**Mental health of veterinary nurses and student veterinary nurses: A scoping review**

Running title: Mental health in veterinary nursing

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**Abstract  
  
Background:** Research has found veterinarians around the world to be at high risk of mental health problems, but far less research has examined veterinary nurses (VNs) and student veterinary nurses (SVNs). This scoping review aimed to map existing evidence on this topic, and identify knowledge gaps.

**Methods:** Literature searches of MEDLINE, PsycINFO, PubMed, Web of Science, and Google Scholar were conducted, and a structured screening and selection procedure applied. To be included, studies had to be peer-reviewed, report relevant results specific to VNs and/or SVNs, and provide descriptive statistics if using quantitative methods.

**Results:** Of 2,118 publications identified, only 13 journal articles met the inclusion criteria. The findings were summarised in five categories: *mental health and wellbeing; burnout; stress; compassion fatigue*; and *moral distress*. While the findings of five of the studies suggested that some VNs and SVNs experienced some form of poor mental health, these lacked generalisability or transferability for multiple reasons. There was also inconsistency and ambiguity in the interpretation of findings, and incompatible or oversimplified definitions of mental health problems.

**Conclusions:** More research is needed to address the gaps in existing evidence supporting our understanding of VN and SVN mental health. This should establish baseline measures, and include comparisons with other occupational and national populations.

**1. Introduction**

Research into mental health in veterinary professionals around the world has focused predominantly on veterinarians, and found that they are at high risk of stress, anxiety, depression, burnout, compassion fatigue, and suicidal ideation.1 Potential risk factors include heavy workloads, long working hours, poor work-life balance, unreasonable client expectations and demands, ethical and moral challenges, and the performance of euthanasia.1,2 Research using validated psychometric scales, in the United Kingdom (UK) and United States (US), also suggests that veterinary students experience poorer wellbeing and mental health than approximately age-matched general population groups3,4 or some other student groups.5,6 Far less research has focused on veterinary nurses (VNs) or student veterinary nurses (SVNs), despite their vital role in effective veterinary teamwork.7

Some anecdotal evidencee.g.8,9 suggests that VNs and SVNs experience a range of mental health problems, but it is unclear whether they differ in this from the general population. The Royal College of Veterinary Surgeons reported that its 2019 survey of 4,993 UK VNs10 found lower mean Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) scores, suggesting poorer wellbeing, in VNs than in the general population of England in 2016.11 However, the difference was not significance tested, it was not a contemporaneous comparison, and the scores were not sufficiently low to be indicative of depression.12 In another investigation of the effects of sustained bullying in the veterinary profession,13 390 VNs reported experiencing at least one form of bad behaviour or bullying, almost a third of whom related it to poor mental health in free-text responses. In a recent Mind Matters and VN Futures’ survey,14 completed by around 650 SVNs, recently qualified VNs, and clinical coaches, 96% agreed that bullying and incivility was a problem in the profession, 81% agreed that their work was stressful, and 75% thought the demands of work and studying affected their wellbeing.

To date, however, there are no comprehensive reviews of empirical studies assessing the mental health of VNs and SVNs, and therefore no clear evidence synthesis. This review addresses this gap, focusing on two research questions: i) *How prevalent are mental health problems in VNs and SVNs?* and ii) *What types of mental health problems do VNs and SVNs experience?* It conceptualises ‘mental health problems’ in a broad sense, including but not limited to clinically diagnosed mental health disorders or illnesses.

**2. Methods**

A scoping review was conducted in line with the framework proposed by Arksey and O’Malley15 and expanded by Levac et al.16 Scoping reviews are optimal for mapping existing evidence and identifying knowledge gaps, especially for topics that are emerging and underexplored, in contrast to systematic reviews that focus on more specific questions and critical appraisal.15,17 Where appropriate, the review was reported in line with the PRISMA extension for Scoping Reviews (PRISMA-ScR) checklist.18

**2.1. Information sources and search strategy**

Four electronic databases (MEDLINE, PsycINFO, PubMed, and Web of Science) were used, in addition to Google Scholar, which has been found to add value to literature searches.19,20 Searches were restricted to journal articles, but with no publication date limit. Search terms are provided in Table 1. The number of these was reduced for PubMed and Google Scholar, as initial searches generated 2,657,174 publications for PubMed and about 9,750 from Google Scholar. The terms ‘veterinary technician’, ‘veterinary technologist’, and ‘vet tech’ were not included. Although these roles in the US and Canada are similar to that of the VN in the UK, Ireland, and Australasia, the definitions and terminologies vary between states and countries. For clarity and consistency, this review focused only on VNs. The final search produced 229 publications from MEDLINE, 23 from PsycINFO, 110 from PubMed, 296 from Web of Science, and about 1,460 from Google Scholar. Manual searching of reference lists was conducted on all publications subjected to full-text screening.

