

WHAT THE TECH?: THE EFFECT OF THE COVID-19
PANDEMIC ON VETERINARY TECHNICIANS

by

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ABSTRACT

During the COVID-19 pandemic, the public was encouraged to stay home to reduce spread of the virus. Workers whose jobs could not be conducted from home were classified as “essential” and they were required to continue to report for work in person. Due to stay-at-home orders and feelings of isolation, pet adoption increased, increasing the need for veterinary workers, a profession already in strong demand pre-pandemic. Research has been conducted to assess the effect of the COVID-19 pandemic on essential workers, such as educators and human healthcare workers, but there is a lack of literature on veterinary technicians, who are the animal healthcare equivalent of nurses. Accordingly, the objective of our study was to evaluate how the COVID-19 pandemic affected the professional experiences of veterinary technicians. To achieve this, we distributed an electronic researcher-developed survey-based instrument to veterinary technicians working during in the U.S. during COVID-19. Prior to distribution, we established face validity and reliability of the instrument. After four weeks of data collection, we received 1,132 usable responses. Descriptive statistics were analyzed using SPSS 26.0. Our respondents were overwhelmingly female (97%) and employed as veterinary technicians full time (87%). Most worked in a companion animal practice (61%) located in a suburban area (54%). Our respondents reported the top professional challenge they faced during the pandemic was: 1) being treated worse by pet owners (53%), 2) difficulties communicating with pet owners (16%), or 3) balancing quality and cost of pet care for pet owners (5%). There were an overwhelming number of veterinary

technicians (80%) who had interfaced with pet owners worried about COVID-19 transmitting to their pets. However, as most veterinary practices offer curbside service only during the pandemic, the majority of respondents (67%) either agreed or strongly agreed that not having the pet owner in the room made their job easier. Cumulatively, our data indicate that, while the COVID-19 pandemic has eased the jobs of veterinary technicians in some respects, there are challenges that add to the normal burdens of this career, including interfacing with pet owners and navigating unknown territory educating them on virus transmission to their pets. These findings are timely as veterinary technicians often experience high turnover, compassion fatigue, and burnout due to stress and low compensation. Thus, we bring awareness to this issue and call for further research on how to best support veterinary technicians during and after the COVID-19 pandemic.

I. INTRODUCTION

On December 11th, 2019, the World Health Organization started taking actions to mitigate the spread of the novel coronavirus caused by SARS-CoV-2. By January 21st, 2020, the Centers for Disease Control (CDC) confirmed the first case of Coronavirus disease 2019 (COVID-19), caused by SARS-CoV-2, in the United States and, by mid-March, Americans were given stay-at-home orders to slow the spread of the virus (AJMC, 2021). Within the span of a few days, most professional interactions abruptly halted, moving to remote or online platforms. However, some workers were deemed “essential” and could continue working as long as they followed CDC regulations and advice. Businesses that remained opened took a number of measures: some required masks be worn, others required temperature checks and screenings, and many lowered the maximum capacity of people gathered indoors to adhere to CDC social distancing guidelines. Certain services boomed, such as delivery and curbside services. Further, as a result of more people at home and not engaging in physical social interactions, pet ownership increased (Wall, 2020), causing a spike in new pet owners.

Before COVID-19, veterinary professions were in demand; the 2019-2029 job outlook for veterinary technologists and technicians is 16%, which is much larger than the average for all occupations, 4% (U.S. Bureau of Labor Statistics). COVID-19 likely exacerbated the need for veterinary workers due to the increase in pet ownership. In the veterinary medicine field, technicians are the equivalent of human healthcare nurses. Accordingly, they are often tasked with the “dirty work” (Sanders, 2010), work long hours, experience compassion fatigue (Thompson-Hughes, 2019), and are generally overworked; these factors all contribute to high burnout rate (Kogan et al, 2020).

Although there has been research on the physical and psychological wellbeing of nurses (Xie et al, 2011), little research has been conducted on veterinary technicians. Further, there has been a plethora of research on the impact of COVID-19 on essential workers in education (Rahim et al, 2020) and human healthcare (Halcomb et al, 2020) fields, but there has not yet been an evaluation on veterinary technicians. Accordingly, we conducted a mixed methods survey to assess how the COVID-19 pandemic affected perceptions and experiences of veterinary technicians.

