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Published

2017

Journal Title

Australian Journal of Psychology

Version

Accepted Manuscript (AM)

DOI

[10.1111/ajpy.12119](https://doi.org/10.1111/ajpy.12119)

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**Veterinary nurses' psychological well-being: The impact of patient suffering and death**

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**Word Count:** 6,000 words (excluding Key Points)

### Abstract

**Objective:** Preliminary evidence suggests veterinary nurses are an at-risk population for high levels of occupational stress. This study sought to advance knowledge of occupational stress in this under-researched professional group by applying the Job Demands-Resources model to assess predictors of psychological strain, work-related burnout, and work engagement.

**Method:** Research participants consisted of 144 veterinary nurses employed within one Australian state (response rate of 41%). Data was obtained via an anonymous self-report questionnaire. All research participation was voluntary.

**Results:** Analyses indicated the mean level of work-related burnout in this sample exceeded that of normative samples in human healthcare professions. We also found that although both generic and occupation-specific job demands were significantly associated with levels of psychological strain and burnout, generic job demands accounted for a greater proportion of variance. Only direct effects were produced for the association of both workplace social support and job control with work engagement, no evidence was found for the moderating effects of these two job resources.

**Conclusions:** The findings both validate and challenge the tenets of the Job Demands-Resources explanation of occupation stress. Theoretical and applied implications are discussed.

**Key Words:** Job Demands-Resources; occupational stress; psychological strain; veterinary nurses; work engagement; work-related burnout

## **Key Points**

### **What is already known about this topic:**

- Preliminary evidence suggests that veterinary nurses are an at-risk population for high levels of occupational stress.
- Emerging research directly comparing generic and specific job demands on stress-related outcomes has demonstrated that specific demands explain a greater proportion of variance.
- Previous research suggests that euthanasia duties are a critical occupation-specific stressor impacting on the psychological wellbeing of these personnel.

### **Contributions of this research:**

- Findings indicate that high levels of psychological burnout are prevalent throughout this profession.
- Both generic and occupation-specific job demands are important for stress-related outcomes, but generic job demands accounted for a greater proportion of variance.
- The lack of association between euthanasia of animals with a good prognosis and stress-related outcomes suggest that it may be the overall frequency of euthanasia that is most salient aspect of this work stressor, rather than the context in which it occurs.

## **“Killing me softly”: The impact of the job demand of euthanasia**

### **Introduction**

Occupational stress research rarely includes assessments of work demands centered on dealing with death, despite this being an extreme stressor and for some occupations a common experience. Although the deleterious effects of routine exposure to the death of patients on the psychological wellbeing of human healthcare professionals has been recognised (Halbesleben, 2008), for veterinary healthcare professionals the impact of such exposure – including the unique responsibility of euthanizing patients for whom they have been providing care – is less well established. Research involving the wider animal welfare workforce demonstrates significant relationships between euthanasia duties and a range of stress-related outcomes, including high levels of job dissatisfaction, turnover, work-to-family conflict, somatic complaints, substance use, and post-traumatic stress symptomatology (e.g., Reeve, Rogelberg, Spitzmuller, & DiGiacomo, 2005; Rogelberg et al., 2007). Such findings highlight the need for assessments of occupational stress within animal caregiving professionals to take into account the impact of these unique demands specific to this job context, in order to produce improved estimates of their levels of psychological health (e.g., Brough & Biggs, 2015).

Recent assessments of occupational health in veterinarians have consistently demonstrated that adverse outcomes such as high job strain, burnout, depression, and suicide are widespread throughout this profession, and are largely attributed to a combination of both generic and specific occupational stressors (Tran, Crane & Phillips, 2014). Although many of the unique aspects of animal caregiving work encountered by veterinarians are also experienced by veterinary nurses, the latter remain a markedly

under-researched professional group with only one known study to date having examined occupational stress in these personnel using an established theoretical explanation of stress (Black, Winefield, & Chur-Hansen, 2011). Findings indicated that similar to veterinarians, veterinary nurses are a professional group with a high susceptibility to work-related stress and its commonly associated outcomes.

