Mental Health, Practice-Related Stressors, and Job Satisfaction of Veterinary Technicians in Nevada

A thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Veterinary Science and the Honors Program

by

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ABSTRACT

High rates of depression and suicide are well documented in veterinarians, but veterinary technicians (VTs) have been overlooked as a population of interest. It was hypothesized that VTs may have increased rates of poor mental health similar to veterinarians due to the similarity between professions and their close proximity to one another, as well as low job satisfaction. VTs in Nevada were surveyed and asked about their current mental health states, job satisfaction, and job stressors they considered to be most significant. Results showed significant psychological distress in a higher percentage of VTs in comparison to veterinarians and the general population as indicated in previous studies. In addition, VTs who thought that mental health treatment was inaccessible to them were more likely to have serious psychological distress. This study indicates that many VTs in Nevada are currently suffering from serious psychological distress, and may be at risk for suicide. Future studies should examine mental health in VTs throughout the United States.
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Introduction

In recent years, studies have shown that veterinarians now have one of the highest suicide rates of any profession in the United States (Nett et al., 2015). Researchers have identified various risk factors, including stresses related to practice management, difficult clients, and high debt. A 2015 study of 11,627 U.S. veterinarians showed that 31% of respondents had suffered from depression, 17% had suicidal ideation, and 1% had attempted suicide (Nett et al., 2015). Veterinarians have easy access to some of the deadliest drugs designed for euthanasia procedures, which makes suicide by drug overdose easier for them. Furthermore, since they are in the practice of euthanizing animals, it is probable that some see suicide as a way to relieve themselves of pain and suffering.

Although extensive research has been done on veterinarians, solid data are lacking on veterinary technicians (VTs), the nurses of the veterinary field. Because they work closely with veterinarians, VTs have access to the same drugs as veterinarians and are exposed to many of the same stressors. Although VTs don’t make decisions related to diagnosis and course of patient treatment or deal with the stresses of owning a practice, they are in direct contact with clients and their animals, and face other stressors related to working under veterinarians. Clients and veterinarians may also have less respect for VTs, treating them poorly (Fowler, Holzbauer, Smith, & Scheftel, 2016). The goal of this study is to identify how the current mental states of VTs in Nevada are affected by workplace stressors, such as being involved in animal euthanasia, and how these stressors affect their job satisfaction through the use of an online survey.
The lack of information related to VTs in the workplace was addressed by researching the mental health status of VTs in the state of Nevada. Through the distribution of an online survey, VTs licensed through the Nevada State Board of Veterinary Medical Examiners had the opportunity to respond to questions on their current state of mental health, stressors in the workplace, job satisfaction, and their role in euthanasia procedures. This study emphasized the effects of participating in animal euthanasia on the mental health of VTs, since animal euthanasia is an aspect of the job that is unique to the veterinary profession. The results yielded data on the number and types of top stressors, effects of participating in euthanasia procedures, mental health, and job outlook as perceived by the respondents. It was expected that VTs struggle with poor mental health, are not satisfied with their job, and are planning on leaving the profession due to job stressors. Furthermore, being involved in animal euthanasia was expected to have a negative effect on mental health in VTs.

This research will bring awareness to the VT and veterinary community, encouraging open conversation and initiating problem solving by looking for ways to reduce or eliminate stressors in the workplace. This research may also be useful in identifying stressors that veterinarians and VTs have in common. Discovering what situations VTs face in the workplace and how those situations affect their well-being and job satisfaction may initiate the process of finding solutions that may improve the profession’s outlook, and create a healthier work environment for current and future VTs.
Literature Review

Suicide, mental health, and job stressors have been thoroughly studied in veterinarians, but other animal workers in the veterinary profession have failed to attract the same degree of notice. Of the few studies that exist, all but one were done on VTs outside of the United States. Despite the lack of attention on VTs, the research that has been done on veterinarians provides a solid foundation for the research that needs to be done on VTs. Because veterinarians and VTs work in the same environments, it is reasonable to believe that some of the results of studies done on veterinarians may be applicable to VTs. Examination of the existing literature yields a more thorough understanding of the issues of suicide, mental health, and job stressors that may also be affecting VTs.

Suicide

It has been found that veterinarians are at a higher risk for suicide than the general population (Blair & Hayes Jr., 1982; Crane, Phillips, & Karin, 2017; Jones-Fairnie, Ferroni, Silburn, & Lawrence, 2008; Kinlen, 1983; Milner and Beaumont, 1995; Milner, Niven, Page, & LaMontagne, 2015; Platt, Hawton, Simkin, & Mellonby, 2010). This trend is not a recent development. A study from 1983 extracted mortality information from records of all registered veterinarians in Britain from 1949-1975 (Kinlen, 1983). Over this time period, death by suicide among veterinarians doubled. In a review of studies comparing suicide risk in veterinarians to suicide risk in the general population in the United Kingdom, 14 out of 15 studies found veterinarians to be at an increased risk (Platt et al., 2010). Studies in Australia reveal similar results. A study examining suicide-related deaths in Australian veterinarians between 1990 and 2002 showed that
veterinarians in Western Australia and Victoria had a suicide rate almost 4 times that of the general population (Jones-Fairnie et al., 2008). The national suicide rate for veterinarians in Australia between 2001-2012 was almost twice that of the general population (Milner et al., 2015). Many studies are in agreement that suicide risk is elevated in veterinarians, but not all. It is interesting to note that Skegg, Firth, Gray, and Cox (2010) looked at suicide rates by profession in New Zealand and found that veterinarians were not at a high risk, with only three veterinarians committing suicide between the years of 1973 and 2004. The reason for this discrepancy is unclear, and more research needs to be done to examine differences between veterinarians in New Zealand and veterinarians in other countries.

The United States has not been immune to increased suicide risk in the veterinary profession. One of the earliest comprehensive studies examined mortality patterns in veterinarians from 1947-1977 (Blair & Hayes Jr., 1982). Death certificates were obtained for 5016 white male veterinarians (Women and ethnic minorities were excluded due to low sample sizes.). Of all the deaths, 137 were due to suicide, which approaches twice the expected number of deaths due to suicide (80.5). Later, Milner and Beaumont (1995) found that the number of observed deaths (42 out of 450 total deaths) due to suicide in white male and female veterinarians was higher than the expected number (15.99).

One possible explanation as to why veterinarians turn to suicide to relieve their suffering rather than leaving their profession is that veterinarians feel trapped in the profession, leading them to consider suicide when they feel that they have no other options. Crane et al. (2017) conducted a study examining how veterinarians perceived the transferability of their skills to other professions. A survey was distributed to
veterinarians at the beginning of the study (T1) and again 12 months later (T2). When the intention to leave the profession was high at T1 and skill transferability was low at T2, the probability of being suicidal increased by 6%.