II. REVIEW OF LITERATURE

Quarantining and social distancing during the COVID-19 pandemic proved difficult for many people, whether they were classified as “essential workers” or not. Unemployment and suicide for the general population skyrocketed (Sher, 2020). The pandemic also demanded constant flexibility; essential workers had to adapt to ever-changing policies and procedures as health professionals learned more about the virus and changed guidance. During the pandemic, healthcare workers exhibited more psychopathological symptoms such as severe depression, somatic symptoms, anxiety and insomnia, and social dysfunction, as compared to other professions (Maciaszek et al., 2020). Further, these essential workers were also burdened with the risk of being exposed to COVID-19. During the pandemic, veterinary clinics shifted to curbside services, encouraged clients to receive consultations via telehealth conferences, and/or split teams into shifts to lower the risk of all employees becoming infected with COVID-19 at once (Marino, 2020). Parallel to these operational shifts, there was an increase in owners euthanizing their animals due to financial uncertainty (Marino, 2020), suggesting that veterinary technicians had to more often participate in work tasks that are emotionally taxing as a result of COVID-19.

Even before the COVID-19 pandemic, veterinary technicians had high rates of burnout due to compassion fatigue, long hours, and doing the “dirty work” (Sanders, 2010). The healthcare industry tends to attract compassionate, empathetic people. However, these empathetic people are also those who are most affected by witnessing other beings suffer from disease and death (Sanders, 2010). Many veterinary professionals hold themselves to a high standard, striving to provide the best possible

care, which can prove to be exhausting (Sanders, 2010). Aside from how understaffing and working long hours wears on veterinary technicians, it also results in more errors, such as IV/arterial line errors, delays in drug or treatment administration, and pain/agitation not addressed (Hays et al., 2020). Finally, the lack of upward mobility and low compensation forces many veterinary technicians to eventually pursue other career paths (Thompson-Hughes, 2019), resulting in high turnover for those in veterinary careers.

As there are currently no data available on how the pandemic impacted veterinary technicians, we reviewed the emerging literature on other essential workers, with an emphasis on nurses, as they are the counterpart to veterinary technicians in the human healthcare work and have been the focus of some research effort. There have also been calls to the academic and scientific community to provide heightened support for both the physical and mental health of nurses during COVID-19 (Huang et al., 2020), indicating there are initiatives to support nurses and human healthcare workers during the pandemic.

COVID-19 affected daily operations of hospitals, impacting duties and responsibility of nurses. In Australia, nurses working during the pandemic reported insecurities in employment, including decreased hours and termination, due to the increase in telehealth (Halcomb et al., 2020). They also reported a need to perform duties outside of their normal routines, including cleaning and answering calls. Similarly, in other research focused on nurses in the U.K. (Roberts et al., 2021), 57% experienced a change in their role during the pandemic. Of Australian nurses who continued to perform routine work duties, few of them had prior experience in disaster relief or contact training and felt unprepared (Halcomb et al., 2020).

COVID-19 also impacted demand for and access to personal protection equipment (PPE) as there was a sudden and significant need for the general population to access PPE, such as masks and gloves, typically reserved for the healthcare industry. Australian nurses expressed concern about PPE, as only 27% reported “always” having enough gowns and 23% reported “always” having enough P2/N95 masks available (Halcomb et al., 2020). Access to PPE in the U.K. seemed slightly better than in Australia as only 28% of U.K. nurses were concerned about not having enough PPE during the pandemic. It should be stated, however, that this percent (28%) is still large and underlines a massive disparity between the need for and availability of PPE during COVID-19 to protect the physical health of essential workers while they performed job duties.

At the time of writing (April 2021), the COVID-19 pandemic is ongoing in the U.S. and many other regions in the world, as effective vaccinations have been developed and are being distributed to the general public. Accordingly, long-term impacts of COVID-19 and nurses and other healthcare workers are not yet known. However, emerging data indicates the pandemic negatively affected the short-term physical and mental health of nurses and other healthcare professionals. During COVID-19, healthcare workers exhibited severe depression, anxiety and insomnia, and social dysfunction symptoms at higher rates than other non-medical workers (Maciaszek et al., 2020). Higher anxiety levels are associated with destructive coping mechanisms (such as drugs and alcohol), impairment in bodily functions, stress, depression, and increased suicidal thoughts (Lee et al., 2020). Many of these outcomes have already been observed in healthcare workers as short-term or immediate impacts of the pandemic. Specifically,

nurses in an intensive care unit (ICU) reported COVID-19 caused them to experience indigestion or decreased appetite (59%), fatigue (55%), difficulty sleeping (45%), nervousness (28%), frequent crying (26%), or suicidal thoughts (2%) (Shen et al., 2020). In the U.K., 30% of nurses reported that they could not or had difficulty providing enough support to their household, whether that be food, emotional, or another mechanism or support (Roberts et al., 2021).

A previous review of the literature (Braquehais et al., 2020) suggests several factors influence the extent of the impact of COVID-19 on healthcare workers, such as whether or not they were “front line workers”; if they had witnessed peers become infected with COVID-19; if they had adequate access to PPE; if they were given time and a place to rest; and what resources were provided to support their mental wellbeing (e.g., “psychological health”). Similarly, above cited research documenting an increase in psychopathological symptoms in healthcare versus non-medical professionals indicated gender, age, and access to adequate PPE were significant influencing factors affecting expression of psychopathological conditions. Cumulatively, these data demonstrate that not all healthcare workers had the same experience during COVID-19 with personal and professional factors – including support and resources from family, friends, peers, and place of employment – playing a role in the extent and severity of the pandemic’s impact.

Several potential solutions have been proposed to mitigate or overcome challenges faced by healthcare workers during the COVID-19 pandemic. To address lack of experience in infectious disease, patients can be allocated based on nurse's experience (Shen et al., 2020). To lessen the workload and fatigue, management can adjust schedules ensuring all employees are given equitable and adequate time to rest (Shen et al., 2020).

For those worried about their family and whose family is worried about them, regular video chats with family members and talking to coworkers experiencing similar feelings can help (Shen et al., 2020). Although we are still cataloguing lessons learned and developing “best practices”, it is clear the pandemic affected the health and wellbeing of human healthcare workers, while also shifting their daily duties and responsibilities. As COVID-19 continues to linger, it is important to support these healthcare and other essential workers, providing them the resources they need to maintain some semblance of “normal” in these unprecedented times. We are still unsure what the post-pandemic landscape looks like but, as we learn more about COVID-19 and new variants, it is likely we will never fully return to what we considered “normal” during pre-pandemic life. Accordingly, the support and resources essential workers need will likely continue to be important in years to come.

As mentioned, there is a plethora of literature on human healthcare workers during the pandemic and, to a lesser extent, research on educators. However, these were not the only essential workers serving on the frontlines and it is probable that the experience of nurses and other human healthcare workers were similar, but not identical to other essential workers, such as veterinary technicians. Therefore, it is critical to ensure research is being conducted on all essential workers in a timely fashion to ensure these workers and workforces do not suffer in the short- or long-term as a result of the COVID-19 pandemic.

III. PURPOSE AND OBJECTIVES

The purpose of our study is to address the deficit in research focused on veterinary technicians. Although there is literature about veterinary technicians and their emotional well-being as it relates to professional burnout (Sanders, 2010; Thompson-Hughes, 2019; Kogan et al., 2020) and there is literature about how COVID-19 has changed the way veterinary clinics operate (Marino, 2020), there has not yet been an effort to document how circumstances surrounding the pandemic affected veterinary technicians. Accordingly, the objective of our study was to identify professional challenges and opportunities faced by veterinary technicians during COVID-19.

IV. MATERIALS AND METHODS

This study employed a mixed-methods approach to data collection, facilitated through an electronic survey-based questionnaire. The questionnaire was designed to assess how the COVID-19 pandemic has affected the daily operations and mental health of veterinary technicians. The Texas State University Institutional Review Board approved this research as exempt (#7591) and all participants were provided written informed consent prior to participation. The population of interest was adults in the United States who were employed as veterinary technicians during the COVID-19 pandemic. Using a population of 112,900 veterinary technicians (U.S. Bureau of Labor Statistics), a sample size of 1,073 with a 99.9% confidence level and $\pm 5\%$ confidence interval was calculated.

Our survey was distributed through social media platforms (e.g., Facebook, Reddit) to groups targeted towards veterinary workers. The survey was a researcher-developed instrument that contained three sections. Section 1 consisted of 17 questions including personal and professional demographics. Section 2 was adapted from questions in a previously validated survey instrument “Pandemic Experiences and Perceptions Survey” (Lieter, 2020) and contained 14 questions. Section 3 consisted of four questions related to daily operations of a veterinary clinic, how they have changed during the COVID-19 pandemic, and how this change has affected veterinary technicians. The data presented here are from Sections 1 and 3.

Following the recommendations of Gates et al. (2018) on establishing a face-validated instrument, we identified a panel of experts outside of the research team and participant group. The panel included ten individuals with expertise in survey design

and/or veterinary professions. The panel assessed the questionnaire for face, content, and construct validity. Based on initial panel recommendations, we revised the questionnaire and resubmitted it for further review until the final version was approved.