Specifically, Black et al. (2011) reported that in a sample of 127 South Australian veterinary nurses one third of respondents were identified as being at risk of experiencing high job strain as a result of high job demand-low job control work conditions. It is also pertinent to note that reported levels of workload and time pressure were both found to be higher in this sample than in normative samples of general practitioners, nurses, and social workers (Karasek, Brisson, Kawakami, Houtman, Bongers, & Amick, 1998). Furthermore, in assessing the specific job demand of animal euthanasia, Black et al. (2011) identified this was significantly associated with psychological burnout.

In light of this evidence, the paucity of investigations addressing occupational stress in veterinary nurses is concerning and further research examining the impact of work characteristics upon this high-risk occupational group is required. Although euthanasia duties appear to be a critical stressor impacting on the well-being of these workers, the context in which euthanasia is conducted has yet to be fully assessed. For example, the psychological impact of performing euthanasia to relieve suffering in *sick or injured* animals is likely to differ as compared to performing euthanasia on *healthy or treatable* animals for reasons of human convenience. It has been established that euthanasia demands occurring in the latter context are usually opposed to workers' vocational motivations (i.e., of working within the veterinary field in order to care for

animals), and consequently produces a type of ‘moral stress’ commonly experienced as psychological strain (Crane, Bayl-Smith, & Cartmill, 2013; Tran et al., 2014).

Anecdotal reports also suggest that veterinary nurses’ continuous exposure to the suffering of animals as a result of ill-health, injury, advancing age, trauma, abuse, or neglect contributes to significant emotional distress experienced by these personnel (e.g., Ayl, 2013).

It is an unfortunate limitation in the work stress literature that assessments of occupation-specific job demands are frequently overlooked. The few studies which have directly compared the impact of both generic and occupation-specific job demands have demonstrated that specific job demands tend to explain a greater proportion of variance in the prediction of stress-related outcomes and therefore, provide an improved assessment of employee health (Brough, 2004; Brough & Biggs, 2010; 2014; Brough, Biggs, & Pickering, 2007). By assessing both occupation-specific and generic work demands encountered by veterinary nurses, the current research responds to recommendations that investigations of occupational stress consider multiple types of job demand in order to provide a more comprehensive explanation of how the psychosocial work environment impacts on employee health and job performance (Brough & Biggs, 2015; Cooper, Dewe, & O’Driscoll, 2001). The current research compares both generic job demands and specific job demands inherent within veterinary nursing, using the theoretical framework of the Job Demands-Resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

### **The Job Demands-Resources Model**

The JD-R model divides work characteristics into job demands (tasks that require sustained physical and/or psychological effort and are therefore associated with

corresponding costs to an individual) and job resources (factors that help an employee to achieve work goals, reduce job demands and their associated costs, and/or stimulate personal growth and development; Demerouti et al., 2001). The model suggests that irrespective of occupational context, employee well-being is influenced by job demands and job resources via two processes. A *strain process* occurs when prolonged or excessive demands exceed an individual's adaptive capability, leading to impaired health and performance outcomes such as burnout (Demerouti et al., 2001). Although the impact of high job demands may be exacerbated by a lack of resources and contribute to disengagement, a converse *motivational process* occurs when high availability of resources buffers against the impact of job demands and fosters work engagement. Thus, while job demands are considered key predictors of adverse stress outcomes, resources such as job control and social support are regarded as highly influential variables for employee well-being and engagement via both direct and moderating mechanisms.

Empirical support for these dual processes of the JD-R model has been described (e.g., Bakker & Demerouti, 2007), as well as the moderating effects of resources on the relationship between job demands and stress outcomes (e.g., Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). However, testing of the full JD-R framework by researchers other than the model's authors remain scarce (Brough et al., 2013) and further independent applications of the complete model are required for theory validation.