**Mental Health in Veterinarians**

An increased risk of suicide in veterinarians indicates that the incidence of depression, a risk factor for suicide, is also elevated. Several studies in the United States have identified serious psychological distress in veterinarians (Platt, Hawton, Simkin, & Mellanby, 2012). Nett et al. (2015) found that 31% of the 11,627 veterinarian respondents in the United States had suffered from depressive episodes since graduating from veterinary school, and 9% had serious psychological distress at the time of the study. In addition, 19% of respondents were already being treated for a mental illness. This study is significant because it has one of the highest and most diverse sample sizes of any studies done on mental health in veterinarians, which means that this study has greater external validity. Therefore, the results of the study can be generalized to the rest of the veterinary population in the United States.

Poor mental health in veterinarians is a worldwide trend. Other countries have reported depression in veterinarians as well. Hatch, Winefield, Christie, and Lievaart (2011) found that Australian veterinarians were almost twice as likely as the general population to experience severe depression, with 3.6% of the general population scoring very high for depression compared with 5.2% of veterinarians. Bartram, Yadegarfar, and Baldwin (2009) reported a higher level of depression and anxiety in U.K. veterinarians when compared with the general population. The differences in the prevalence of mental health issues between veterinarians and the general populations of Australia and the
United Kingdom are too large to attribute to chance, and are indicative of a deeper issue due to differences in profession. Another alternative is that there are other confounding variables that have not yet been determined, such as differences in lifestyle outside of work between veterinarians and the general population.

It is also possible that veterinarians may be predisposed to depression long before they enter the profession, due to personality factors that cause people to be attracted to, and to pursue a career in, veterinary medicine. A study examining the mental health of undergraduate veterinary students in the United Kingdom found students to be significantly more depressed than the general population (Cardwell et al., 2013). Personality traits, such as being a perfectionist or being so driven that more time is invested into studying than is healthy, can cause mental health problems long before becoming a veterinarian (Bartram & Baldwin, 2010).

**Workplace Stressors**

Multiple studies have shown workplace stressors to play a large part in poor mental health in the veterinary profession and lead to burnout (Bartram et al., 2009; Black, Winefield, & Chur-Hansen, 2011; Deacon & Brough, 2017; Elkins & Elkins, 1987; Gardner & Hini, 2006; Shirangi, Fritschi, Holman, & Morrison, 2013). In a study done by Fowler et al. (2016), 32% of Minnesota veterinarians reported that their health had been compromised by stress in the workplace in the past year. Nett et al. (2015) found that long hours and an overwhelming amount of work were cited to be the most stressful factors to veterinarians. A survey done by Meehan and Bradley (2007) revealed similar results, with larger numbers of consultations, phone calls, surgeries, working hours, being on call, days working late, equipment difficulties, and euthanasia being
associated with elevated levels of stress. In Meehan and Bradley’s sample of veterinarians, job stress and general psychological health had a strong negative correlation; as job stress increased, psychological health diminished. Another Australian study found that as hours worked per week increased, prevalence of depression in female veterinarians increased (Shirangi et al., 2013). In one of the high-quality studies reviewed by Platt et al. (2012) two-thirds of female veterinarian respondents experienced signs of burnout. Because of the shift from a previously male-dominated veterinary profession to one where females are now prevalent, more research needs to be done to look into differences in mental health between male and female veterinarians and how each gender handles workplace stressors.

Veterinarians who worked more than 45 hours per week scored much more poorly on a General Health Questionnaire than those who worked under 35 hours per week. Veterinarians in New Zealand reported hours worked, client expectations, and unexpected outcomes as the most significant stressors (Gardner & Hini, 2006). Nearly 12% had been diagnosed with clinical depression at some point in their lives, 16% had seriously considered suicide, and 2.4% had attempted suicide. These numbers may be lacking in significance though, due to a lack of information about the onset of depression. Some of the respondents may have developed depression before becoming veterinarians.

It is apparent, however, that the causes of stress for veterinarians are fairly consistent across multiple countries, suggesting that stress is tied more to the profession itself than to other cultural and lifestyle influences. Although the stress may be related to the profession, the problems of long working hours and overwhelming workload are more general complaints. If other professions also have issues with these general stressors,
perhaps looking to how these professions mitigate the effect of general stressors on their employees is the next step in finding a solution.

The most recent piece of research examining practice-related stressors involved the development of taxonomy of these stressors (Vande Griek et al, 2018). Researchers surveyed 1,422 U.S. veterinarians regarding stressors they experienced in their profession. The most commonly cited stressors fell mainly under three categories: financial insecurity (20.3%), client issues (17.9%), and coworker or interpersonal issues (12.7%). The creation of taxonomy will allow for future research to use a more unified list of definitions for stressors and facilitate better consistency between studies.

Euthanasia

There is also evidence that participation in euthanasia is a variable associated with increased stress and depression in animal workers, although results vary considerably. One study that surveyed Australian veterinarians revealed that depression was weakly correlated with the frequency of administration of euthanasia (Tran, Crane, & Phillips, 2014). Unexpectedly, as euthanasia frequency increased, depressed mood became less indicative of suicide risk. How euthanasia frequency mitigates suicide risk, but not depression is difficult to explain, and confounding factors may be present. Rohlf and Bennett (2005) examined a sample of 148 animal workers who had actively participated in euthanasia, including veterinarians, veterinary nurses (VTs), research staff, and animal shelter staff. While euthanasia was listed as the third worst part of their job (the first and second worst parts being “aversive work conditions” and “dealing with client/owner difficulties”, respectively) by 45.3% of participants, traumatic stress levels in these participants were only in the subclinical range, with none in the severe range. Despite
this, constant subclinical stress could possibly build over time, and it would be useful to compare traumatic stress levels with the amount of time in the profession.

It has also been hypothesized that veterinarians are at an increased risk for suicide due to the belief that euthanasia is an acceptable way to end suffering (Witte, Correia, & Angarano, 2013). Researchers found that rather than euthanasia causing distress that may lead to increased suicide risk, euthanasia may be the means to an end itself (Witte et al., 2013). In a sample of veterinary students surveyed for attitudes towards euthanasia, as exposure to companion animal euthanasia increased, distress due to euthanasia decreased. Furthermore, there was a negative association between distress due to euthanasia and fearlessness about death; as fearlessness about death increased, distress from euthanasia decreased. Veterinarians who are depressed due to other job stressors might turn to euthanasia themselves, seeing how it can be a positive way to end the suffering of pets, and believe that euthanasia is a humane and acceptable way to end their own lives. Despite many studies citing euthanasia drugs, such as barbiturates, as being frequently used in suicide attempts by veterinarians, the relationship between euthanasia and stress, depression, and suicide risk remains unclear (Blair & Hayes Jr., 1980; Blair & Hayes Jr., 1982; Cordell, Curry, Furbee, & Mitchell-Flynn, 1986; Miller & Beaumont, 1995).

Animal euthanasia may affect animal workers who are in close proximity to euthanasia procedures, and studies have found euthanasia exposure to cause high turnover rates in animal shelter employees (Baran et al., 2009; Rogelberg et al., 2007; Reeve, Rogelberg, Spitzmüller, & DiGiacomo, 2005). Rogelberg et al. (2007) surveyed 36 animal shelters in the United States that had five or more full-time employees and conducted euthanasia on site. Employee turnover rates increased as euthanasia rate of
dogs increased. Presence of other animals during euthanasia and euthanasia due to reasons unrelated to health or behavior correlated with higher turnover rates, while use of a room designated only for euthanasia and removal of the euthanized animal from the room before the next animal to be euthanized was brought in correlated with lower turnover rates. If shelter employees are negatively affected by animal euthanasia even though they are not administering the euthanasia itself, it is likely that VTs are also negatively affected by euthanasia, since they do participate in its administration.