**Table 1**

*Search terms used*

|  |  |
| --- | --- |
| Database or search engine | Search terms |
| MEDLINE, PsycINFO,  Web of Science (Advanced Search) | “veterinary nurse” OR “veterinary nursing” OR “veterinary professional” OR “veterinary practice” [first search box]  AND  “mental health” OR “wellbeing” OR “well-being" OR “mental disorder” OR “mental diagnosis” OR “mental illness” OR “mental problem” OR “mental condition” OR “psychological” OR “anxiety” OR “stress” OR “distress” OR “depression” OR “depressive” OR “burnout” OR “burned out” OR “compassion fatigue” OR “grief” OR “moral distress” OR “moral injury” OR “depersonalisation” OR “depersonalization” OR “emotional turmoil” OR “cynicism” OR “cynical” OR “fatigue” OR “insomnia” OR “exhaustion” OR “suicide” OR “suicidal” [second search box] |
| PubMed (Advanced Search) | “veterinary nurse” OR “veterinary nursing” OR “veterinary professional” OR “veterinary practice” [first search box]  AND  “mental health” OR “wellbeing” OR “well-being" OR “mental disorder” OR “mental diagnosis” OR “mental illness” OR “mental problem” OR “mental condition” OR “psychological” [second search box] |
| Google Scholar | “veterinary nurse” OR “veterinary nursing” AND “mental health” OR “wellbeing” OR “well-being" OR “mental disorder” OR “mental diagnosis” OR “mental illness” OR “mental problem” OR “mental condition” OR “psychological” |

**2.2. Inclusion criteria**

Inclusion criteria (Figure 1) were developed iteratively during screening and selection, in line with Levac et al.’s16 recommendations.

*[Figure 1]*

**2.3. Screening and selection procedure**

Titles of the 658 publications from the four databases and the first 950 publications from Google Scholar were screened in March 2023 by author King. The last 400 of these 950 were clearly irrelevant, so the remaining Google Scholar publications were excluded without screening. Of the 1,608 title-screened publications, 1,414 were removed because they were duplicates or did not meet inclusion criteria. A further 162 of the remaining 194 were removed after abstract screening because they did not meet inclusion criteria. Thirty-two publications were then subjected to full-text screening, and another 21 removed as they did not meet inclusion criteria (i) to (iii). A second search of all databases and Google Scholar was conducted in September 2023 by author King, and seven new publications were screened in the same way. Figure 2 outlines the full procedure. The final sample comprised 13 publications.

*[Figure 2]*

**3. Results**

**3.1. Overview of publications reviewed**

Of the 13 studies reviewed, the majority (n = 8) were published between 2020 and 2023, and all but one between 2016 and 2023 (supplementary Table 1). Seven studies recruited only VNs and/or SVNs, while six included other veterinary professional roles. Studies were located in Australasia (n = 8), the UK (n = 4), and Portugal (n = 1). Ten collected data relevant to this review from validated questionnaires, one of which also included an open-text question. Of the remainder, one used non-validated questions, one used semi-structured interviews, and one gathered open-text responses. The majority of studies had relatively small sample sizes; six analysed relevant data from < 100 VNs and/or SVNs, four from < 170, two from < 290, and one from 992. No study aimed directly to investigate whether VNs and/or SVNs experienced mental health problems in general. Instead, they focused on specific, pre-defined mental health problems, and/or explored potential causes, contexts, coping strategies, or outcomes.

The findings are summarised below in five categories: *mental health and wellbeing; burnout; stress; compassion fatigue*; and *moral distress*. In our synthesis, we have not included issues such as job dissatisfaction, disillusionment, or poor physical health; these were examined by some of the studies reviewed, but while they are associated with poor mental health, they are not mental health problems in themselves. We also excluded positive aspects of mental health, such as compassion satisfaction, as low levels do not necessarily denote poor mental health, and people can experience compassion satisfaction simultaneously with compassion fatigue.21 Relevant data are charted in supplementary Tables 2–6.

