be considered when gauging workplace wellbeing in team oriented–workplaces.

Conversely, dispositional factors such as neuroticism, extraversion and conscientiousness may impact the processes within the JD-R (Langelaan, Bakker, van Doornen, & Schaufeli, 2006), including engagement and burnout. Neuroticism may be related to employee burnout and factors, such as stress sensitivity. Future research should ascertain whether dispositional factors influence an individual’s perception of team–member exchange and work–family enrichment.

In addition, this research has not identified particular coping or communicative styles that may reduce distress or build engagement within the occupation under study. Therefore, future research should examine differences in effective coping strategies between veterinary nurses in relation to the factors of the JD-R model.

7.2. Implications for practice

The findings have established that veterinary nurses may utilise their job resources in demanding situations to counteract the effects of workplace strain that may manifest as emotional exhaustion and cynicism. Inadequate job resources in conjunction with an

abundance of job demands could increase the rate of exhaustion and cynicism and lead to intentions to quit.

This research suggests that job resources such as predictability and quality team-member exchanges could reduce the effects of demands and emotional exhaustion. In veterinary clinics, job demands cannot be controlled as much of a veterinary nurse's work is based around emergency care (Baran et al., 2009; Frommer & Arluke, 1999). For instance, veterinary nurses' exposure to emotional demands such as the euthanasia of a well-loved and familiar pet of an established client may occur at random, and the frequency of this type of demand cannot be determined (Baran et al., 2009). Therefore, the provision of resources, both social and tangible, should be made to help buffer the effects of such demands on veterinary nurses. Baran et al. (2009) suggest that after exposure to an emotional demand such as euthanasia it is common for the animal carer to proceed into the next consultation without discussion or a chance to debrief.

Accordingly, high-demand consultations could be extended to include a time period for the veterinary nurse to gather their thoughts and discuss the event with their peers. The provision of such resources may reduce the effects of job demands that may potentially lead to emotional exhaustion (Bakker, Le Blanc, et al., 2005; Hatfield et al., 1994). However, this research has not ascertained the specific type of exchange needed to be most effective in reducing the effects, and therefore more research is needed to identify the most beneficial type of exchange between veterinary nurses for reducing the effect of workplace strain.

Individuals who have adequate job resources are less likely to leave their jobs and therefore it could be beneficial for the profession to have in place rigorous coping and communication training in both tertiary education and the workplace. This training could highlight specific types of demands (emotional, cognitive and quantitative) that may cause

distress and encourage the individual to ask for help, to communicate their concerns, and to take time after distressing instances to reduce their distress.

7.3. Limitations

The research sample for this study was overwhelmingly female and included just one occupational group; as a result generalisability was not established across gender or occupation. Therefore, these findings are restricted to the workplace wellbeing of New Zealand veterinary nurses. Further research is needed to ascertain whether the JD-Rs can translate into other occupations.

Another limitation of this research was the method of data collection. Self-report questionnaires may be subjected to common method variance (CMV) and response bias (Byrne, 2010; Hair et al., 2009; Jöreskog, 1971). Though CMV was not found to be evident in the data analysis (Podsakoff et al., 2003b), there is no way to fully rule out its potential impact on the data.

7.4. Conclusion

The aim of this research was to investigate work-related wellbeing among New Zealand veterinary nurses using a social version of the JD-R model (JDRs). An attempted was made to ascertain whether work and family domains interacted and contributed to positive workplace behaviour, and whether high-quality team-member exchanges interacted with job resources to reduce the effects of job demands and reports of emotional exhaustion and turnover intention.

A large proportion of the sample of participants displayed high quality relationships among team-members, and most also saw their work as being of benefit to their family life and reported feeling engaged with their work. However, the relatively high levels of

reported job demands is of concern, as high demands may lead to emotional exhaustion over time. Overall, the research provide a guide towards healthier workplace practices such as identifying the importance of work–family balance, and building solid team member relationships.

In closing, veterinary nursing is an important profession that and has rarely been studied. Therefore more research is needed to examine the most important demands and resources within the profession. This study has identified some key contributors to veterinary nurse wellbeing. Social exchanges and the family domain may impact upon an individual's workplace wellbeing. As such social resources may be perceived to increase job resources and enrich family life and reduce the effects of job demands and burnout, which in turn may lead to few veterinary nurses leaving the profession.