**Mental Health in Veterinary Students**

Research also suggests that mental health issues can begin while in veterinary school (Hafen, Reisbig, White, & Rush, 2006; Hafen, Reisbig, White, & Rush, 2008; Cardwell et al., 2013). Results from a survey of veterinary students from Kansas State University (KSU) showed that 32% of students enrolled in the study were suffering from depression (Hafen et al., 2006). Not only is this percentage higher than the percentage of people suffering from depression in the general population (16.4% to 21.5%), but it is also higher than the proportion of college students with depression (14.8% to 23.7%), and even medical students suffering from depression (23%), indicating that poor mental health in veterinary students is not just caused by being in college and dealing with normal college stressors. Students with higher levels of depression often reported homesickness, physical health issues, and unclear expectations from instructors.

A later study of veterinary students at KSU aimed to discover how academic and non-academic stressors affected the students’ well-being (Hafen et al., 2008). The study yielded similar results in regards to levels of depression in the first-year veterinary students; one-third of students experienced clinical levels of depression. During their first
semester, a high number of students reported homesickness and academic performance as their main stressors. During the second semester, academic performance, perceived poor physical health, and struggling to fit in with peers were the most frequently reported stressors. While these stressors may seem typical of what many college students experience, it is evident that this depression continues well into these students’ veterinary careers. For example, Cardwell et al. (2013) found that in the United Kingdom, veterinary student well-being was poorer than the general population, but scores were similar to those reported in veterinarians. Over half of the student respondents (54.3%) reported specific mental health issues, including, but not limited to, low self-esteem (31.1%), depression (26.6%), anxiety disorder/panic attack (21.5%), and self-harm (10.6%). These results again support the possibility of the presence of particular personality factors in veterinary students and veterinarians that make them more susceptible to mental health issues when under stress.

**Attitudes Towards Mental Health**

Negative attitudes towards mental health are common in both veterinary students and veterinarians. In response to questions regarding attitudes toward mental health, 69% of veterinary students from a U.K. college agreed with the statement, “If I was suffering from mental health problems I wouldn’t want people knowing about it” (Cardwell et al., 2013). Nett et al. (2015) showed that veterinarians hold similar attitudes towards mental health. Only 31.8% of U.S. veterinarians strongly agreed that “people are caring toward persons with mental illness”, compared with 60.2% of U.S. adults. Interestingly enough, veterinarians who were suffering from mental illness were less likely to agree that people
are caring toward persons with mental illness and more likely to believe that mental health treatment was inaccessible.

The tendency of veterinarians to conceal mental health problems may be contributing to their high suicide risk and to the lack of awareness in the veterinary profession thereof. Skipper and Williams (2012) surveyed members of the Student American Veterinary Medical Association, licensed veterinarians in Alabama, and United States veterinary-association executive directors to find out their attitudes and beliefs about suicide risk in the veterinary profession. A staggering low 10% of veterinary students believed that veterinarians had higher suicide rates than the general population, and 11% of veterinarians who responded believed that suicide was an issue in the veterinary profession. Respondents that disclosed that they had experienced clinical depression comprised 66% of the survey sample, but only about half of them had sought treatment. Executive directors from 22 states responded to the survey, and of these respondents, 37% thought that suicide was a significant issue for veterinarians. The lack of awareness of data that indicate that suicide and mental health are of great concern shows that important research on these issues may not be reaching the governing bodies for the veterinary profession. The veterinary field seems to stigmatize mental illness rather than approaching the subject with compassion, only further decreasing the likelihood that veterinarians will seek help for mental health problems.

Coping Behaviors

Chronic poor mental health can create unhealthy coping behaviors in veterinarians. Veterinarians who suffer from depression and are under high stress are at a higher risk for substance abuse and drug use (Bartram et al., 2009; Harling, Strehmel,
Harling et al. (2009) examined a sample of 1,060 veterinarians in Germany. The sample was split almost evenly between males and females and divided into three practice groups; 49.9% were practice owners, 22.5% worked in a clinical practice setting, and 27.5% worked in a non-clinical setting. Alcohol consumption was high, and 31.9% of respondents demonstrated high-risk alcohol consumption, with practice owners being the most prominent consumers. Practice owners have increased responsibilities associated with the concerns of running a business, and it can be speculated that they may turn to alcohol to relieve their stress. In the 30 days previous to participating in the study, 21.9% of veterinarians had engaged in at least one episode of binge drinking, and 6.9% of veterinarians engaged in binge drinking regularly. Veterinarians who were under intense stress were twice as likely to engage in binge drinking. Prescription drugs, including tranquilizers, antidepressants, opioids, and neuroleptics, were used within the previous 30 days by 2.4% of veterinarians. While 19.2% of veterinarians were smokers, tobacco use was not correlated with stress.

A study done by Bartram et al. (2009) in the United Kingdom found that consumption of at least six drinks in one sitting was a daily or almost daily occurrence for 2.2% of veterinarians and a weekly occurrence for 15.9% of veterinarians. Compared to the general population, of which 48% drank more than twice a week, veterinarians were more frequent drinkers and 65% of respondents drank more than twice a week. Similar patterns have been found in veterinary students. The results of a study done on alcohol consumption in veterinary students at Auburn University showed that the average number of drinks consumed per week among respondents was five, and 25% of participants were at moderate risk for alcohol-related issues (Diulio et al., 2015). Almost all participants
(95.5%) reported having at least one depressive symptom in the past week, but the occurrence of one depressive symptom is not necessarily indicative of clinical depression, and alcohol use can cause depressive symptoms after usage, as it is a depressant. Use of a regression model revealed that coping methods mediated the association between depression and risk for alcohol abuse. Knowing what these other coping methods are would be helpful in determining effective ways of decreasing depression in not only students, but in veterinary professionals as well.

Baran et al. (2009) determined common coping methods employed by euthanasia technicians (ETs) in the United States to deal with euthanasia. ETs are unique in that they are licensed to perform euthanasia on animals (but no other medical procedures) and typically do so in shelter or laboratory settings (“State laws governing euthanasia,” 2018). The top coping methods reported by ETs were under the categories “vent your feelings” (15.7% of responses), “alter your emotional attachment level” (15.3%), and “know that euthanasia is sometimes the best option” (14.1%). The fact that ETs have to cope with euthanasia implies that they are negatively affected by participating in animal euthanasia. The degree to which ETs have to cope with euthanasia compared to veterinarians and VTs may be higher since euthanasia is the main job responsibility of ETs, while veterinarians and VTs also collectively diagnose and treat sick animals and practice preventative medicine.