**3.2. Mental health and wellbeing**

Four studies examined the broad concepts of mental health and wellbeing, of which three included only VNs/SVNs (Table 2). Bedford and Anscombe-Skirrow22 focused primarily on disillusionment resulting from workplace bullying, but also reported how the open-text responses of 273 VNs and SVNs showed that bullying led to ‘impairment of self-confidence’, ‘hindrance to working ability through decreased concentration and enjoyment’, and ‘colleague and task avoidance’. ‘Mental health’ and ‘reduced self-worth’ were mentioned by around 54% and 69% of participants respectively, but it was unclear whether these were researcher-created categorisations or terms used by participants. No indication of question phrasing, analysis methods, evidence (e.g., participant quotes), or interpretations were provided. Deacon and Brough23 examined the psychological impact of exposure to patient death and client bereavement, using interview data from 26 VNs and former VNs who self-identified as having experienced occupational stress. Participants reported a range of distressing emotions, as well as high levels of ‘psychological strain’, and symptoms consistent with burnout and post-traumatic stress. However, there were some nuances; for some, compassionate euthanasia, for example, led not only to adverse emotions, but also to a strong sense of job satisfaction and increased personal resilience. Van Soest and Fritschi24 focused predominantly on physiological health hazards encountered by 147 VNs from Australia and Tasmania, but also assessed ‘job related affective well-being’ using the anxiety-contentment and depression-enthusiasm axes of Warr’s25 scale. The mean scores were similar (not significance tested) to those of Warr’s 847 female workers in comparably skilled jobs in the UK, suggesting that the VNs did not experience poorer mental health, but these two populations were 14 years apart and in different countries.

One study (Mair et al.26) examined the ‘mental wellbeing’ of 451 equine veterinary staff, including 20 equine VNs/SVNs, in the UK during the COVID-19 pandemic, using the WEMWBS. The VNs/SVNs had a lower mean score, suggesting poorer wellbeing, than the veterinary surgeons in the same study and the equine veterinary staff in a pre-pandemic 2019 survey,27 but these differences in means were not significance tested. The authors noted that while the low score could be interpreted as indicative of possible depression, it should be interpreted extremely cautiously due to the very low number of VNs and SVNs.

Overall, only Bedford and Anscombe-Skirrow’s22 study suggested that poor mental health was common in VNs/SVNs, but this was based on open-text responses about the effects of bullying, which could not reliably identify poor mental health or capture problems unrelated to bullying. In contrast, Van Soest and Fritschi’s24 study suggested that VNs did not experience lower wellbeing than other female workers, but the comparison with a non-contemporaneous population was unreliable. Deacon and Brough23 and Mair et al.26 presented results from very small, specific participant samples, so their findings, while interesting, cannot be generalised.

**3.3. Burnout**

Eight studies examined the specific concept of ‘burnout’ (Table 3). The World Health Organization defines this as an occupational phenomenon resulting from chronic workplace stress, characterised by three dimensions: ‘feelings of energy depletion or exhaustion; increased mental distance from one’s job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy’.28 There are many other conceptualisations, however; a systematic review of research on ‘occupational burnout’ found 88 unique definitions across 248 studies.29 The term is also often used in common parlance to describe commonplace experiences such as tiredness and loss of creativity, which is inconsistent with formal definitions.30 Figure 3 summarises conceptualisations of burnout used in the reviewed studies.

*[Figure 3]*

Five studies, two focusing solely on VNs/SVNs, used the Professional Quality of Life Scale (ProQOL; Stamm31,32). Beetham et al.33 reported a mean burnout score of 28.94, indicating moderate risk, in 166 VNs surveyed during the COVID-19 pandemic. Having expected a higher score, the authors suggested that the ProQOL may have failed to capture the true levels of stress in a pandemic, or that the VNs simply had good coping mechanisms and resilience. Despite almost identical results (mean score of 28.84 in 992 VNs), Smith34 concluded that as 92.8% of VNs were at moderate/high risk of burnout, working as a VN puts workers at high risk of suffering from it. This highlights the fact that ProQOL results can be interpreted in different ways.

Three studies used the ProQOL in mixed veterinary professional groups. Foote35 presented data from 370 veterinary professionals, including 169 VNs, and found similar mean burnout scores (not significance tested) for VNs, veterinary surgeons, patient care assistants, and receptionists. Findings were similar to those of Beetham et al.33 and Smith,34 and were interpreted as showing ‘moderate levels’ of burnout. Rohlf et al.36 found no significant difference between mean burnout scores for 93 VNs and 43 veterinarians. Scotney et al.37 reported a mean burnout score of 24.8 for all 229 participants, and although a smaller percentage of the 67 VNs (14.9%) than the 69 veterinarians (34.8%) fell in the high-risk burnout category, variation across groups was not significant. The authors gave two self-contradictory interpretations of their findings, observing in the abstract and results that ‘low burnout was reported by 78% of participants’, having combined the low and moderate scores, but stating in the discussion that VNs were an ‘at-risk group for burnout’, having combined the moderate and high scores.