### **The Current Research**

The current study aims to provide a multifaceted assessment of both the negative and positive impact of veterinary nurses' work experiences. Specifically, this research



assesses the associations between generic job demands (workload), occupation-specific job demands (exposure to patient suffering and death, and euthanasia involvement), and two job resources (job control and workplace social support) upon levels of psychological strain, work-related burnout, and work engagement. Based on the theoretical tenets of the JD-R model, and in view of emerging evidence indicating that occupation-specific demands are better able to account for adverse stress outcomes as compared to generic demands, three hypotheses are proposed:

**Hypothesis 1:** Both generic job demands and occupation-specific job demands will be positively associated with psychological strain and work-related burnout.

**Hypothesis 2:** The associations between occupation-specific job demands and both psychological strain and work-related burnout will be stronger in comparison to the associations between generic job demands and these two dependent variables.

**Hypothesis 3:** Job control and workplace social support will each moderate the relationship between job demands and stress outcomes, such that increased resources will reduce the associations between job demands and both psychological strain and work-related burnout, and increase the associations with work engagement.

## Method

### Procedure and Sample

The study adopted a cross-sectional research design involving an anonymous self-report survey. A total of 350 anonymous self-report postal questionnaires were distributed to veterinary practices within [Australian state] who indicated a willingness to participate in this research and  $N = 144$  completed questionnaires were returned, constituting a response rate of 41%. The majority of the 144 veterinary nurses who participated in this research were female ( $n = 141$ ; 98%), aged between 18 to 63 years

( $M = 30.47$ ,  $SD = 9.93$ ), and worked in general veterinary practices ( $n = 124$ ; 86%).

Most of the respondents were employed full-time ( $n = 83$ ; 58%) and had a vocational certificate or diploma ( $n = 104$ ; 72%). Job tenure ranged from six months to 30 years ( $M = 7.88$  years,  $SD = 6.36$ ).

## Measures

**Generic work demands.** Boyar, Carr, Mosley, and Carson's (2007) five-item measure of work demands was used to assess participants' perceptions of the level and intensity of their work responsibilities. A sample item was "My job requires all of my attention". Participants indicated their agreement with each item on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). An alpha coefficient of .89 was obtained.

**Occupation-specific job demands.** Given that a measure of work demands specific to this profession has yet to be established, this research adapted a seven-item subscale from the Nursing Stress Scale (NSS; Gray-Toft & Anderson, 1981) which is a widely used measure in occupational stress studies of nurses working in human healthcare, in order to assess participants perceived stressfulness of exposure to the suffering and death of animal patients. Items were revised to correspond with the veterinary context. For example, the term "physician" was replaced with the word "veterinarian". Participants indicated on a 4-point Likert scale, ranging from 0 (*never*) to 3 (*very frequently*) how often they experienced each item to be stressful. A sample item was "Watching a patient suffer". Content validity of the adapted measure was verified by three qualified veterinary nurses. An alpha coefficient of .79 was obtained.

Two items were used to establish the frequency and context of participants' involvement in performing euthanasia. Using a 5-point scale ranging from 1 (*never*) to 5

(*very frequently*) participants indicated how often during a normal working week they performed or assisted in the euthanasia of: (a) animals with a poor prognosis (defined as elderly, sick or injured animals for whom treatment is unlikely to be effective), and (b) animals with a good prognosis (defined as healthy animals or animals for whom treatment is likely to be effective). The correlation between these two items was statistically significant at the .001 level ( $r = .37$ ).

**Job control.** Wall, Jackson, and Mullarkey's (1995) 10-item job control measure was included in this research. A sample item was "Do you set your own pace of work?" Participants indicated the extent to which each item applied to them using a 5-point response scale ranging from 1 (*not at all*) to 5 (*a great deal*). An alpha coefficient of .90 was obtained.

**Workplace social support.** O'Driscoll, Brough, and Kalliath's (2004) eight-item measure of workplace social support was also included. Using a six-point frequency scale from 1 (*never*) to 6 (*all the time*) respondents indicated how often over the previous three months they had received four different types of support from their work supervisors and colleagues: "helpful information or advice", "sympathetic understanding and concern", "clear and helpful feedback", and "practical assistance". Cronbach's alpha coefficient was .93.

**Work-related burnout.** The seven-item work-related subscale of the Copenhagen Burnout Inventory (CBI; Kristensen, Borritz, Villadsen, & Christensen, 2005) was included in the survey. Participants rated how often/to what extent each item reflected their experiences upon a five-point Likert scale ranging from 1 (*never/to a very low degree*) to 5 (*always/to a very high degree*). A sample item was "Is your work emotionally exhausting?" An alpha of .90 was obtained. To enable occupational

comparisons with normative data reported by the CBI developers, scale labels were re-coded to the original format labels of 100 (*always/to a high degree*), 75, 50, 25, and 0 (*never/to a very low degree*) during preliminary analysis.

**Psychological strain.** The 12-item General Health Questionnaire (GHQ-12; Goldberg, 1972) was employed to assess levels of psychological strain. An example item was “Been feeling unhappy and depressed.” Participants indicated on a four-point scale the extent to which each item applied to them in the context of the past few weeks, with responses ranging from “better than usual” to “much less than usual”. High scores indicated high levels of strain. An example item was “Been feeling unhappy and depressed”. Cronbach’s alpha coefficient was .92.

**Work engagement.** The 17-item Utrecht Work Engagement Scale (Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002) was included as a composite measure of work engagement. Using a 7-point frequency rating scale ranging from 0 (*never*) to 6 (*always*), participants indicated how often each item was relevant for them. A sample item was “I find the work that I do full of meaning and purpose”. Cronbach’s alpha coefficient was .91.

## Results

### Occupation-Specific Characteristics

In the absence of an established measure of work demands specific to this profession it is of interest to compare the mean scores of items from the adapted NSS subscale to determine which job demands are most frequently experienced by the respondents. Analysis of itemised results revealed the three most frequently occurring issues respondents perceived as stressful to be “the death of a patient whom you have a particular affection for” ( $M = 1.81, SD = .79$ ), followed by “watching a patient suffer”

( $M = 1.64, SD = .87$ ) and “the death of a patient” ( $M = 1.63, SD = .73$ ). With regard to euthanasia, frequency analysis revealed that 99% of the sample routinely participated in the euthanasia of animals with a poor prognosis ( $M = 3.74, SD = .80$ ), while 68% routinely participated in the euthanasia of animals with a good prognosis ( $M = 2.06, SD = .99$ ).

### **Occupational Comparisons of Work-Related Burnout**

An important finding pertinent to the present research concerns the proportion of respondents reporting a high degree of work-related burnout. The mean level of work-related burnout in the current sample ( $M = 49.48, SD = 20.88$ ) was higher in comparison with normative samples of human service professionals, including hospital doctors, nurses, midwives and social workers ( $M = 33.0, SD = 17$ ; Kristensen et al. 2005). Based on Kristensen et al.’s (2005) criteria over half of the respondents in the current study ( $n = 76$ ; 53%) reported a high degree of work-related burnout.

### **Correlations**

The means, standard deviations, and bivariate correlations for the research variables are displayed in Table 1. Generic demands and the occupation-specific demands of exposure to the suffering and death of patients, and euthanasia in the context of a poor prognosis were each significantly positively correlated with psychological strain and work-related burnout. Job control and workplace social support were both found to exhibit significant associations with work engagement, psychological strain and work-related burnout.

INSERT TABLE 1 ABOUT HERE

### **Moderated Hierarchical Multiple Regression Results**

Three independent hierarchical regressions were performed to examine the direct contribution of job demands and job resources to the variance in psychological strain, work-related burnout, and work engagement. In addition, testing of the hypothesised moderating effects of job resources was conducted through the inclusion of four interaction terms generated by multiplication of the standardised scores for the respective predictor and moderator variables. In all three equations generic job demands were tested at step one, and exposure to patient suffering and death tested at step two. At step three, job control and workplace social support were entered to test the main effects of both resources. In the final step, the interactions between both types of job demands and both job resources were tested. Table 2 summaries the results of these three regression equations.

At step one generic job demands were significantly associated with all three criterion variables. At step two exposure to patient suffering and death accounted for a small but significant increase in explained variance in psychological strain and work-related burnout, but failed to produce significant main effects with the three criterion variables. At step three job control produced significant main effects with work-related burnout and work engagement, while workplace social support produced significant main effects for all three criterion variables. The inclusion of both resources increased the explained variance in all three equations. At step four, only two of the twelve interaction terms demonstrated significant unique variance (with only one of these occurring in the hypothesised direction). However, the accompanying  $\Delta R^2$  statistics for this step were not significant for any of the outcome variables. The first interaction demonstrated that generic demands were moderated by job control to increase levels of work engagement; the second interaction demonstrated that specific demands of

exposure to patient suffering and death were moderated by workplace social support to increase levels of work-related burnout. Overall, the regression equations accounted for 30.8% of the variance in psychological strain,  $R^2 = 0.31$ ,  $F(8, 121) = 6.75$ ,  $p = <.001$ , 95% CI [.19, .43], 46.7% of the variance in work-related burnout,  $R^2 = 0.47$ ,  $F(8, 120) = 13.13$ ,  $p = <.001$ , 95% CI [.36, .58], and 24.5% of the variance in work engagement,  $R^2 = 0.25$ ,  $F(8, 119) = 4.84$ ,  $p = <.001$ , 95% CI [.13, .37].

INSERT TABLE 2 ABOUT HERE

### **Discussion**

This study aimed to extend the limited literature concerning occupational stress in veterinary nurses by applying the JD-R model in order to: (a) compare the direct associations between generic job demands and occupation-specific job demands in the prediction of psychological strain, work-related burnout and work engagement; and (b) examine the moderating effects of job control and workplace social support on these outcome variables. Full support for the strain process of the JD-R model was found with generic and occupation-specific demands both exhibiting significant positive associations with psychological strain and work-related burnout (Hypothesis 1). Contrary to expectations, the occupation-specific demands assessed in this research explained a lesser proportion of variance in the prediction of psychological strain and work-related burnout in comparison to generic demands (Hypothesis 2). Limited support for the moderating effects of job control and social support as theorised in the motivational process of the JD-R framework was evident, as only one of the 12 interactions tested (job demands x job control) demonstrated significance in the direction predicted (Hypothesis 3). Interestingly, a second significant interaction emerged contrary to expectations (exposure to patient suffering and death x workplace

social support). Collectively these findings both validate and challenge the theoretical tenets of the JD-R model.

### **Impact of Job Demands**

The strain process of the JD-R model, which posits that job demands are critical predictors of adverse stress outcomes was clearly supported by the current research. Both generic and occupation-specific demands showed positive associations with outcomes of psychological strain and work-related burnout, accounting for more (shared) variance as compared to job resources. These results align with other significant cross-sectional findings which validate the strain process of the JD-R model (e.g., Bakker & Demerouti, 2007). These findings also highlight the need for practice managers to be alert to signs of burnout and psychological distress in their nursing staff, to ensure timely referral to employee assistance services to help workers more effectively manage the demands of their work.

**Generic demands.** Interestingly, this research also revealed a significant positive relationship between generic demands and work engagement. Van den Broeck, De Cuyper, De Witte, and Vansteenkiste (2010) noted that this pattern of results has been found in a number of studies, giving rise to growing consensus among researchers that job demands may be categorised into two qualitatively distinct types: *job hindrances* which impede optimal functioning and drain employees' energy; and *job challenges* which promote psychological need satisfaction and stimulate goal achievement. As job challenges also contribute to energy depletion, Van den Broeck and colleagues argue that demands of this sort may contribute to both well-being and stress outcomes simultaneously. The current finding supports this premise, and suggests



that differentiating between job hindrances and job challenges in the JD-R model may be beneficial for enhancing its theoretical and practical value.

**Occupation-specific demands.** Although exposure to the suffering and death of patients was found to account for a significant increase in explained variance in psychological strain and work-related burnout, this job demand explained a lesser proportion of unique variance in comparison to generic demands. Interestingly, this finding differs from results reported in the few studies which have directly compared generic and occupation-specific demands in other professional groups, wherein occupation-specific demands have demonstrated a better ability to account for adverse stress outcomes (Brough, 2004; Brough et al., 2007; Brough & Biggs, 2015).