**Veterinary Technicians**

The data on VTs are much more limited, but the studies that have been done support the possibility that VTs are also at an elevated risk for depression and suicide. Fowler et al. (2016) discovered that there were no significant differences between
veterinarians and VTs in Minnesota regarding the percentage of each group that was clinically depressed (10%), although VTs were two times more likely to have been diagnosed with anxiety than veterinarians. Almost twice as many VTs (42%) as veterinarians (21%) reported witnessing or being subjected to workplace abuse, as well as missing work in the past year due to workplace stressors. Despite these factors, 89% of veterinarians and 86% of VTs were “happy with current position in veterinary medicine.”

Results from an Australian survey (Black et al., 2011) found that as perceived job demand and euthanasia exposure increased, psychological distress and job burnout increased, and job satisfaction decreased. VT participants had a higher mean (M=35.49) for perceived job demand than did social workers, nurses, and general practitioners (M=30.9) according to a previous study. In a more recent study, 55% of VT respondents reported high levels of burnout related to their profession (Deacon & Brough, 2017). Compared to samples of human service professionals, VTs had a higher incidence of burnout. Psychological stress and job burnout were positively correlated with general job demands, demands of exposure to euthanasia specific to the VT profession, and euthanasia of animal patients with poor prognoses. Respondents cited ‘the death of a patient whom you have a particular affection for’, ‘watching a patient suffer’, and ‘the death of a patient’ to be the top three workplace stressors they experienced. There have been very few studies that address suicide in VTs; a review of suicide-related deaths in Australia from 2001-2012 revealed a 1.25 mortality ratio of VTs to the general population (Milner et al., 2015). While it is suspected that VTs are at an elevated risk for suicide, until more studies are conducted on suicide in VTs, this is only a speculation.
Conclusion

The studies done on depression and suicidality in veterinarians are largely in agreement that the health of veterinarians is seriously compromised, most likely due to the stressors of the profession. The fact that veterinary students also suffer from higher levels of depression complicates the matter, since these students have not yet been exposed to many of the stressors involved in the job. One possibility is that those who are attracted to the profession have “high-stress” and “perfectionist” personality types due to the academic rigor involved with becoming a veterinarian (Bartram & Baldwin, 2010). Another unresolved issue is the role that euthanasia plays, which is of particular interest due to animal euthanasia’s unique place in the veterinary profession. It seems logical that euthanasia should have a negative effect on veterinarians and VTs, but solid conclusions cannot be drawn from the conflicting literature that exists on the subject. Despite these issues, the literature shows that there is a significant mental health problem in the veterinary profession, and indicates that VTs are likely to suffer from poor mental health as well, which is the fundamental reason for this research.

Methodology

My study was conducted using an online survey through Survey Monkey (see Appendix A). Survey Monkey was used because it is user-friendly for both the researcher and the participants. Many participants are familiar with this software given its popularity among users. The introduction of the survey explained the purpose of the study, and provided detailed information regarding all aspects of the survey in order to obtain informed consent from respondents (see Appendix A). The survey questions’ content
considered current mental health, job satisfaction, basic demographics, and stressors in the workplace. The questions included yes-or-no answers; disagree-neutral-agree answers; all-that-apply answers; and two write-in box answers. The quantitative nature of the collected data made it easier to work with data from such a large pool of respondents, which totaled 131. The data could then be compared to existing data from studies on veterinarians.

The survey questions were broken down into the following sections, respectively: demographics (questions 2-9), mental health (questions 10-17), practice-related stressors (questions 18-23), and job satisfaction (questions 24-29). The survey also contained questions throughout asking respondents if they would like to continue, so that they had the option of discontinuing their participation in the survey if they so desired. If they elected to terminate their participation in the survey, their results were not recorded. By pressing the “Submit” button at the end of the survey, respondents consented to being included in the study, and their responses were recorded. The survey was modeled after Nett at al.’s (2015) survey because they were also examining mental health, practice-related stressors, and job satisfaction, but in the related population of veterinarians. I used many questions from Nett et al.’s (2015) survey, but had to modify some questions to fit my target population of VTs. Questions about suicide were omitted from the survey because approval from a full Institutional Review Board (IRB) panel would have been required; waiting for the approval would have delayed the study by two months.

The Nevada State Board of Veterinary Medical Examiners provided me with access to their list of all of the licensed VTs in Nevada, which totaled 689. After obtaining approval from the UNR IRB, an email (see Appendix B) was sent to all VTs on
the list on Monday, 5 February, 2018 containing a request for participation and a web
link to the survey. Two weeks later, a reminder email (see Appendix C) was sent to
everyone on the list. Shortly thereafter, the VT representative for the Nevada State Board
of Veterinary Medical Examiners, Melissa Schalles, sent out another reminder email of
her own. The survey was open to participants for four weeks; afterwards, the raw data
was downloaded from Survey Monkey onto an Excel spreadsheet. Responses from VTs
who were not currently licensed and practicing and from VTs who did not fully complete
the survey were eliminated. This reduced the data pool from 173 respondents who
submitted the survey to 131 respondents who fully completed every question of the
survey. Calculations were done on Excel, due to the ease of using this program for the
data obtained from the survey. An online calculator was used to calculate 95%
confidence intervals (CI), which meant that there was a 95% chance of the actual value
being within that range. Then, the summary statistics, including percentages, means, and
standard deviations, were calculated. The questions for screening for current
psychological distress were taken from the Kessler-6 scale, a self-report measure used to
detect psychological distress by asking questions about symptoms of anxiety and
depression that a person may be experiencing (Kessler et al., 2003). For each question,
points were assigned based on the selected answer; “None of the time” received zero
points, “A little of the time” received one point, “Some of the time” received two points,
“Most of the time” received three points, and “All of the time” received four points. The
points were added to calculate the Kessler-6 score for each respondent, which could
range between 0 and 24. Chi-squared analyses were conducted to find associations
between variables. These associations were considered significant if the p-value was
below 0.05. If an association was found, an odds ratio (OR), which explains the strength of the association, was calculated. Data regarding attitudes towards mental health were compared between VTs and the general population using data from a national survey of U.S. adults (Kobau & Zach, 2013).

**Results**

**Demographics (survey questions 2-9)**

Of the 131 respondents included in the final data set, 124 (94.66%) were female and 7 (5.34%) were male. A majority of respondents were in the 20-29 (32 [24.43%]), 30-39 (48 [36.64%]), and 40-49 (35 [26.72%]) age categories. Most respondents reported being married (63 [48.09%]) or single (54 [41.22%]), and there was a fairly even split between having children (61 [46.56%]) and not having children (70 [53.44%]). A variety of practice-types were represented, the most common being small animal (74 [56.49%]), emergency (17 [12.98%]), and mixed (11 [8.04%]). Respondents could also select the category “Other”, of which 15 (11.45%) did, and write in their practice type or job setting if it was not listed as a choice. The practices reported in the “Other” category included academia, specialty, corporate, hospital inspector, and nonprofit education. Most respondents had been licensed practicing veterinary technicians for 1-4 years (38 [29.01%]), 5-10 years (42 [32.06%]), or 11-20 years (38 [29.01%]). All demographic data were consolidated into a table and compared with responses to questions about mental health (see Table 1). Each cell contains the percentage of respondents in a certain demographic group that indicated they fit into a mental health category; for example, 17.74% of females had current serious psychological distress.
Table 1. Results for Nevada VTs who had serious psychological distress at the time the survey was taken, were currently receiving treatment for a mental health illness, had previous problems with clinical depression, or had previously been treated for clinical depression.