To establish reliability, the questionnaire was piloted by veterinary technicians who were not part of the research team, participant group, or expert panel. We sent twelve veterinary technicians a link to the survey. Within seven days, we received ten completed questionnaires, yielding a response rate of 83%. Data from the pilot study were coded and entered using the Statistical Package for the Social Sciences (SPSS) 26.0 software. We calculated a Cronbach's alpha reliability coefficient ($\alpha = 0.846$) which, based on interpretations provided by George and Mallery (2003), was *good*.

Our questionnaire was available to participants from February 22nd, 2021 to March 21st, 2021. Ultimately, 1,132 eligible respondents completed at least 88% of the survey. With a response rate exceeding that necessary for our sample, no additional procedures were used to account for non-response error, following recommendations of Lindner et al. (2001).

Using SPSS 26.0, data were analyzed using descriptive statistics and measures of central tendency to report how the COVID-19 pandemic affected veterinary technician perceptions of and experiences during the pandemic. We also reported the how the pandemic affected operational procedures at the clinics veterinary technicians were employed at. Additionally, descriptive statistics were calculated for the demographic characteristics of our participants and their places of employment.

V. RESULTS

We received 1,569 total responses to our survey. Of those responses, 1,426 respondents were at least 18 years of age and had worked as a veterinary technician in the United States during the COVID-19 pandemic and were, thus, eligible. Of those eligible respondents, 1,132 completed at least 88% of the survey and were included in our dataset.

Of our respondents, an overwhelming majority (97.2%) were female and were 18-34 (56.3%) or 35-40 years of age (34%)(**Table 1**). Most of our respondents, 76.4%, were not immune compromised nor living with someone who was immune compromised during the COVID-19 pandemic. A slight majority were graduates of an accredited American Veterinary Medical Association program (59%). Respondents were all working in the United States, by design. Specifically, they were mostly from the West South Central Region (18%) or the South Atlantic and Puerto Rico region (16%); those regions with the least respondents were New England (7%) and the East South Central region (5%).

We asked respondents questions relating to their professional experiences during the COVID-19 pandemic using a 5-point Likert Scale ranging from “Strongly agree” to “Strongly disagree” (**Table 2**). When asked if they had been treated worse by pet owners, 77% of respondents either agreed or strongly agreed. Sixty-seven percent of respondents agreed or strongly agreed that not having the pet owner in the room has made their job easier. A slight majority (55%) of respondents strongly agreed or agreed that the PPE they must wear due to COVID-19 makes their job more difficult. Seventy-five percent of respondents agreed or strongly agreed that it has been more difficult to communicate with

pet owners. Sixty-five percent of respondents agreed or strongly agreed that balancing safety during euthanasia has been more difficult.

When asked about their greatest challenge at the clinic during the COVID-19 pandemic (**Table 3**), 53% of our respondents reported that it was being treated worse by pet owners (53%). Others reported difficulties communicating with pet owners (16%); “other”, which allowed them to respond to an open-ended prompt (15%); balancing pet care and cost (5%); being safe during euthanasia (4%); the PPE making job duties more difficult (4%); pets being more difficult to deal with (2%); and the PPE frightening pets (1%). Although we have not yet coded responses to the response “Other”, it appears that 1) owners would not abide by curbside policies, 2) clinics were understaffed and veterinary technicians were overworked, and 3) ineffective or unempathetic management/leadership were common challenges reported by our respondents.

VI. DISCUSSION

This study sought to explore how veterinary technicians have been affected professionally by the COVID-19 pandemic. Previous research indicates that the main factors contributing to burnout for veterinary technicians are compassion fatigue, lacking a sense of autonomy, excessive workload, and limited resources (Kogan et al., 2020). Further, unlike human medicine, veterinary technicians often find themselves holding a single job title and compensation rate throughout their careers with little room to advance their careers.

Although it is unknown if veterinary practices were actively working to reduce the above cited burnout factors before COVID-19, it is apparent that conditions surrounding the pandemic added another layer of stress on veterinary technicians. Specifically, our data indicate that veterinary technicians had challenges dealing and communicating with pet owners during COVID-19, presumably without first receiving additional training or resources.

During times of acute clinical need, nurses and other health professionals often continue working, deferring grief until after the event has passed; this ultimately heightens their risk of burnout and post-traumatic stress disorder (PTSD) (Mealer et al., 2009). The risk of burnout, PTSD, and compassion fatigue are further compounded by engaging nurses in critical care environments when they are not equipped with critical care training or experience (Vetter et al., 2016). Arguably, the veterinary technicians in our study were not equipped to balance the new professional duties COVID-19 demanded, especially as it relates to customer relationships and communication, while also protecting themselves from the virus and managing their own mental health. Our

survey responses indicate the COVID-19 pandemic placed new and additional pressures on veterinary technicians, workers who already experience high levels of emotional distress and burnout (Kogan et al., 2020). This underlines the need for additional physical and psychological support for veterinary technicians. In a study focused on the resilience of nurses during the pandemic, it was reported that those who perceived higher organizational support were more likely to report lower anxiety related to COVID-19 (Labrague and de Los Santos, 2020). These researchers recommended that nurse managers ensure nurses are given access to psychological treatment; should prioritize self-care among nurses by offering flexible or shorter work hours, adequate breaks, and balanced time scheduling; and provide nurses with complete and quality PPE (Labrague and de Los Santos, 2020). Ultimately, we recommend veterinarians or veterinary technician managers adopt a similar approach to support their technicians during the COVID-19 pandemic, or similar events, with a strong focus on mental and physical health.

Clearly, a common observation in our study was that veterinary technicians were treated worse by pet owners. Many times, veterinary technicians are the liaison between a veterinarian and the pet owner and are, thus, placed in a position to receive blame and not praise. Pet owners may be treating veterinary technicians worse because they are experiencing psychological stress and anxiety surrounding the pandemic themselves or are afraid of the costs of pet care due to the higher rate of unemployment during COVID-19 (US Department of Labor, 2021). During the pandemic, there was concern about the availability of veterinarians; these perceptions of scarcity could have caused pet owners to lash out and become more irritated during their appointment or communication with

veterinary technicians (Kogan et al, 2021). Further, since many veterinary practices used curbside services and did not allow non-employees in the building during COVID-19, pet owners were likely unable to be in the room with their pet during their care and this may have caused distress or heightened anxiety, especially if the outcome was fatal.

During a pandemic or not, it is vital that all essential workers be given the tools they need to fulfill their professional obligations without negatively affecting their physical or mental health. For veterinary medicine, it is imperative that veterinarian or veterinary technician managers are aware of the burnout symptoms plaguing veterinary technicians and take measures to prevent it or run interference when a pet owner is treating a technician unfairly or poorly. Healthcare workers in the human and animal fields should be trained to identify signs of emotional distress in themselves and their coworkers and peer support group should be established. Finally, pet owners should recognize the veterinary workers tasked with their pet’s care are compassionate, caring people who are juggling their own personal and professional challenges during COVID-19; accordingly, empathy should be practiced.

Table 1. Demographics of survey respondents		
	Frequency	Percent
Gender		
Female	1,096	97%
Male	29	3%
Graduated from an AVMA program		
Yes	674	59%
No	458	41%
Age range		
18-34	637	56%
35-50	388	34%
50+	107	10%

Immune compromised		
Yes	267	24%
No	864	76%
Residency region in the U.S.*		
Pacific	133	12%
Mountain	83	8%
West North Central	92	8%
East North Central	163	14%
West South Central	203	18%
East South Central	53	5%
South Atlantic and Puerto Rico	180	16%
Middle Atlantic	139	12%
New England	72	7%
*As defined by the U.S. Census Bureau		

Table 2. Experiences of veterinary technicians during COVID-19						
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
I have been treated worse by pet owners	43%	34%	16%	5%	2%	100%
Not having the pet owner in the room has made my job easier	32%	35%	20%	10%	3%	100%
The personal protection equipment (PPE) I have to wear makes some job duties more difficult	15%	40%	19%	20%	6%	100%

It has been more difficult to communicate with pet owners	30%	45%	14%	10%	1%	100%
Balancing safety during euthanasia has been more difficult	28%	37%	16%	15%	4%	100%

Table 3. The biggest challenge faced by veterinary technicians during COVID-19		
	Frequency	Percent
Being treated worse by pet owners	539	53%
Difficulties communicating with owner	160	16%
Other*	154	15%
Balancing pet care and cost	50	5%
Being safe during euthanasia	43	4%
The PPE making job duties more difficult	39	4%
Pets being more difficult to deal with	16	2%
The PPE frightening pets	11	1%
	1,012	100%
*“Other” was an open-ended question and answers varied but common themes identified were: 1) owners would not abide by curbside policies, 2) clinics were understaffed and veterinary technicians were overworked, and 3) ineffective or unempathetic management/leadership		

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