Of the three studies using alternative scales, one focused solely on VNs. Deacon and Brough38 reported that 53% of the 144 VNs who had completed the work-related subscale of the Copenhagen Burnout Inventory39 had a high degree of burnout, referring to Kristensen et al.’s39 criteria, although these criteria are unclear, and variously interpreted elsewhere.e.g.40,41 The mean score in Deacon and Brough’s participants (49.48) was higher (not significance tested) than a mean of 33.0 for human healthcare professionals, including hospital doctors, nurses, midwives, and social workers.39 Deacon and Brough38 concluded that high levels of burnout were prevalent in VNs.

Ashton-James and McNeilage42 surveyed 249 veterinary professionals, including 77 VNs from a single specialist Australian veterinary hospital during the COVID-19 pandemic. A subset of 239 respondents completed the Maslach Burnout Inventory – General Survey (MBI-GS).43 The clinical staff, who accounted for 67.1% of participants and included VNs, were significantly more emotionally exhausted than non-clinical staff, but there were no significant differences on the cynicism or professional efficacy subscales. For the VNs, only their emotional exhaustion mean score exceeded the authors’ threshold for high levels. Varela and Correia44 analysed data from 229 veterinarians and 96 VNs who had completed a Portuguese adaptation of the Oldenburg Burnout Inventory (OLBI),45 for which higher scores on the 1–5 response scale indicated higher risk of burnout. The mean scores were identical between VNs and veterinarians for the exhaustion sub-scale, and similar for the disengagement sub-scale (not significance tested).

Overall, only Deacon and Brough’s38 study suggested that VNs experienced high levels of burnout, although it must be noted that their participants were employed in one Australian state, and the comparative norms were from a study conducted 12 years earlier in Denmark. In studies using the ProQOL, all mean scores for VNs fell on the lower side of the moderate-risk category, but were variously interpreted. Stamm32 does not define the ProQOL’s use of ‘moderate’, but does affirm that ‘moderate to low’ burnout is optimal, suggesting that only high scores are a cause for concern.

* 1. **Stress**

Five studies examined ‘stress’ (Table 4). Two investigated general forms of stress, focusing solely on VNs.Harvey and Cameron46 stated that just over two-thirds of their 288 VNs had responded to what appeared to be a single, bespoke item about self-defined stress, and while 49% reported feeling stressed ‘always’, ‘most of the time,’ or ‘half of the time’, 46% reported feeling stressed just ‘some of the time’, and 5% ‘never’. The authors interpreted this as showing a ‘high incidence of stress’, despite acknowledging that participants who did not experience stress may have ignored the question, and that an objective means of determining stress levels was required. Van Soest and Fritschi24 reported that in response to an open-text question about any occupational health issues not raised in the questionnaire, ‘many’ of their 147 VNs mentioned ‘mental stress’, but provided no further detail. In both studies, interpretation of the term ‘stress’ was open to subjective interpretation by participants.

Three studies used the ProQOL to investigatesecondary traumatic stress, described by Stamm32 as the effects of ‘work-related, secondary exposure to people who have experienced extremely or traumatically stressful events’. Symptoms may include fear, sleep difficulties, intrusive images, and an inability to separate one’s private life and one’s life as a helper. Smith34 reported a mean secondary traumatic stress score of 25.52, on the low side of the moderate category, in 992 VNs, but stated that 68.1% were at moderate/high risk of secondary traumatic stress, indicating a problematic level. Rohlf et al.36 found no significant difference between mean secondary traumatic stress scores for VNs and veterinarians, which were both in the moderate-risk category. Scotney et al.37 reported a mean secondary traumatic stress score of 24.6 for all participants, with no significant differences between occupational groups.

Overall, only Harvey and Cameron’s46 study provided some evidence of stress in VNs, but this was based on a single question in which stress was not defined, and which almost one-third of participants chose not to answer. Similarly, Van Soest and Fritschi24 did not define ‘mental stress’, and their reporting of results was ambiguous. The studies analysing secondary traumatic stress found, as with burnout, that all of the VNs’ mean scores fell at the lower end of the moderate-risk category.

**3.5. Compassion fatigue**

Three studies investigated ‘compassion fatigue’ (Table 5), characterized by Stamm32 as ‘the negative aspects of providing care to those who have experienced extreme or traumatic stressors’. Two of these (Beetham et al.33; Foote35) appeared to have used an older version of the ProQOL, which conceptualised compassion fatigue and secondary traumatic stress as synonymous and interchangeable31 (Figure 3). This differs from the current, fifth version of the ProQOL used by the three studies discussed in the above subsection,34,36,37 which instructs researchers to report separate sub-scores for burnout and secondary traumatic stress, as opposed to a combined compassion fatigue score.

Beetham et al.33 reported a mean compassion fatigue score of 26.74 in 166 VNs, which was at the lower end of the moderate-risk category. Foote35 did not report a mean score for their 169 VNs, but indicated that it was between the other groups’ mean scores of 24.67 and 28.00 (not significance tested), therefore mirroring Beetham et al.33 findings. Harvey and Cameron46 used a single, bespoke item about self-defined compassion fatigue to which approximately two-thirds of their 288 VNs responded, and while 33.5% reported experiencing it ‘always’, ‘most of the time’ or ‘half of the time’, 48.5% reported ‘some of the time’, and 18% reported ‘never’. This was interpreted by the authors as demonstrating a ‘high incidence’ of compassion fatigue; however, they again acknowledged that participants who did not experience compassion fatigue may have ignored the question, and that a more objective measure was required as the term could be misunderstood or variously interpreted. Overall, there was no clear indication from any study that VNs experienced concerning levels of compassion fatigue.

**3.6. Moral distress**

Two studies examined ‘moral distress’ (Table 6), described as distress occurring when a person is ‘unable to carry out what they believe to be the right course of action because of real or perceived constraints on that action’,47and considered to be prevalent among healthcare providers.48 Deacon and Brough’s23 VN interviewees ‘often’ struggled with moral distress due to conflict between needing to respect clients’ wishes and wanting to act in patients’ best interests, and were ‘fraught with emotional anguish’ when euthanasia duties conflicted with personal morals. These findings were not intended to be generalised to a wider VN/SVN population. Using the Measure of Moral Distress for Healthcare Professionals,48 Foote35 found that VNs appeared to experience moderate levels of moral distress, while veterinary surgeons, patient care assistants, and veterinary receptionists experienced low levels. This is consistent with human healthcare research suggesting that nurses’ moral distress is intensified by their lower position in the staff hierarchy and their lack of power in decision-making.49 However the mean moral distress score in the VNs in Foote’s35 study nevertheless fell on the lower side of the moderate category, and apparent differences across groups were not significance tested.

**4.1. Discussion**

Our first question was, ‘How prevalent are mental health problems in VNs and SVNs?’. While evidence from five of the 13 reviewed studies suggested that some VNs and SVNs experienced some form of poor mental health, these findings lacked generalisability or transferability, for reasons including small participant numbers and recruitment of participants from specific groups (e.g., equine staff; those who self-identified as having occupational stress), locations (e.g., one Australian state), and contexts (e.g., the COVID-19 pandemic). These limitations, along with the shortcomings of convenience sampling and the likelihood of self-selection bias, were acknowledged in some articles.

No study set out to estimate the prevalence of poor mental health in general, so findings relevant to this review were largely based on single validated scales, individual non-validated items, or open-text questions, which gave either very specific results (e.g., pertaining to one particular mental health problem) or ambiguous results (e.g., the proportion of participants mentioning ‘mental health’). The only qualitative study23 purposively recruited participants who self-identified as being affected by occupational stress, and focused on the effects of exposure to patient death and client bereavement. Participants in all studies may have experienced mental health problems that fell outside the scope of the research, and were therefore overlooked.

There was considerable inconsistency and ambiguity across studies in interpretation of findings (e.g., varying interpretation of similar ProQOL results), and even some self-contradictory interpretations. Where open-text questions or unvalidated items were used to explore issues such as mental health,22 mental stress,24 and stress and compassion fatigue,44 it was unclear whether or not these terms were introduced and defined by the researchers; if not, such terms are open to various interpretations. Stress is a particularly ambiguous concept, as although intense or chronic forms can negatively affect people’s mental health, minor, short-term forms are experienced by everyone, and can have positive effects such as improving motivation.50

Even validated scales may not fully capture participants’ experiences; this was noted by Beetham et al.,33 in relation to the use of the ProQOL during the COVID-19 pandemic. However, others have found the ProQOL questionable in regular circumstances. In a systematic meta-analysis of 27 international, peer-reviewed studies examining the ProQOL’s psychometric structure, Hotchkiss and Wong51 reported several factorial and internal structure issues, and called for the development of ‘more parsimonious, reliable, and valid measures’. The ProQOL manual itself advises users that their scores may not accurately reflect their professional quality of life, and that, unless persistent, high-risk burnout scores may simply indicate that they are having a bad day or need some time off. For those who fall in the high-risk secondary traumatic stress category, Stamm32 states, ‘While higher scores do not mean that you do have a problem, they are an indication that you may want to examine how you feel about your work and your work environment’. Several studies did not test the significance of apparent differences when comparing VN mean values of scales with those of other populations, meaning that any conclusions drawn may be incorrect.

Our second question was, ‘What types of mental health problems do VNs and/or SVNs experience?’. While several studies concluded that VNs had a high risk of experiencing burnout, stress or secondary traumatic stress, compassion fatigue, and/or moral distress, only one, Deacon and Brough,38 provided relatively clear evidence. None of the studies focusing on specific problems included SVNs, and none examined anxiety or depression, considered the most common mental disorders globally.52,53

Multiple, incompatible definitions of mental health problems presented another difficulty, and there were often inconsistencies within studies. Scotney et al.,37 for example, characterised burnout in the introduction and discussion as incorporating the three components of emotional exhaustion, depersonalisation, and low personal accomplishment, consistent with the Maslach Burnout Inventory.43 In their study, however, they used the ProQOL, which conceptualises burnout as an element of compassion fatigue, with no sub-components of its own. Beetham et al.33 and Foote,35 cited the ProQOL version 5, but presented data for compassion satisfaction, burnout, and compassion fatigue separately, in line with an older version.31 Beetham et al.33 also referred to secondary traumatic stress as an umbrella term for compassion fatigue and burnout, a conceptualisation that did not match any versions of the ProQOL or the publication they cited,54 but later suggested that the term was synonymous with compassion fatigue.31 Several studies presented oversimplified descriptions of the problem(s) they set out to measure, implying that there was general acceptance of a single definition rather than numerous, heterogenous views.

Our review excluded grey literature, such as reports, theses, conference presentations, working papers, and media articles, which can provide valuable insights and reduce publication bias.55,56 However, they also vary considerably in quality and rigour, can be time and resource consuming to find and evaluate, and are difficult to compare to academic journal articles due to diverse lengths and formats.55,56 A preliminary search of grey literature prior to this review found very little empirical research on VNs’ and SVNs’ mental health, with the exception of the reports mentioned in the introduction.10,13,14 We also excluded studies that did not provide appropriate descriptive statistics, or present relevant data separately for VNs and/or SVNs if the sample included other participants. While these articles may have provided interesting findings, they could not contribute to answering our research questions. Additionally, potential risk factors, including demographics, individual characteristics (e.g., self-efficacy, emotional intelligence), coping strategies, and sources of support were not reviewed. Before examining these issues, baseline estimates of prevalence of poor mental health in VNs and SVNs are required. Future reviews could expand our boundaries to include US and Canadian veterinary technicians and veterinary technologists.

**4.2. Conclusions**

As observed by Davidson,57,58 veterinary nursing is a profession often overlooked by clients, colleagues, and employers. Our review suggests that it has also been overlooked by researchers, highlighting considerable gaps in the evidence supporting our understanding of VNs’ and SVNs’ mental health. Future research should include assessment of this in relation to other occupational and national populations, which would help to establish whether the VN profession is different in any way. Longitudinal studies would provide a more consistent overview and counterbalance temporary issues. Recognition of the crucial role VNs play in interprofessional teams, and the need to protect their mental health in order to maintain effective performance, job satisfaction, career commitment, and optimal clinical outcomes, should be promoted.

**Author Contributions**

*Conceptualisation:* All authors. *Funding acquisition:* All authors. *Investigation:* Naomi King and Jacqueline M. Cardwell. *Writing – original draft:* Naomi King and Jacqueline M. Cardwell. *Supervision:* Jacqueline M. Cardwell. *Writing – review and editing:* All authors.

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**Conflict of Interest Statement**

The authors have no conflicts of interest to declare.

**Ethics Statement**

No ethical approval was required for this study.

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**Figure legends**

**Figure 1.** Inclusion criteria and sub-criteria.

**Figure 2.** Flow diagram of the screening and selection procedure.

**Figure 3.** How measuring scales used by the reviewed studies conceptualise burnout.