<table>
<thead>
<tr>
<th>Variable</th>
<th>No.</th>
<th>Current serious psychological distress (survey question 10)</th>
<th>Current treatment for any mental health illness (survey question 11)</th>
<th>Previous problem with clinical depression (survey question 13)</th>
<th>Previous treatment for clinical depression (survey question 14)</th>
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<tbody>
<tr>
<td>All respondents</td>
<td>131</td>
<td>24, 18.32 (11.70-24.94)</td>
<td>19, 14.50 (8.47-20.53)</td>
<td>32, 24.43 (17.07-31.79)</td>
<td>25, 19.08 (12.35-25.81)</td>
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<td>1, 14.29 (-11.64-40.22)</td>
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<td>8, 25.00 (10.00-40.00)</td>
<td>4, 12.5 (1.04-23.96)</td>
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<tr>
<td>40-49</td>
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<td>60-69</td>
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<td>Current treatment for any mental health illness (survey question 11)</td>
<td>Previous problem with clinical depression (survey question 13)</td>
<td>Previous treatment for clinical depression (survey question 14)</td>
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<td>n, % (95% CI)</td>
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<td>Practice of veterinary medicine (y) (survey question 9)</td>
<td>Practicing in Nevada for whole career? (survey question 7)</td>
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<tr>
<td></td>
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<td>Current serious psychological distress (survey question 10)</td>
<td>Current treatment for any mental health illness (survey question 11)</td>
<td>Previous problem with clinical depression (survey question 13)</td>
<td>Previous treatment for clinical depression (survey question 14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n, % (95% CI)</td>
<td>n, % (95% CI)</td>
<td>n, % (95% CI)</td>
<td>n, % (95% CI)</td>
</tr>
<tr>
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<td>9, 23.68 (10.16-37.20)</td>
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<tr>
<td>21-30</td>
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<td>4, 36.36 (7.93-64.79)</td>
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<tr>
<td>≥31</td>
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<td>0</td>
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<tr>
<td>Mental Health (survey questions 10-16)</td>
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</table>

Following the conditions used by Nett et al. (2015), a Kessler-6 score of 13 or higher (on a scale of 0-24) indicated serious psychological distress. Serious psychological distress was evident in 24 respondents (18.32%). The mean Kessler-6 score was 7.24 (95% CI, 6.42 to 8.06). A fifth (27 [20.61%]) of respondents reported that they were currently taking medicine or receiving treatment from a doctor or health professional for a mental health condition or emotional problem. Depression (14 [50.00%]) and anxiety (6 [21.43%]) were the most commonly listed reasons for receiving treatment. Of those who
had serious psychological distress, only 9 (37.50%) were currently taking medication or receiving treatment for a mental health condition or emotional problem. Respondents who reported having a significant problem with depression since becoming a VT were more likely to strongly agree or somewhat agree that they were planning on leaving veterinary medicine ($X^2$, 8.4; p-value, 0.003752; OR, 3.5493; CI, 1.4642-8.6042). Only 17 (12.98%) respondents reported that their workplace had some sort of suicide awareness and prevention program in place. Reported programs included suicide hotlines, counseling through insurance, access to references, and an employee assistance program. Of those respondents who had serious psychological distress, only 2 (8.33%) reported their workplace having a suicide awareness program. Of the 32 (24.43%) respondents reported struggling with clinical depression since becoming a licensed VT, 19 (59.38%) had been treated for their clinical depression.

**Attitudes Toward Mental Illness (survey question 17)**

While a majority of VTs (111 [84.73%]) agreed that treatment could help people with mental illnesses lead normal lives, many respondents (46 [35.12%]) were either unsure or thought that mental health treatment was inaccessible to them. The respondents who were unsure or disagreed that mental health treatment was accessible to them were more likely to have serious psychological distress (p-value, 0.0305; OR, 0.3773; 95% CI, 0.1532-0.9297). Being unsure or disagreeing that mental health treatment was accessible did not appear to be associated with being less likely to receive treatment. The belief that people are caring and sympathetic towards persons with mental illness was held by only 49 (37.41%) respondents. Compared to the general population (see Figure 1), VTs were less likely to agree that treatment can help people with mental illnesses lead normal lives.
On the other hand, VTs were more likely to believe that people are caring and sympathetic towards people with mental illnesses. Furthermore, VTs who had serious psychological distress were less likely to agree with the statements regarding attitudes towards mental health than those who did not have psychological distress, which was also true of U.S. adults.

![Figure 1. Attitudes Toward Mental Illness: Percentage of Nevada VTs with (black bars) and without (white bars) serious psychological distress, and percentage of U.S adults with (diagonal-striped bars) and without (checkered bars) psychological distress who somewhat agreed or strongly agreed with statements regarding attitudes towards mental health and mental health treatment (survey question 17). Data for U.S. adults were obtained from Kobau & Zack (2013). *Data for U.S. adults were unavailable](image)

**Workplace Stressors and Job Satisfaction** *(see Figure 2; survey questions 18-29)*

The top three workplace stressors cited were demands of practice (79 [60.31%]), poor treatment by veterinarians or practice management (51 [38.93%]), and pressure from veterinarians or practice management (35 [26.72%]) *(see Figure 2).* Respondents
reported on their presence in the room during euthanasia, and 47 (35.88%) were in the room all of the time or most of the time. Only 6 (4.58%) respondents were never in the room during euthanasia. Almost all respondents (123 [93.89%]) were aware that euthanasia would be part of their job before entering the profession. If they had known now about what their job involves, 23 (17.56%) respondents would not have chosen the same career path, and 39 (29.77%) respondents might have chosen the same career path. A fifth (26 [19.85%]) of respondents reported that coping with feelings of grief related to veterinary medicine was not easy for them.

Most veterinary technicians strongly agreed (63 [48.09%]) or somewhat agreed (46 [35.11%]) that they felt the same sense of satisfaction about helping animals as when they first became a veterinary technician. A total of 98 (74.80%) respondents strongly agreed or somewhat agreed that they made the right career choice. While a large number (88 [67.18%]) of VTs indicated that they had considered leaving veterinary medicine, only 29 (22.13%) had actually made plans to leave veterinary medicine. The top three reasons cited by VTs for leaving veterinary medicine were demands of practice (87 [66.41%]), poor treatment by veterinarians or practice management (64 [48.86%]), and unclear management and work role (31 [23.66%]). “Other” was selected by 43 (32.82%) respondents, but there was no write-in box for respondents to provide reasons for selecting “Other”. Of the 29 VTs planning on leaving veterinary medicine, 9 (31.04%) were classified as having serious psychological distress, compared to the VTs planning on staying in veterinary medicine, of which 6 (20.69%) had serious psychological distress.
Other
Client complaints
Animal deaths from euthanasia
Educational debt
Animal deaths from illness
Dealing with personal, staff, or client grief
Poor treatment by clients
Making professional mistakes
Ethical challenges (e.g. balancing animal and human interests)
Unclear management and work role
Pressure from veterinarians or practice management
Poor treatment by veterinarians or practice management
Demands of practice (e.g. long hours, work overload, pressure)