It is plausible that this result may have been influenced by other demands inherent in veterinary nursing (e.g., conflict with veterinarians, difficult client interactions; Van Soest & Fritschi, 2004) which may be more salient occupational stressors for these personnel. As such, replication of this comparison using a more objective and comprehensive measure of occupation-specific demands is recommended.

The finding that euthanasia in the context of animals with a poor prognosis correlated positively with both psychological strain and work-related burnout validates and extends upon previous research reported by Black et al. (2011). The finding that these relationships were not significant in relation to the euthanasia of healthy or treatable animals was unexpected, given long-held speculation that performing euthanasia in this context imposes a unique and distressing form of 'moral stress' upon veterinary workers (Crane et al., 2013). It may be that euthanasia of sick and/or injured animals may evoke stronger negative effects on workers' psychological well-being due to the greater emotional labour demands imposed by this context (i.e., the need to

suppress one's own emotions whilst simultaneously attending to grief and/or guilt of bereaved owners; Morris, 2012).

### **Ability of Job Resources to Buffer Job Demands**

The motivational process of the JD-R model, which posits that availability of job resources which assist employees in performing their job reduces the associations between job demands and adverse stress-related outcomes, received limited support in the present study. This research found only two of the twelve job demands x job resources interactions tested to be statistically significant. Moreover, only one of these occurred in the direction predicted by the theoretical tenets of the JD-R model. Our results reflect other investigations of the JD-R model which also reported the difficulty of obtaining significant job demand x job resources interaction effects (e.g., Brough & Biggs, 2015; Brough et al., 2013), as well as the broader occupational stress literature (e.g., Taris, 2006).

One explanation for the present findings could relate to the nature of the variables tested. The *triple match principle* (TMP; de Jonge & Dormann, 2006) suggests that interactions are more likely to be significant if the demands, resources and outcomes assessed all address the same domain of functioning (i.e., physical, emotional, or cognitive). Empirical research has demonstrated the TMP approach increases the likelihood of obtaining significant interaction results (e.g., de Jonge, Van Vegchel, Shimazu, Schaufeli, & Dormann, 2010). One recommendation for future research within this field is the assessment of occupational stress in veterinary nurses via the application of the TMP theory.

Nevertheless, the present results provide some, albeit minimal, support for the moderating effect of job control as theorised in the JD-R model (Bakker & Demerouti,

2007), with results implying that veterinary nurses who perceive their general work level/intensity to be high are more likely to be engaged when they have a high level of autonomy. However, no evidence was found to show that job control moderates the relationship between job demands and either psychological strain or work-related burnout. These results add to the wealth of inconsistent findings regarding the buffering effect of control reported throughout the literature (e.g., Brough, O'Driscoll, Kalliath, Cooper, & Poelmans, 2009). Similarly, the current research failed to support the predicted moderating effects of social support as proposed in the JD-R model (Bakker & Demerouti, 2007). A significant interaction was observed however, indicating that in response to increased exposure to the suffering and death of patients, veterinary nurses with higher levels of social support experience higher, rather than lower, levels of work-related burnout – thus revealing a *reverse buffering* effect.

Although not the most prevalent effect of social support, it is interesting to note this seemingly counter-intuitive phenomenon has also been reported in studies of occupational stress involving professional groups uniquely exposed to pronounced suffering and/or death in the human arena, for example nurses and police officers (e.g., Brough, Brown, & Biggs, in press; Jenkins & Elliott, 2004). Given that social support can function as a problem-focused coping strategy in response to work-related events (Biggs, Brough, & Drummond, in press; Lazarus & Folkman, 1984), it seems intuitive that work-place communications focused on problems which are unable to be resolved in a manner congruent with veterinary nurses' work ideals (i.e., when an owner may be unable to pay for treatment, resulting in undue animal suffering) may indeed accentuate an employee's appraisal of their work as being stressful, thereby intensifying work-related burnout. This finding suggests that social support may play a more complex

moderating role than is proposed by the JD-R framework; specifically, its moderating function may depend upon both the nature of the job demands being assessed and the degree to which social support serves as a problem-focused or emotion-focused strategy for alleviating job demands.

### **Research Limitations and Future Directions**

Two key research limitations should be acknowledged: The use of a cross-sectional methodology from which causal inferences cannot be drawn, and the use of self-report measures which may give rise to issues of common method bias. Further research is recommended to consider alternative research designs, especially given the widespread calls for longitudinal assessments of occupational stress (e.g., Brough et al., 2009; Zapf, Frese, & Dormann, 1996). Furthermore, despite efforts to recruit participants from a variety of occupational settings, employees from general practices were overrepresented in this sample, thus limiting the generalizability of these results.

Given the high level of work-related burnout observed in this sample extending assessments of occupational stressors uniquely affecting veterinary nurses is an important avenue for future research, to enable the development of targeted psychological health interventions aimed at improving the occupational well-being of these at-risk personnel. Likewise, assessments of the types of coping strategies employed by veterinary nurses to manage the demands of their work would also be advantageous, as would an assessment of individual differences in personality and resilience which may act as protective or risk factors for adverse stress outcomes.

### **Conclusion**

In summary, this assessment of occupational stress experienced by veterinary nurses has made a number of important contributions. First, by advancing knowledge in

relation to pertinent factors influencing both positive and negative aspects of work well-being in a under-researched occupational group. Second, by responding to widespread calls for the adoption of a multifaceted approach in occupational stress investigations via the inclusion of both generic and occupation-specific job characteristics. Third, by responding to appeals for independent testing of the complete JD-R model, inclusive of both main and moderating effects. Findings indicate that high levels of burnout are prevalent throughout this profession, and that veterinary nurses' general work demands appear better able to account for stress outcomes as compared to their routine exposure to the suffering and death of animal patients. Additionally, the results highlight the importance of job control in promoting veterinary nurses' work engagement, and identify the potential for workplace social support to enhance levels of work-related well-being for veterinary nurses. These findings both support and challenge the tenets of the explanation of occupational stress proposed by JD-R model. Finally, the current findings also highlight important avenues for future research into job stress in the veterinary nursing profession.

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**Table 1.***Intercorrelations of the research variables (N = 144)*

Variables	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.
1. Generic job demands	4.07	.64								
2. Exposure to suffering and death of patients	1.47	.53	.32***							
3. Euthanasia (in the context of a poor prognosis)	3.74	.80	.15	.21*						
4. Euthanasia (in the context of a good prognosis)	2.06	.99	.09	.14	.37***					
5. Job control	3.28	.76	-.08	-.12	-.18*	-.09				
6. Workplace social support	4.22	1.10	-.26**	-.30***	-.25**	-.09	.36***			
7. Psychological strain	1.06	.52	.37***	.34***	.26**	.10	-.34***	-.50***		
8. Work-related burnout	2.98	.84	.53***	.34***	.20*	.14	-.35***	-.56***	.61***	
9. Work engagement	4.03	.75	.19*	.13	.06	.11	.23**	.26**	-.24**	-.29***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . All tests are two-tailed.

**Table 2.***Multiple Moderated Hierarchical Regression for Psychological Strain, Work-Related Burnout and Work Engagement*

Predictors	Psychological Strain		Work-Related Burnout		Work Engagement	
	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$
Step 1		.11***		.22***		.05*
Generic Job Demands	.23**		.41***		.19*	
Step 2		.04*		.03*		.01
Patient Death and Suffering	.16		.05		.17	
Step 3		.14***		.17***		.15***
Job Control	-.15		-.20**		.23**	
Social Support	-.31***		-.34***		.26**	
Step 4		.02		.04		.05
Generic Job Demands x Job Control	.11		-.08		.21*	
Generic Job Demands x Social Support	-.13		-.10		.04	
Patient Suffering and Death x Job Control	-.10		.02		-.02	
Patient Suffering and Death x Social Support	.05		.19*		-.04	
Total $R^2$		.31***		.47***		.25***

Note. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . Beta weights provided are those found in the final step of the analysis.