Improving coping and communication strategies may encourage positive workplace behaviours and occupational commitment and reduce burnout and intentions to quit. Identifying job demands and building resources should be a focus of professional training and be reinforced in the workplace.

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Appendix A: Low Risk Notification Approval Letter



MASSEY UNIVERSITY ALBANY

16 October 2013

Stafford Kimber
36 Merton Street
Hobsonville
Auckland 0618

Dear stafford

Re: The veterinarian nurse/technician wellbeing survey 2013

Thank you for your Low Risk Notification which was received on 1 October 2013.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research."

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director (Research Ethics), telephone 06 350 5249, e-mail humanethics@massey.ac.nz."

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

John G O'Neill (Professor)
**Chair, Human Ethics Chairs' Committee and
Director (Research Ethics)**

cc Dr D Gardner
School of Psychology
Albany campus

A/Prof M Morgan HOS
School of Psychology
Turitea campus

Massey University Human Ethics Committee
Accredited by the Health Research Council

Appendix B: Copy of NZ Veterinary Nurse/Technician Wellbeing Survey 2013

A. Demographic control variables – 5 items

1. Gender
2. How long have you worked as a veterinary nurse/ technician?
3. What is your current qualification?
 - No qualification in veterinary nursing
 - Certificate in veterinary nursing
 - Diploma in veterinary nursing
 - Bachelor degree in veterinary technology
 - Other
4. Contract type
 - Full-time
 - Part-time
 - Locum
5. Time in current role
6. What is your current role?
 - Junior nurse
 - Senior nurse
 - Supervising roles
 - Practice management
7. Average hours worked per week

B. Demands:

Quantitative demand- 4 items

Scale options:

- **(5) Always**
 - **(4) Often**
 - **(3) Sometimes**
 - **(2) Seldom**
 - **(1) Never/hardly ever**
1. Is your workload unevenly distributed so it piles up?
 2. How often do you not have time to complete all your work tasks?
 3. Do you get behind with your work?

Emotional demands - 4 items

4. Does your work put you in emotionally disturbing situations?
 - **(5) Always**
 - **(4) Often**

- (3) Sometimes
 - (2) Seldom
 - (1) Never/hardly ever
5. Do you have to relate to other people's personal problems as part of your work?
 - (5) Always
 - (4) Often
 - (3) Sometimes
 - (2) Seldom
 - (1) Never/hardly ever
 6. Is your work emotionally demanding?
 - (5) To a very large extent
 - (4) To a large extent
 - (3) Somewhat
 - (2) To a small extent
 - (1) To a very small extent
 7. Do you get emotionally involved in your work?
 - (5) To a very large extent
 - (4) To a large extent
 - (3) Somewhat
 - (2) To a small extent
 - (1) To a very small extent

Cognitive demands - 4 items

Scale options:

- (5) Always
 - (4) Often
 - (3) Sometimes
 - (2) Seldom
 - (1) Never/hardly ever
8. Do you have to keep your eyes on lots of things while you work?
 9. Does your work require that you remember a lot of things?
 10. Does your work demand that you are good at coming up with new ideas?
 11. Does your work require you to make difficult decisions?

C. Resources:

Scale options:

- (5) To a very large extent
- (4) To a large extent
- (3) Somewhat
- (2) To a small extent
- (1) To a very small extent

Possibilities for development - 4 items

1. Does your work require you to take the initiative?
2. Do you have the opportunity of learning new things through your work?

3. Can you use your skills or expertise in your work?
4. Does your work give you the opportunity to develop your skills?

Predictability – 2 items

5. At your place of work, are you informed well in advance concerning for example important decisions that may affect your work?
6. Do you receive all the information you need in order to do your work well?

Recognition – 3 items

7. Is your work recognised and appreciated by the management?
8. Do you feel that management respects you?
9. Are you treated fairly at your workplace?

D. Work-to-family Enrichment– 9 items

Scale options:

Strongly disagree Strongly agree

1-----2-----3-----4-----5

1. My work helps me to understand different viewpoints and this helps me be a better family member
2. My work helps me to gain knowledge and this helps me be a better family member
3. My work helps me acquire skills and this helps me be a better family member
4. My work puts me in a good mood and this helps me be a better family member
5. My work makes me feel happy and this helps me be a better family member
6. My work makes me cheerful and this helps me be a better family member
7. My work helps me feel personally fulfilled and this helps me be a better family member
8. My work provides me with a sense of accomplishment and this helps me be a better family member
9. My work provides me with a sense of success and this helps me be a better family member

E. Family-to-Work Enrichment– 9 items

1. My family helps me to gain knowledge and this helps me be a better worker
2. My family helps me acquire skills and this helps me be a better worker
3. My family helps me expand my knowledge of new things and this helps me be a better worker
4. My family puts me in a good mood and this helps me be a better worker
5. My family makes me feel happy and this helps me be a better worker
6. My family makes me cheerful and this helps me be a better worker

7. My family requires me to avoid wasting time at work and this helps me be a better worker
8. My family encourages me to use my work time in a focused manner and this helps me be a better worker
9. My family causes me to be more focused at work and this helps me be a better worker

F. Team member exchange (TMX) scale– 10 items

1. How often do you make suggestions about better work methods to other team members?
Never *Always*
 1----- 2----- 3----- 4----- 5
2. Do other members of your team usually let you know when they have done something that affects your job?
Never *Always*
 1----- 2----- 3----- 4----- 5
3. How often do you let other team members know when they have done something that affects your job?
Never *Always*
 1----- 2----- 3----- 4----- 5
4. How well do other members of your team recognise your potential?
Not well *Very well*
 1----- 2----- 3----- 4----- 5
- How well do other members of your team understand your problems and needs?
Not well *Very well*
 1----- 2----- 3----- 4----- 5
5. How flexible are you about switching job responsibilities to make things easier for other team members?
Not flexible *Very flexible*
 1----- 2----- 3----- 4----- 5
6. In busy situations, how often do other team members ask you to help out?
Never *Always*
 1----- 2----- 3----- 4----- 5
7. In busy situations, how often do you volunteer your efforts to help others on your team?
Never *Always*
 1----- 2----- 3----- 4----- 5
8. How willing are you to help finish work that had been assigned to others?
Not willing *Very willing*

- 1----- 2----- 3----- 4----- 5
9. How willing are other members of your team to help finish work that was assigned to you?
- Not willing Very willing
- 1----- 2----- 3----- 4----- 5

G. Workplace Engagement – 9 items

Scale options:

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

Vigour (VI) - 3 items

1. At my work, I feel bursting with energy
2. At my job, I feel strong and vigorous
3. When I get up in the morning, I feel like going to work

Dedication (DE) - 3 items

4. I am enthusiastic about my job
5. My job inspires me
6. I feel happy when I am working intensely

Absorption (AB) - 3 items

7. I am proud of the work that I do
8. I am immersed in my work
9. I get carried away when I am working

H. Burnout

Scale options:

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

Emotional exhaustion – 9 items

1. I feel emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel fatigued when I get up in the morning and have to face another day on the job.
4. Working with people all day is really a strain for me.
5. I feel burned out from my work.
6. I feel frustrated by my job.
7. I feel I'm working too hard on my job.
8. Working with people directly puts too much stress on me.
9. I feel like I'm at the end of my rope.

Cynicism – 5 items

1. I feel I treat some clients as if they were impersonal 'objects'.
2. I've become more callous towards people since I took this job.
3. I worry that this job is hardening me emotionally.
4. I don't really care what happens to some clients.
5. I feel clients blame me for some of their problems.

I. Turnover intention, turnover intention scale – 3 items

Scale options:

- **(1)** Never
 - **(2)** Rarely
 - **(3)** Sometimes
 - **(4)** Often
 - **(5)** Very often
 - **(6)** All the time
1. Thoughts about quitting this job cross my mind
 2. I plan to look for a new job within the next 12 months
 3. How likely is it that, over the next year, you will actively look for a new job outside this organisation?

Scale options:

Very	Very
unlikely	likely
1-----	2-----3-----4-----5-----6