Percentage of Respondents

Figure 2. Workplace Stressors: Top workplace stressors reported by Nevada VT respondents (black bars) (survey question 18) and top workplace stressors that Nevada VT respondents reported might cause them to leave the profession (white bars) (survey question 29).
Discussion

Mental Health in VTs (see Table 1; survey questions 10-14)

My study found that 18.32% of respondents had serious psychological distress based on their Kessler-6 scores. This percentage was much higher compared to data on adults and veterinarians in the United States. The National Center for Health Statistics (“National health interview survey,” 2017) found that 3.4% (CI 3.15-3.68) of adult U.S. respondents had serious psychological distress in the past 30 days, while Nett et al. (2015) found that 9.3% of veterinarian respondents had serious psychological distress at the time of the study. Furthermore, Nett et al. (2015) found several demographic characteristics to be associated with higher rates of serious psychological distress for VTs that my study did not, including being separated, divorced, or never married, and not having children. On the other hand, my study found that practicing veterinary medicine from 1-4 years was associated with higher rates of psychological distress, which may be due to less acclimation to the profession. New VTs may struggle with various aspects of the profession, such as pressure and workload, and these struggles may become easier over time. Practicing in Nevada for the respondent’s whole career was also associated with higher rates of serious psychological distress. A possible cause of this association might be that Nevada VTs are working in less healthy environments than VTs in other states. Specifically, it would be interesting to see how Nevada compares to other states in terms of mental health support in the veterinary workplace, and workplace stressors and conditions. Both my study and the study done by Nett et al. (2015) were in agreement that working in shelter medicine increased the chances of having current serious psychological distress. This increased risk may be due to the large influx of animals to
the shelter that have been abused, or were surrendered with health and behavioral issues. In shelters that euthanize animals when the shelter is too full, VTs may have to participate in the euthanasia of perfectly healthy animals, which may take a toll on their mental health.

Workplace Stressors (see Figure 2; survey questions 18 and 29)

One of the top three job stressors selected by 60.31% of VT respondents was “demands of practice”, which was also one of the main job stressors reported by veterinarians in previous studies (Gardner & Hini, 2006; Meehan & Bradley, 2007; Nett et al., 2015). Unique to VTs were poor treatment (38.93%) and pressure from veterinarians or practice management (26.72%), which were the two other top stressors reported in this study. Veterinarians would not likely experience poor treatment or pressure from veterinarians, but they might from practice management. No studies done on veterinarians have indicated poor treatment by practice management as being one of the top workplace stressors, but Vande Griek et al. (2018) reported that 12.7% of veterinarians selected coworker or interpersonal issues as one of their main job stressors (12.7%). While Fowler et al. (2016) did not specifically ask if Minnesota VTs considered workplace abuse to be a main workplace stressor, 42% of VTs reported witnessing or being subjected to workplace abuse. Whether or not this abuse is from practice management and veterinarians or other VTs was not specified. In my study, when asked what top three reasons might cause VTs to leave veterinary medicine, 66.41% of VTs selected “demands of practice” and 38.93% selected poor treatment by veterinarians or practice management, but pressure from veterinarians or practice management was no longer in the top three; instead, “Other” was selected by 32.82% of VTs. In other words,
the difference between poor treatment from veterinarians and pressure from veterinarians may be that poor treatment could manifest as something more emotionally damaging such as verbal abuse or physical abuse, while pressure may simply be a high case load or pressure to work more quickly. Unfortunately, no write-in box was provided for respondents to explain their responses. It can be speculated that retirement, family issues, monetary issues, or other personal problems outside of work may be among the reasons for selecting “Other”. Similarly, “Other” was selected for the same question by 50% of veterinarians in Nett et al.’s (2015) study.

Because “demands of practice” was selected by VTs, the next step would be to break those demands down into specific stressors. Other professions most likely share many of these stressors (such as long hours or overload of work); hence, useful coping strategies used by those professions may be adaptable to the veterinary profession.

**Euthanasia (see Figure 2; survey questions 18 and 29)**

Euthanasia was expected to be a more significant job stressor than it turned out to be; while 10.9% of VTs selected euthanasia as one of their top three job stressors, only 3.82% of VTs selected it as one of the top three reasons that might cause them to leave veterinary medicine. In fact, more VTs (12.98%) selected animal deaths from illness as one of their top three job stressors. These results suggest that patient death in general may be a more significant stressor than just euthanasia alone. This idea is in agreement with findings from a study done by Deacon & Brough (2017) who found “the death of a patient whom you have a particular affection for”, “watching a patient suffer”, and “the death of a patient” to be the top three workplace stressors reported by VTs. This particular area is in need of more research to validate these ideas.
Attitudes Towards Mental Health (see Figure 1; survey question 17)

A comparison with the general population showed that VTs with serious psychological distress had less positive attitudes towards mental health in regards to treatment (Kobau & Zach, 2013). This difference in attitudes was expected because there was a higher prevalence of serious psychological distress in VT respondents in this study compared to U.S. adults. Suffering from depression may alter how VTs perceive their lives, causing them to have a more negative outlook on treatment and support from others. Unexpectedly, VTs were significantly more likely to believe that people were caring and sympathetic towards people with mental illnesses than the general population, regardless of whether they had serious psychological distress or not. The reason for this is unclear, and differences between VTs and the general population should be a focus of future studies.

Job Satisfaction (survey questions 24-29)

Overall, most VTs were satisfied with their jobs (81.82%), but when asked if they made the right career choice, a quarter (25.19%) of respondents said that they were unsure, somewhat disagreed, or strongly disagreed. This small discrepancy of 7.01% may have to do with the wording of the questions. VTs may be satisfied with their job because they like their coworkers, or the environment they work in, but not necessarily the work itself; or, some VTs may like the day-to-day work, but still be interested in pursuing a different profession.

Networks for Coping (survey questions 15 and 16)

The high rate of current serious psychological distress in respondents of this study should be concerning to the entire veterinary community. Previous studies have shown
that high rates of depression are associated with higher suicide rates (Conwell et al., 1996; Lesage et al., 1994). With only 12.98% of respondents reporting that their workplace has any type of suicide or mental health support program in place, it is apparent that more needs to be done to combat mental health issues in the workplace, regardless of their cause. It appears that no studies have been done to examine the effectiveness of mental health support programs in the veterinary workplace, and this information may be useful to have as more practices implement programs.

Not addressed in this study were the possible effects of alcohol or drug usage on mental health in VTs. Because previous studies have identified alcohol and drug usage in veterinarians as a method for coping with the stresses of their jobs, substance abuse should be taken into consideration when examining mental health issues in VTs (Bartram et al., 2009; Harling et al., 2009). While alcohol and drug consumption might be used with the intent of reducing stressors, it could also cause minor depressive symptoms to become more serious, or even cause depression to manifest in a previously healthy individual. As a confounding variable, substance abuse may contort the relationship between workplace stressors and depression.

Limitations

The main limitation of this study was a small sample size. Nevada has only 689 licensed VTs, so this limitation was expected. A small sample size limited the types of statistical tests that could be run and made the results less significant than if the sample size had been much larger. Another effect of small sample size was larger confidence intervals, which leaves some uncertainty as to the accuracy of the conclusions. Furthermore, very few male VTs responded to the survey, which was expected due to
lower numbers of male VTs in the profession in general. Because of the lack of male responses, it was not possible to draw conclusions based on gender. Information on the total number of male VTs in Nevada is not tracked by the Nevada State Board of Veterinary Medical Examiners and was therefore unavailable.

After reviewing the survey results, it became obvious that some of the survey questions could have either been worded differently or been more specific, and some answer choices been more inclusive. For example, providing a write-in box for the question that asked respondents to select top job stressors that would cause them to leave the profession would have been useful, because such a large proportion (32.82%) of respondents selected “Other” as one of their main reasons.

Because including questions related to suicide would have taken months for the IRB to approve, those questions were omitted. Having suicide-related questions would have been useful for elucidating the relationship between psychological distress and suicide in this VT population, and for comparing to previous studies; however, there is some question as to whether such inquiries would be truthfully answered.

**Conclusions**

The results of this study show that Nevada currently has an issue with regards to poor mental health quality in VTs. Even though suicide risk was not within the scope of this study, psychological distress and depression as predictors for suicide have been thoroughly documented in previous studies (Conwell et al., 1996; Lesage et al., 1994). Therefore, it is reasonable to believe that some of the VTs that were found to have
serious psychological distress in this study may also be at risk for suicide, or have attempted suicide.

After the completion of this study, several solutions came to mind. Because very few respondents reported having a quality suicide awareness and support program at their work, the implementation of support programs in veterinary practices may be helpful in encouraging VTs to seek help and turn to coworkers for support. Most respondents who reported that their practice had a program said that they had access to a suicide hotline, contact information posted in the practice, or counseling through their insurance. None of the respondents indicated that their practice had any direct means of support. Studies have found that social support may be an important coping mechanism in combating depression (Stice, Ragan, & Randall, 2004). Poor treatment and pressure from veterinarians and practice management were some main job stressors reported. Regular staff meetings would be a good time to encourage discussion in regards to ways to improve interactions between staff.

Another concern addressed in this study was the effects of euthanasia on the mental health of VTs. Results revealed that death of a pet itself may be more of a stressor than just euthanasia. While death is impossible to avoid in a veterinary setting, support from coworkers may be beneficial. The topic of animal death could be included in staff meetings alongside mental health.

Fortunately, mental health is beginning to come to the forefront of issues in veterinary medicine. This is possibly due to the increase in social media usage, which allows information to spread farther and more quickly. Incidents of suicide in the veterinary community are often publicized on social media platforms, bringing more
attention to these issues as more and more incidents occur. Continuing education classes have been designed for both veterinarians and VTs to address compassion fatigue and mental health in the workplace, but current efforts are clearly not effective enough.

Veterinary medicine is a difficult field in and of itself, but there must be ways to reduce detrimental effects on VTs. The strain the profession is putting on Nevada VTs is too significant to ignore. Future studies should aim to increase sample sizes and survey VTs in all 50 states. Because studies on effects of euthanasia have had very mixed results (Rohlf & Bennett, 2005; Tran et al., 2014; Witte et al., 2013), this is an area that needs to be examined more closely. Unfortunately, studies done on euthanasia have frequently asked different questions, and have not been uniformly worded, which may cause the inconsistency in findings. A comparison between licensed VTs and those who are still in VT school or working towards obtaining their license may be useful in drawing parallels between veterinarians who are still in veterinary school as opposed to those who are practicing veterinarians. Finding common coping methods among VTs may help identify detrimental behaviors that may in fact be contributing to poor mental health. An in-depth exploration of personality traits of veterinarians and VTs compared to those of other occupations may reveal that the problem lies deeper than just in the profession itself.

The research reported here may provide a solid foundation for future research on Nevada VTs. It is hoped that this study can draw attention to a population that is understudied, and encourage the collection of valuable data that can be used to implement programs to combat mental health problems in the veterinary profession. If workplace stressors are reduced, and the mental health of both veterinarians and VTs are
improved, the profession will have a more positive mental outlook for its participants at all levels.
References


American Veterinary Medical Association, 248(2), 207-218. doi:
10.2460/javma.248.2.207

10.1080/00480169.2006.36623


population. *Archives of General Psychiatry, 60*(2), 184-189. doi: 10.1001/archpsyc.60.2.184


Appendix A: Survey

Mental Health, Practice-Related Stressors, and Job Satisfaction of Veterinary Technicians in Nevada

About This Study

Introduction
You are being invited to participate in an anonymous and voluntary research study. Before you agree to be in the study, read this form carefully.

Why are we doing this study?
We are doing this study to find out how the job stressors that veterinary technicians face affect their mental health and job satisfaction. Your individual experience as a licensed veterinary technician is invaluable to determining the current overall mental health state of veterinary technicians in Nevada.

What will you be asked to do if you agree to be in the study, and what if you change your mind later?
If you agree to be in this study you will be asked to answer all survey questions and submit the survey when finished. The survey will take about 10 minutes of your time. You do not have to stay in the study. You may withdraw from the study at any time by exiting out of the survey without hitting the submit button.

Is there any way being in this study could be bad for you?
Some of the questions have the potential to cause distress, but it is anticipated that these reactions will be temporary. However, the following resources are available to you if you decide you would like to seek additional support:

- Dial 211 to find out about mental health resources available in your community
- www.mentalhealthamerica.net has information and links to resources in your area
- The Crisis Call Center - 1-800-273-8255
- The National Suicide Prevention Hotline - 800-273-TALK (8255)

How will we protect your private information and the information we collect about you?
We will treat your identity with professional standards of confidentiality and protect your private information to the extent allowed by law. Your responses will be completely anonymous. All results will be stored on an encrypted computer that only the researchers will have access to. We will not use any information that could identify you in any reports or publications that result from this study. Only the researchers, the University of Nevada, Reno Institutional Review Board, and the US Department of Health and Human Services (DHHS) will have access to the information we collect about you.

Who can you contact if you have questions about the study, to report an injury, to discuss a problem or complaint about the research, or to ask about your rights as a research participant?
At any time, if you have questions about this study or wish to report an injury that may be related to your participation in this study, contact Dr. Tamara Valentine at (775) 784-1455, Dr. Richard
1. Do you wish to participate in this study?
   - Yes
   - No

2. What is your sex?
   - Male
   - Female
   - Other (please specify)

3. What is your age category?
   - 20-29
   - 30-39
   - 40-49
   - 50-59
   - 60-69
   - 70+

4. What is your current marital status?
   - Single
   - Married
   - Separated
   - Divorced
   - Widowed
5. Do you have children?
- Yes
- No

6. Are you currently employed as a licensed veterinary technician in Nevada?
- Yes
- No

7. Have you been working in Nevada for your whole career?
- Yes
- No

8. In what type of practice do you work?
- Small animal
- Large animal
- Equine
- Mixed
- Shelter
- Zoo
- Exotics
- Emergency
- Laboratory
- Other (please specify)

9. For how many years have you been a licensed practicing veterinary technician?
- 1-4
- 5-10
- 11-20
- 21-30
- 31+
### Mental Health

10. In the past 30 days how often did you feel

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nervous?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hopeless?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restless or fidgety?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>So depressed that nothing could cheer you up?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...that everything was an effort?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...worthless?</td>
<td></td>
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</tr>
</tbody>
</table>

11. Are you taking medicine or receiving treatment from a doctor or other health professional for any type of mental health condition or emotional problem?

- [ ] Yes
- [ ] No
12. If yes was selected for the previous question, the medication is designed to treat:

- Depression
- Anxiety
- Insomnia
- Bipolar disorder
- Other (please specify)
### Mental Health continued

13. Since becoming a licensed veterinary technician, have you ever had a significant problem with clinical depression?
   - Yes
   - No

14. Since becoming a licensed veterinary technician, have you ever been treated for clinical depression?
   - Yes
   - No

15. Does your workplace make use of a suicide awareness and prevention program?
   - Yes
   - No
Mental Health continued

16. If yes was selected for the previous question, what kind of program does your workplace have to offer?
17. Please indicate your agreement with the following statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment can help people with mental illnesses lead normal lives.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>People are generally caring and sympathetic towards persons with mental illnesses.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Mental health treatment is accessible to me.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
18. Select only the top 3 factors (leave other factors blank) you consider to be most stressful about veterinary medicine. Please rank each selection from the most to the least stressful of those three. Mark 1 for the most stressful, and a 3 for the least stressful factor you have selected.

- Demands of practice (e.g., long hours, work overload, pressure)
- Lack of participation in decision making
- Unclear management and work role
- Poor social support
- Making professional mistakes
- Educational debt
- Ethical challenges (for example, balancing animal and human interests)
- Client complaints
- Client expectation of being an expert in all areas of veterinary medicine
- Poor treatment by clients
- Animal deaths from illness
- Animal deaths from euthanasia
- Dealing with personal, staff, or client grief
- Pressure from veterinarians or practice management
- Poor treatment by veterinarians or practice management
- Other
19. How often are you in the room during euthanasia?

<table>
<thead>
<tr>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

20. Is it harder for you to cope with euthanasia than it used to be?

- Yes
- No

21. Were you aware that participating in euthanasia would be part of your job before entering the profession?

- Yes
- Somewhat
- No

22. If you had known what you know now about what your job involves, would you have chosen the same career path?

- Yes
- Maybe
- No

23. Coping with feelings of grief related to veterinary medicine is easy for me.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
## Job Satisfaction

24. I feel the same sense of satisfaction about helping animals as when I first became a licensed veterinary technician.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

25. I made the right career choice to enter veterinary medicine.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

26. I am happy about being a veterinary technician.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

27. I have considered leaving veterinary medicine.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

28. I am currently planning to leave veterinary medicine.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Not sure/undecided</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
29. Select only the top 3 reasons (leave other reasons blank) that might cause you to leave veterinary medicine. Please rank each selection from the most to the least likely of those three. Mark 1 for the most likely reason, and a 3 for the least likely reason you have selected.

<table>
<thead>
<tr>
<th></th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demands of practice (e.g., long hours, work overload, pressure)</td>
</tr>
<tr>
<td>2</td>
<td>Lack of participation in decision making</td>
</tr>
<tr>
<td>3</td>
<td>Unclear management and work role</td>
</tr>
<tr>
<td>4</td>
<td>Poor social support</td>
</tr>
<tr>
<td>5</td>
<td>Making professional mistakes</td>
</tr>
<tr>
<td>6</td>
<td>Educational debt</td>
</tr>
<tr>
<td>7</td>
<td>Ethical challenges (for example, balancing animal and human interests)</td>
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<tr>
<td>8</td>
<td>Client complaints</td>
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<td>Client expectation of being an expert in all areas of veterinary medicine</td>
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<td>10</td>
<td>Poor treatment by clients</td>
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<td>11</td>
<td>Animal deaths from illness</td>
</tr>
<tr>
<td>12</td>
<td>Animal deaths from euthanasia</td>
</tr>
<tr>
<td>13</td>
<td>Dealing with personal, staff, or client grief</td>
</tr>
<tr>
<td>14</td>
<td>Pressure from veterinarians or practice management</td>
</tr>
<tr>
<td>15</td>
<td>Poor treatment by veterinarians or practice management</td>
</tr>
<tr>
<td>16</td>
<td>Other</td>
</tr>
</tbody>
</table>
Appendix B: Initial Email Sent to Nevada VTs

SUBJECT LINE: Invitation to Participate in Online Survey

Dear Nevada Veterinary Technician,

There have been numerous studies about stress and mental health among veterinarians but few efforts to establish such data for licensed veterinary technicians. I am a Veterinary Science student at the University of Nevada, Reno, and I am working on an Honors Senior Thesis with my faculty advisor, Dr. Richard Simmonds. I have developed a survey that will attempt to gather such data from licensed veterinary technicians in Nevada.

While there is no guarantee, Dr. Simmonds has indicated that he anticipates that the data obtained will likely serve as stimulus for a more extensive survey of veterinary technicians that will document the stress and health among veterinary technicians nationally.

Your response is anonymous and no identifying information will be collected about you. The survey should take no more than 10 minutes to complete. Please complete the survey in a timely manner, as it will only be accessible for three weeks.

If you have questions about this e-mail or the survey, please feel free to contact me or Dr. Simmonds.

Your participation in this study will be very much appreciated by both of us – thanks.

You may access the survey by clicking this link.

Regards,

Sylvia Fuchs
Phone: 
E-Mail:

Richard C. Simmonds, D.V.M., M.S., D.A.C.L.A.M.
Phone: 
E-Mail:
Appendix C: Follow-up Email Sent to Nevada VTs

SUBJECT LINE: Reminder to Complete Survey

Dear Nevada Veterinary Technician,

There have been numerous studies about stress and mental health among veterinarians but few efforts to establish such data for licensed veterinary technicians. I am a Veterinary Science student at the University of Nevada, Reno, and I am working on an Honors Senior Thesis with my faculty advisor, Dr. Richard Simmonds. I have developed a survey that will attempt to gather such data from licensed veterinary technicians in Nevada.

While there is no guarantee, Dr. Simmonds has indicated that he anticipates that the data obtained will likely serve as stimulus for a more extensive survey of veterinary technicians that will document the stress and health among veterinary technicians nationally.

Your response is anonymous and no identifying information will be collected about you. The survey should take no more than 10 minutes to complete. Please complete the survey in a timely manner, as it will only be accessible for a week and a half longer.

If you have questions about this e-mail or the survey, please feel free to contact me or Dr. Simmonds.

Your participation in this study will be very much appreciated by both of us – thanks.

You may access the survey by clicking this link.

Regards,

Sylvia Fuchs
Phone:
E-Mail:

Richard C. Simmonds, D.V.M., M.S., D.A.C.L.A.M.
Phone:
E-Mail: