AAVMC CLINICIAN WELLBEING INITIATIVE: VETERINARY INTERN & RESIDENT WELLBEING STUDY I

December 2020

Veterinary interns and residents, collectively referred to as house officers, are generally new graduates or early career professionals employed in specialty or referral practice settings for the purpose of receiving additional clinical training. Interns and specialty interns are generally seeking additional experience beyond their veterinary training to gain additional experience, improve their candidacy or wages for a desired future position, and/or to improve their candidacy for residency training. Residents are trainees participating in a structured program that will lead to board certification in a recognized specialty. Because they are generally trained by a small number of specialists or clinicians, they are susceptible to workplace power dynamics and generally have limited professional and personal autonomy. Historically long work hours and sometimes the need to move far distances to unfamiliar locations can make it more difficult for house officers to access mental health resources, engage in adequate self-care, and enjoy social support.

Current wellbeing intervention approaches within veterinary medicine commonly focus on individual behavioral care, less often considering how social, economic, and professional environments affect both the health of individuals and their and their access to treatment. A systematic review of the literature within veterinary medical education that focused on interventions meant to improve the mental health of US and international veterinary students showed that only seven studies were eligible for appraisal, with only three recommended for potential exploration[3]. Of these, a lack of controls, selection bias, and small sample sizes limited the confidence in whether these interventions truly caused mental health improvements and if inferences could be made to a larger population[3]. All studies eligible for review consisted of individual, micro-level interventions that focused on increasing mental health awareness for students, brief education about mental health issues, and teaching self-care strategies[3].

In human medicine, organization-based interventions have shown to be more effective in reducing clinician burnout than interventions targeted at individual clinicians[11]. Human medicine interns and residents have also been shown to have an increased prevalence of anxiety, depression, and suicide at rates higher than the general population[1]. In addition to the significant individual impacts of poor mental health and wellbeing, this impacts clinician retention, staffing, case flow, and, ultimately, patient outcomes[2]. While human medicine has a sizable body of research that highlights the need to improve the wellbeing of their trainee populations[1], veterinary medicine has limited published research that exclusively explores issues related to house officer physical, mental, and professional wellbeing[12].

The focus of the AAVMC Clinician Wellbeing Initiative is to better understand the physical, mental, and professional wellbeing of specific veterinary profession populations in the context of individual and organizational factors with the ultimate aim of assisting academic institutions and training programs with targeted recommendations for organizational change to improve clinician wellbeing, retention, and occupational satisfaction. The following is an overview of the data from the AAVMC's Clinician Wellbeing Initiative, the first phase of which focuses on veterinary interns and residents. The AAVMC plans to conduct this large-scale wellbeing survey for interns and residents every few years to develop longitudinal national data for the academic veterinary profession. Zoetis Pet Care, a corporate entity for the veterinary industry, is the sponsor of this project.

METHODS

Survey

A cloud-based survey[d] was administered to interns and residents in US veterinary colleges, private practices, and corporate practices, opening on December 9, 2020, and closing on January 5, 2021.

The survey collected demographic data, including race and ethnicity, sexuality, religion and spirituality, marital status, age, and gender. Respondents also indicated program type (internship or residency) and, where applicable, specialty area. Novel survey items were developed to measure days off in the last month, hours slept in the last 48 hours, physical wellbeing, access to programmatic mental health resources, and stressful life events (modified from Sen et al.[b]). Six items associated with physical wellbeing were scored on a one to five Likert scale, resulting in aggregate scores ranging from six (lower physical wellbeing) to 30 (higher physical wellbeing). Similarly, the four items focused on access to programmatic mental health resources, resulted in aggregate scores ranging from 4 (poorer access) to 20 (better access). The item evaluating stressful life events allowed respondents to select any of 11 events that applied, with results simply summed for each individual and compared across groups. Note that respondents were asked to only select events that occurred while in their training program. Additionally, nine questions were asked to assess workload that employed a one to five Likert scale, resulting in aggregate scores ranging from 9 to 45, with 45 being most satisfied, and six questions to assess the learning environment resulting in aggregate scores of 6 to 30, with 30 being most satisfied.

The questionnaire also included six validated instruments to assess resident and intern wellbeing, including the Patient Health Questionnaire-9 (PHQ-9[4]), the Primary Care Posttraumatic Stress Disorder instrument (PC-PTSD-5[5]), the Columbia-Suicide Severity Rating Scale (C-SSRS[6]), two abbreviated Maslach Burnout Inventory metrics (aMBI for emotional exhaustion and depersonalization[7]), and the Multidimensional Scale of Perceived Social Support (MSPSS[8]).

Validated instruments were administered and scored as described in their respective references with the exception of the aMBI. In this case, the abbreviated version of the Maslach Burnout Inventory included one question relevant to the emotional exhaustion subcategory ("I feel emotionally drained from my work"), and one question relevant to the depersonalization subcategory ("I' have become more callous toward people since I took this job?"), analogous to other work[9]. These questions were scored on a Likert scale from 0 – 6, and then multiplied by nine (emotional exhaustion), and six (depersonalization), respectively to generate comparable scales of 0 – 54, and 0 – 30, respectively.

The two MBI subcategories of emotional exhaustion and depersonalization were assessed categorically as opposed to continuous variables.

Racial demographics data from respondents who identified as Black, Asian, American Indian/Native Alaskan, Native Hawaiian/Pacific Islander, Hispanic/Latinx, or "racial or ethnic group not listed here" were collapsed into one non-White/Caucasian category due to limited sample size. Analogous collapses were performed for sexuality, religion and spirituality, and marital status. Age was condensed into two groups, participants who were 30 and younger, and participants who were 31 and older. Data collected from male and female respondents were analyzed, but not data from those identifying as transgender or a non-binary gender due to limited sample size.

Quantitative analyses

Analyses were conducted using SPSS[c]. We compared overall differences in intern and resident responses and those of different demographic groups using Pearson chi-square tests. Differences in responses were considered valid if 80% or more cells had an expected value greater than 5. We also used Pearson chi-square tests to compare intern and resident responses by different practice types (veterinary colleges versus private and corporate practices combined), with the exception of days off (in the last month), and hours slept (in the last 48 hours) when one-way ANOVA tests were conducted along with Tukey's post-hoc tests for comparisons. When a group sample size did not exceed 5% of the population, those groups were not considered separately for comparisons. Mean values for the metrics used are presented along with their standard deviations as (mean ± standard deviation) throughout.

Qualitative analyses

The survey included three open-ended questions that yielded a total of 728 individual comments from respondents. All comments were downloaded and analyzed using a phenomenological approach. All comments were initially read for clarity and understanding. Two additional comment reviews were conducted; during these reviews manual in vivo coding was used to identify statements of meaning[10]. The resulting codes were subsequently organized into themes.

Respondents

There were 473 respondents to the survey, representing approximately 25% of the total current intern/resident population. Survey respondents from veterinary colleges included 86 interns (57.3% response rate), and 275 residents (85.1% response rate). Corporate and private practices were represented by 64 interns (42.7% response rate), and 48

residents (14.9% response rate). To determine the potential pool of respondents by specialty, data from the web-based Veterinary Internship and Residency Matching Programa were compared across years. Response rates for interns by specialty were compared with the 2020 match data. Response rates for residents were compared to match data from 2017-2020 due to the longer duration of residency programs. VIRMP resident match data did not include information for the pathology/clinical pathology specialty and poultry medicine specialties. Additionally, ophthalmology data for residents was only available during 2020 and 2018. Behavior specialty data for residents was only available in 2020 and 2019. Avian medicine data was not available for 2019.

KEY INSIGHTS

In essentially all metrics evaluated, there were indications that a proportion of intern and resident respondents felt they were experiencing difficulties, challenges, and/or limitations in their lives/workplace. Several indicators showed relatively large portions of respondents expressing concerns about aspects of their physical wellbeing, mental health, access to mental health resources, workload demands, limited support services/staff, and their learning environments. Overall, approximately 85% of respondents reported experiencing depressive symptoms within the past 2 weeks, with 54% of respondents screening positive for moderate-to-severe depression at the time of the survey. More than half of those surveyed reported feeling emotionally drained from work a few times a week or every day. Nearly 30% of respondents were experiencing post-traumatic stress disorder symptoms, and 30% reported having some measure of suicidal ideation (predominantly low severity) over the past two weeks.

Respondents who reported higher overall satisfaction in their programs indicated that their programs had characteristics such as quality mentoring, structured scheduling and protected time off, a dedication to teaching, supportive workplace culture, adequate staffing, accessible mental health and wellbeing supports, and affirming, professional feedback. Respondents who reported lower satisfaction in their program indicated that their programs had characteristics such as poor communication, a lack of structured learning opportunities, unprofessional workplace culture, unsuitable workloads/hours/scheduling, a lack of psycho-social support, poor mentorship, and inconsistencies within the program experience.

While there were few statically significant differences observed between intern specialties due to limited specialty size, there were several resident specialties that differed from others. Residents in radiation oncology and diagnostic imaging had more desirable scores in 8 different categories compared to residents in all other specialties, and residents in pathology and clinical pathology also had more desirable scores in 4 different categories compared to residents in all other specialties. Residents in emergency medicine and critical care had less desirable scores in 6 different categories compared to residents in all other specialties. Residents in small and large animal surgery were collapsed into one group due to sample size and had less desirable scores in 3 different categories compared to residents in all other specialties.

There were differences when comparing respondents from veterinary colleges versus those from private and corporate practices. Interns and residents in programs located at private and corporate practices received more days off and slept more hours compared to veterinary colleges. Interns in programs at private (and corporate?) practices had less severe depression scores than interns located at veterinary colleges, and also higher learning environment satisfaction.

Overall, male (versus female) respondents had more desirable scores for physical wellbeing, depression, access to mental health resources, burnout (emotional exhaustion and depersonalization), and workload satisfaction. Single respondents (versus not single) had less desirable scores for depression, social supports, and emotional exhaustion. Respondents with one or more disabilities (versus those without disabilities) had less desirable scores for depression, post-traumatic stress disorder, and depersonalization.

SUMMARY OF FINDINGS

Demographics

Respondents were largely white/Caucasian women between the ages of 27 to 34 (Table 1). Women represented 79.1% of respondents. Of female respondents, 8.6% identified as bisexual and 4.3% identified as a sexuality other than bisexual or heterosexual. Less than 20% (18.8%) of respondents were male, and of those, 22.5% identified as gay and 4.5 identified as a sexuality other than gay or heterosexual. There were no significant differences in the metrics assessed between white and non-white respondents, so these categories were not used in further subgroup analysis.

There were four groups large enough for comparison between veterinary internship specialties: 1) emergency medicine and critical care, 2) exotics, wildlife, and zoos, 3) rotating small and large animal medicine, and 4) small and large animal surgery. There were no significant differences in the metrics assessed between interns in all other specialties and interns in small and large animal surgery, so these specialties were excluded from further subgroup analysis. There were seven groups large enough for comparison between veterinary resident specialties: 1) emergency medicine and critical care, 2) small and large animal surgery, 3) oncology, 4) radiation and diagnostic imaging, 5) pathology and clinical pathology,

6) ophthalmology, and 7) small and large animal medicine. There were no significant differences in the metrics assessed between residents in all other specialties and residents in ophthalmology and small and large animal medicine, so these specialties were excluded from further subgroup analysis.

Days off & Hours slept

There were no significant differences in days off over the past month between interns and residents, or any of the more specific demographic groups considered. However, respondents in programs at private and corporate practices had significantly more days off (7.8 ± 4.1 days and 8.4 ± 3.1 days, respectively) than those in programs at veterinary colleges (5.8 ± 2.9 days). Overall, there was a significant difference in hours slept over the past 48 hours between interns and residents, with interns reporting more sleep (12.2 ± 7.0 hours) than residents (10.4 ± 6.4 hours). Within demographic groups, there were no significant differences in sleep. Respondents employed by private and corporate practices received significantly more hours of sleep (13.0 ± 3.1 hours and 14.2 ± 2.3 hours, respectively) than those employed by veterinary colleges (10.1 ± 5.4 hours, n = 284) in the past 48 hours (Figure 1).

Physical wellbeing

Overall, high numbers of respondents disagreed or strongly disagreed that they could fit exercise into their schedules (60%, n = 268/447), that they were able to have balanced nutrition (45%, n = 201/447), or that they were comfortable taking a sick day (77%, n = 345/447) (Table 2). Nearly half of respondents reported a lack of a designated break room being available to them. Approximately 30% (n = 134/447) disagreed or strongly disagreed that their physical needs/limitations were considered in the workplace and that accommodations were offered (Table 2). Finally, 58.2% of respondents (n = 260/447) reported having physical ailments that they had been putting off addressing until their program schedule is less busy (Table 2). Overall, there was no significant difference between intern and resident responses to physical wellbeing questions, but male respondents reported significantly higher physical wellbeing scores when compared to female respondents (Table 3). There were no other significant differences observed in physical wellbeing scores among other demographic groups, when comparing responses from veterinary colleges versus the combination of private and corporate practice respondents, or between intern specialties (Tables 3, 4, 5). Residents in emergency medicine and critical care and in small and large animal surgery reported lower physical wellbeing scores compared to residents in all other specialties (Table 6). In contrast, residents in radiation and diagnostic imaging and pathology and clinical pathology reported higher physical wellbeing scores relative to residents in all other specialties of residents (Table 6).

Depression

The PHQ-9 Depression Severity Scale ranges from 0 to 27 (0-4 none, 5-9 mild, 10-14 moderate, 15-19 moderately severe, 20-27 severe), and the prevalence of moderate-to-severe depression was determined by the percentage of respondents whose PHQ-9 scores were 10 or above4. Overall, approximately 85.2% of respondents (n = 381/448) reported experiencing depressive symptoms within the past 2 weeks, and more than half (54%, n = 241/448) of respondents screened positive for moderate-to-severe depression. Interns had a higher depression mean score of 12.2, while residents had a mean score of 11.1, resulting in an overall mean depression score of 11.5 (Table 7).

Female respondents reported significantly more severe depression scores than male respondents, single respondents had significantly more severe depression scores than those in a relationship, and respondents with one or more disabilities had significantly more severe depression scores than those without disabilities (Table 3). Interns in programs at private practices had less severe depression scores than interns located at veterinary colleges, with a mean depression score of 9.1 in private practice versus 13.7 in veterinary colleges. Residents in radiation and diagnostic imaging had significantly lower depression scores relative to residents in all other subspecialties (Table 6).

Episodes of Depression

Having experienced one or more episodes of depression at some point throughout their lives was reported by 77% of respondents (n = 345/448) at various life stages, with these experiences occurring most frequently during college, veterinary school, and during residency/internship (Table 8). 80.6% of those respondents (n = 278/345) reported experiencing an episode of depression while in their residency/internship program. When only a single lifetime episode of depression was experienced by respondents (n = 99), 66.7% of those respondents reported that it occurred during their residency/internship program (Table 8).

Stressful life events

Many of those surveyed (n = 281) reported experiencing two or more stressful life events while in their program, including problems with debt (51.6%), death of a loved one (43.4%), or a disabling illness or injury of a loved one (31.7%). Less commonly reported stressful events included the end of an intimate relationship (16.7%), a disabling illness or injury (11.7%), marriage (10.7%), significant financial loss (8.2%), learned they or their partner was pregnant (5.7%), had a child (3.6%), involved in a violent relationship (1.1%), and assault or attack (0.7%). Residents reported significantly more stressful life events since beginning their program compared to interns surveyed, though this may be attributable to the longer duration of residency programs. No significant differences were observed in stressful life event scores among the different demographic groups considered (Table 3).

Post-Traumatic Stress Disorder

The PC-PTSD-5 ranges on an inverse scale from 5 (most severe) to 10 (least severe). Almost a third of respondents (30.8%, n = 136) reported witnessing a traumatic event during their internship or residency. Of this group, there was an average post-traumatic stress disorder (PTSD) score of 7.1. There were no statistically significant differences in PTSD scores between interns and residents surveyed. Respondents with one or more disabilities had more severe PTSD scores compared to those without disabilities (Table 3). There were no significant differences observed in PTSD scores based on respondents' employment setting (Table 4), or between intern specialties (Table 5). Residents in emergency medicine and critical care had significantly more severe PTSD scores compared to residents in all other specialties, while in contrast residents in radiation and diagnostic imaging had significantly less severe PTSD scores relative to residents in all other specialties (Table 6).

Suicide Severity

The C-SSRS ranges on an inverse scale from 5 (most severe) to 10 (least severe). 29.7% (n = 130/440) of respondents reported having suicidal thoughts or ideation over the past two weeks, with the mean severity score being 8.5. Respondents that identified as heterosexual had less severe suicide severity scores than those who identified as non-heterosexual (Table 3). There were no significant differences in suicide severity scores between interns and residents, respondents at veterinary colleges versus private and corporate practices, or between specialties (Tables 3, 4, 5, and 6).

Perceived Social Supports

We evaluated overall perceived social support scores related to three categories; family, friends, and significant others (aggregate scores ranging from 12 to 84) and found no significant difference between interns and residents (Table 3). Results indicated that respondents identifying as single perceived less overall social supports (n = 295) relative to those who identified as not single (n = 146) (Table 3). Respondents who identified as non-heterosexual perceived lower levels of "family" support. There were no significant differences in overall social support scores between interns and residents, those in veterinary colleges versus private and corporate practice, or between specialties (Tables 4, 5 and 6).

Access to mental health resources

Only one-third of respondents indicated that their program offered adequate mental health care support services (35%, n = 151/434) or that they felt comfortable accessing the mental healthcare and support services available (33.6%, n = 146/434) (Table 9). Nearly 55% of respondents (n = 238/434) disagreed or strongly disagreed with the statement that they and others were given the time/flexibility to attend mental health appointments without judgement. Nearly 30% (n = 130/434) reported that they disagreed or strongly disagreed that, if needed, they would be able to see a mental health professional within 5 business days (Table 9).

There was no significant difference in access to mental health resources between interns and residents, but there was a significant difference in access between male and female respondents, with male respondents more likely to agree that resources and supports are both adequate and accessible than female respondents (Table 3). There were no significant differences in access to mental health resources when comparing respondents employed by veterinary colleges to the combined private and corporate practice respondents. Residents in emergency medicine and critical care (n = 53) and in small and large animal surgery (n = 42) had significantly lower access to mental health resource scores relative to all other resident specialties (Table 6). Conversely, residents in radiation and diagnostic imaging (n = 28) and in pathology and clinical pathology (n = 21) had significantly higher access to mental health resource scores relative to all other resident specialties (Table 6).

Burnout - emotional exhaustion

The aMBI emotional exhaustion subcategory was represented with the question ("I feel emotionally drained from my work") and scaled to range from 0 to 54 for comparison to other studies. 59.5% of those surveyed (n = 244/410) reported feeling emotionally drained from work a few times a week or every day. Responses were not significantly different between interns and residents, but male respondents had significantly lower emotional exhaustion scores relative to female respondents, and single respondents had significantly higher emotional exhaustion scores than non-single respondents (Table 3). There was no difference in emotional exhaustion scores between respondents employed by veterinary colleges compared to the combined private and corporate practice respondents. Interns in rotating small and large animal medicine (n = 85) had significantly higher emotional exhaustion scores compared to interns in all other specialties (Table 5). Residents in emergency medicine and critical care (n = 44) had significantly higher emotional exhaustion scores compared to residents in all other specialties, whereas residents in radiation and diagnostic imaging (n =24) had significantly lower emotional exhaustion scores compared to residents in all other specialties (Table 6).

Burnout - depersonalization

The aMBI depersonalization subcategory was represented with the question ("I have become more callous toward people since I took this job?") and scaled to range from 0 to 30 for comparison to other studies. There was no significant difference in this metric between interns and residents, but male respondents had significantly lower depersonalization scores relative to female respondents, and those with one or more disabilities had higher depersonalization aMBI scores compared to those without disabilities (Table 3). There was no difference in depersonalization scores when comparing responses from those in veterinary colleges versus the combination of private and corporate practice respondents or between internship specialties. Residents in emergency medicine and critical care (n = 44) had significantly higher depersonalization scores compared to residents in all other specialties, and conversely, residents in pathology and clinical pathology (n = 16) had significantly lower depersonalization scores compared to residents in all other specialties (Table 6).

Workload satisfaction

The majority of the approximately 400 respondents disagreed or disagreed strongly with statements indicating that time demands were reasonable (51.7%, n = 209), after-hours support services were sufficient (64.2%, n = 260), and that there were enough programmatic faculty/clinical and staffing support (53.4%, n = 217) (Table 10). However, 55.6% (n = 226) of those surveyed agreed or strongly agreed that their resident/internship was worth the financial constraints, 76.1% (n = 306) agreed that they had an appropriate degree of patient care responsibilities, and 53.4% (n = 216) disagreed to strongly disagreed that there was enough faculty/clinical and staff support provided by their program (Table 10). 39.9% (n = 182/456) responded that they were concerned that they made a major medical error within the last three months, and of those respondents 61% were residents and 39% were interns. 72.5% of these residents and interns were in programs at veterinary colleges.

Overall workload satisfaction scores were measured on an aggregate scale from 9 (least satisfied) to 45 (most satisfied) with 45 being most satisfied. There was no significant difference in workload satisfaction between interns and residents, but male respondents had significantly higher workload satisfaction scores compared to female respondents (Table 3). There was no significant difference in workload satisfaction scores between those employed by veterinary colleges versus the combination of private and corporate practice respondents or between internship specialties. Residents in emergency medicine and critical care (n = 44) had significantly lower workload satisfaction scores compared to residents in all other specialties, but residents in radiation and diagnostic imaging (n = 24) and in pathology and clinical pathology (n = 17) had significantly higher workload satisfaction scores compared separately to residents in all other resident specialties (Table 6).

Learning environment satisfaction

Of the approximate 406 intern and resident respondents, 41.9 % (n = 170) agreed or agreed strongly that they received timely and appropriate feedback from their faculty/clinical supervisors and 38.2% (n = 155) disagreed or disagreed strongly (Table 11). Additionally, 69.5% (n = 281) of respondents reported that intern/resident position(s) appeared to fill long-standing staffing gaps at the institution (Table 11). There were also indications that some felt their programs/institutions were lacking aspects of adequate internal communications, recognition, and institutional supports to address workplace conflict (Table 11). However, 70% (n = 284) agreed to strongly agreed that full-time faculty members positively contributed to a great extent of the teaching they received, and 60% (n = 241) agreed to strongly agreed that supervisors and administrators were supportive when respondents felt that clients were being difficult or abusive (Table 11).

Overall learning environment satisfaction scores were measured on an aggregate scale from 9 (least satisfied) to 45 (most satisfied). There was no difference in learning environment satisfaction between interns and residents. Respondents that were under the age of 30 (n = 196) had significantly higher learning environment satisfaction scores

when compared to respondents over 30 (n = 204) (Table 3). Residents in small and large animal surgery (n = 42) had significantly lower learning environment satisfaction scores when compared to residents in all other specialties, but residents in oncology and radiation and diagnostic imaging both separately had significantly higher learning environment satisfaction scores when compared to residents in all other specialties (Table 6).

Qualitative responses

Qualitative analysis of the three open-ended questions revealed common themes among programs where respondents reported higher satisfaction with scores associated with workload and program learning environment. Respondents indicated that these programs had; 1) quality mentoring, 2) dedicated/ structured rounds, 3) dedication to teaching/ learning (didactic learning opportunities), 4) supportive workplace culture (unsupportive of hazing practices), 5) capped hours and scheduled/respected days off, 6) adequate staffing, 7) accessible mental health and wellbeing support, 8) limitations on late hours and on-call hours, 9) affirming, professional feedback, and 10) professional autonomy. Respondents from these programs contributed comments such as these:

- "[Clinicians] in my program never blame anyone for mistakes, give immediate constructive and/ or positive feedback, individualize the mentorship, and are always trying to make it a learning experience... instead of learning being secondary."
- "We [interns] are scheduled for a max 50 hrs/week (usually work 40) and can work more if we choose… this allows for work/life/decompressing."
- "[We receive] defined structure in rounds, mock exams, and study material. We're provided a basic outline of every piece of literature we need to know and organize this from the beginning of residency into a study schedule."
- "Residents are NOT essential for [the service] to function. I can take a day off without leaving the team short-staffed. This is very unique in a program."
- "The in-house [mental health professionals] are absolute life savers with clients/helping with their grief so that I don't have to give so much of myself to the clients and can focus on my clinical work."
- "At my facility, residents only work 4-5 days/week which helps my wellbeing tremendously. I get a consistent weekly study day and one day for "me time."
- "Clinicians talk openly about the mental health care they seek/use, which lessens the stigma for residents/ students seeking care. We are encouraged to work from home when possible - it has allowed residents to see that much of our jobs can be performed at home."

There were also themes that were common among programs where respondents reported lower satisfaction with their workload and learning environments. Respondents indicated that these programs had; 1) abusive communication styles, 2) no educational opportunities, 3) a lack of structured learning opportunities, 4) unprofessional workplace culture (lack of compassion or empathy and prioritizing money over people), 5) no limits on work hours (unsuitable overtime pay), 6) inadequate staffing, 7) a lack of psycho-social support, 7) a lack of boundaries during time-off, 8) little to no mentorship, and 9) inconsistencies within the program experience. Respondents from these programs contributed comments such as these:

- "We get a very limited number of PTO days (6 days/year)."
- "We are here to learn, not to be poorly paid workhorses for an understaffed University."
- "Being expected to call or text clients from my personal cell phone results in a significant amount of after-hours communication during my "off time."
- "I can't get any time off for mental health and would feel like I was causing problems at the hospital even if I did."
- "We barely have time to eat, drink, or use the restroom. Meanwhile we get emails telling us to support student lunch breaks, but they skim right over everyone else. It's insulting."
- "I am on-call and expected to be within 30 minutes of the hospital 24/7, 365 days a year."
- "I try to be kind, helpful, and compassionate with my co-workers, but this is not modeled by faculty."
- "I'm always told to 'take care of myself' but never have an advance schedule and I'm always on-call. I can't schedule a dentist appointment with confidence that I'll show up, let alone a therapy appointment."
- "Faculty need to stop saying 'our residency was like that,' or 'we had to work this much' as a justification for how horrible the program is."
- "We are paid less than McDonald's employees/less than the recommended minimum wage for our state while working these hours. I cannot pay my bills and am in so much credit card debt I worry I will never be financially stable no matter how much I make once I am done."
- "We cannot seem stressed - we are shamed when we seem sad. I was told to smile more and not "seem so down" on my last review."
- "Every mistake we make, no matter how small, shows up in rude comments, passive aggressive emails, or our official reviews."

LIMITATIONS

This study was conducted in the United States during the COVID-19 pandemic in December 2020, and therefore some assessment outcomes (such as depression, suicide severity, and perceived social supports) could be impacted as a result. Although this could be viewed as a limitation of this study, it is also a strength in that future comparisons to this time period will be possible as more longitudinal data are collected. The survey was lengthy, taking approximately 25 mins to complete, and researchers did notice attrition in the responses of the participants as the survey went on which impacted the sample sizes of later questions. To address this, adjustments in length of survey will be made to future iterations of the survey instrument. Lastly, the findings may be shaped by responder bias, meaning that residents and interns who are experiencing heightened stress and/or other emotional, behavioral or health stressors during their training may be more motivated to participate in a survey on wellbeing.

ORGANIZATIONAL RECOMMENDATIONS & CONCLUSION

With 54% of veterinary interns and residents screening positive for moderate to severe depression, addressing the needs for this population is a priority within veterinary medicine. The wellbeing-related data collected, the workplace power dynamics that greatly impact intern and resident professional and personal autonomy, and their limited access to adequate mental health resources, have all highlighted the systemic issues that negatively impact this population's physical, mental, and occupational wellbeing. A major source of house officer distress appears to be related to environmental factors that amplify mental and physical health concerns and ultimately impact professional training satisfaction. Generally, current wellbeing intervention approaches within veterinary medicine focus on individual behavioral care, and do not consider how the social, economic, and professional environments can affect the health and wellbeing of populations within the profession or their access to mental health treatment.

Organization-based interventions are more effective in reducing clinician burnout than interventions targeted at individual clinicians[11]. The AAVMC proposes institutions develop organizational-level interventions that diminish or eliminate the root causes of health inequities and supports upstream interventions that focus on prevention to eradicate the health gaps that exist for veterinary interns and residents and the entire clinical care team. Organizational leaders should prioritize and provide sustained support for wellbeing initiatives to foster a culture within the profession that is conducive to personal and organizational wellbeing efforts. Wellbeing-related programs and/or events that enhance fulfillment and mitigate burnout should be customized to career phase, specialty, and practice setting[13]. Based on the data, potential target interventions that organizations should consider in their efforts to support the wellbeing of veterinary interns and residents fall into four categories: 1) addressing organizational culture, 2) promoting and allowing for health and wellbeing, 3) aligning supporting policies and systems, and 4) enhancing mentorship.

In conclusion, building a thriving profession requires continually exploring and evaluating every aspect of how veterinary professionals are trained and developed during their education and beyond. Leaders intentionally examining and altering the cultural and training environment for interns and residents to positively impact their wellbeing will direct how they view the profession and themselves as they progress throughout their careers. The interns and residents our colleges of veterinary medicine and other clinical programs train today will be the compassionate faculty and leaders of veterinary medicine in the future.

Please see the AAVMC Guidelines for Intern & Resident Wellbeing (2022) for detailed guidelines and resources for supporting intern and resident wellbeing.

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FOOTNOTES

[a] Veterinary Internship and Residency Matching Program data. Available at: https://virmp.org/Statistics. Accessed May 30, 2021.

[b] Sen et al. The Sen Lab, Collaboration, Intern Health Study Data, Survey Data Dictionary. Available at: https://www.srijan-sen-lab.com/collaboration. Accessed May 30, 2021.

[c] IBM Corp. Released 2020. IBM SPSS Statistics for Windows, Version 27.0. Armonk, NY: IBM Corp.

[d] Qualtrics Footnote: The data analysis for this paper was generated using Qualtrics software, Version 2020 of Qualtrics. Copyright © 2021 , Provo, UT, USA. https://www.qualtrics.com available at https://www.qualtrics.com/blog/citing-qualtrics/

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FIGURE LEGENDS

Figure 1.

Means and standard deviations (error bars) of respondent days off (in the last month), and hours slept (in the previous 48 hours). Days off are blue bars and written in blue text corresponding to the primary y-axis. Hours slept are orange bars and written in orange text corresponding to the secondary y-axis. Sample sizes are parenthetically in black within each bar.

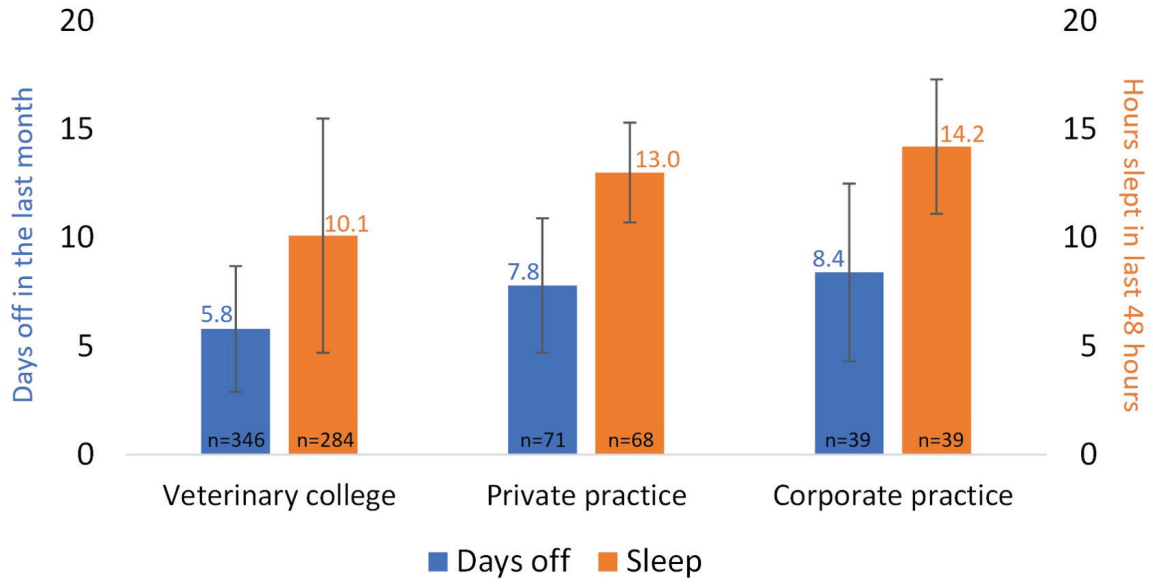

Table 1.

Survey respondent demographics. Percentages of respondents (n = 473) are categorized by gender expression, age ranges, and Race.

Respondent demographics (n = 473)	
Gender Expression	**Percentage**
Female	79.1%
Male	18.8%
Non-binary/gender not listed	0.4%
Decline to answer	1.7%
Age	**Percentage**
Below 27	10.7%
Ages 27-30	61.0%
Ages 31-34	21.2%
Above 34	7.1%
Race	**Percentage**
White/Caucasian (inclusive of Middle Eastern ethnicities)	82.3%
A race other than white/Caucasian*	14.4%
Decline to say	3.2%

Table 2.

Overall intern and resident survey responses to physical wellbeing questionnaire. Percentages of respondents (n = 447) that strongly disagreed, disagreed, felt neutral about, agreed or strongly agreed with each statement are provided. Physical wellbeing scores (see Table 3) were calculated using the first six of these questions.

Physical wellbeing (n = 447)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I can fit exercise into my schedule	22.8%	40.0%	9.2%	23.5%	4.5%
I can get balanced nutrition	14.8%	30.2%	21.7%	29.8%	3.6%
I feel comfortable taking a sick day	44.7%	32.4%	9.8%	9.2%	3.8%
I feel that my physical needs/limitations are considered in the workplace and accommodations offered	11.0%	18.1%	39.4%	26.0%	5.6%
There is a designated break room available	28.4%	18.3%	14.8%	31.3%	11.2%
I am satisfied with the general health and safety practices implemented by my program	7.2%	14.3%	26.8%	43.6%	8.1%
I have physical ailments that I have been putting off addressing until my program schedule is less busy	12.1%	18.8%	11.0%	37.8%	20.4%

Table 3.

Overall intern and resident comparisons and demographic groups. Means and standard deviations are provided for each metric followed by respective sample sizes and p-values. All tests conducted were Student's t-tests with the exception of those containing a parenthetical uv (unequal variance) which were conducted using a Welch's t-test. Significant test results are highlighted in orange.

Attributes	Residents	Interns	Hetero	Non-hetero	Male	Female	Single	Not single	Religious	Non-religious	30, under	Over 30	Disability	No disability
Physical wellbeing					18.1 ± S.D.	16.0 ± S.D.								
					n = 80, 357; p < 0.01									
PHQ-9	11.1 ± 6.0	12.2 ± 5.8	11.3 ± 5.9	12.7 ± 6.1	9.7 ± 6.3	11.8 ± 5.8	11.9 ± 5.8	10.6 ± 6.2	11.1 ± 5.9	11.8 ± 6.0	11.4 ± 5.5	11.5 ± 6.4	13.4 ± 5.5	11.3 ± 6.0
	n = 307, 141; p = 0.06		n = 373, 73; p = 0.06		n = 81, 357; p < 0.01		n = 300, 148; p = 0.02		n = 209, 239; p = 0.28		n = 210, 232; p = 0.78		n = 43, 400; p = 0.03	
Stressful life events	1.9 ± 1.2	1.6 ± 0.9												
	n = 204, 77; p = 0.03													
PC-PTSD-5	7.2 ± 1.7	6.7 ± 1.6	7.1 ± 1.7	6.9 ± 1.7	7.1 ± 1.9	7.1 ± 1.7	7.1 ± 1.7	7.0 ± 1.7	7.0 ± 1.7	7.2 ± 1.7	6.9 ± 1.6	7.2 ± 1.7	6.2 ± 1.7	7.2 ± 1.7
	n = 94, 42; p = 0.08		n = 105, 31;, p = 0.61		n = 20, 112; p = 0.96		n = 89, 47; p = 0.88		n = 66, 70; p = 0.55		n = 58, 75; p = 0.35		n = 18, 118; p = 0.02	
C-SSRS	8.4 ± 1.3	8.7 ± 1.3	8.6 ± 1.2	8.0 ± 1.5	8.3 ± 1.4	8.6 ± 1.3	8.5 ± 1.3	8.6 ± 1.3	8.4 ± 1.2	8.6 ± 1.4	8.5 ± 1.4	8.5 ± 1.3	8.7 ± 1.4	8.5 ± 1.3
	n = 92, 38; p = 0.26		n = 101, 29; p = 0.02		n = 23, 104; p = 0.39		n = 95, 35; p = 0.74		n = 45, 85; p = 0.60		n = 57, 73; p = 0.69		n = 10, 119; p = 0.65	
MSPSS	62.5 ± 14.7	62.7 ± 14.4	62.8 ± 14.8	61.6 ± 13.8	61.8 ± 16.7	62.8 ± 14.3	60.4 ± 14.7	67.0 ± 13.4	64.2 ± 14.2	61.1 ± 14.8	62.5 ± 14.0	62.6 ± 15.2	62.9 ± 14.9	62.5 ± 14.4
	n = 301, 140; p = 0.88		n = 376, 72; p = 0.54		n = 80, 351; p = 0.61		n = 295, 146; p < 0.01		n = 208, 233; p = 0.03		n = 208, 227; p = 0.98		n = 42, 394; p = 0.86	
Access to resources	11.5 ± 3.8	11.4 ± 3.6	11.5 ± 3.6	11.3 ± 4.1	12.6 ± 3.4	11.2 ± 3.7	11.3 ± 3.5	11.7 ± 4.0	11.5 ± 3.4	11.4 ± 4.0	11.5 ± 3.5	11.3 ± 3.9	11.7 ± 3.3	11.4 ± 3.7
	n = 303, 141; p = 0.86		n = 370, 72; p = 0.78		n = 79, 355; p < 0.01		n = 298, 146; p = 0.36		n = 208, 236; p = 0.71 (uv)		n = 210, 228; p = 0.62		n = 42, 397; p = 0.58	
aMBI (emotional exhaustion)	38.0 ± 14.9	40.7 ± 13.2	38.5 ± 14.5	40.2 ± 14.1	34.2 ± 16.8	39.8 ± 13.7	39.9 ± 13.2	36.7 ± 16.5	37.5 ± 14.5	40.1 ± 14.3	39.1 ± 13.4	38.4 ± 15.4	42.7 ± 12.3	38.6 ± 14.6
	n = 277, 133; p = 0.07		n = 338, 70; p = 0.36		n = 78, 323; p < 0.01 (uv)		n = 276, 134; p = 0.05 (uv)		n = 191, 219; p = 0.07		n = 198, 207; p = 0.63 (uv)		n = 39, 366; p = 0.09	
aMBI (depersonalization)	23.8 ± 8.3	25.3 ± 7.4	19.3 ± 12.2	19.1 ± 12.6	16.2 ± 12.9	19.9 ± 12.0	19.8 ± 12.2	18.1 ± 12.4	19.2 ± 12.1	19.3 ± 12.4	19.5 ± 12.1	19.0 ± 12.4	24.3 ± 8.5	18.9 ± 12.5
	n = 276, 133; p = 0.68 (uv)		n = 338, 70; p = 0.93		n = 78, 322; p = 0.02		n = 276, 134; p = 0.17		n = 191, 218; p = 0.11		n = 198, 206; p = 0.65		n = 40, 366; p <0.001 (uv)	
Workload satisfaction	28.6 ± 6.7	27.5 ± 7.1	28.2 ± 6.6	28.5 ± 8.1	29.6 ± 7.1	27.9 ± 6.8	28.0 ± 6.5	28.6 ± 7.6	28.1 ± 6.7	28.3 ± 7.0	28.4 ± 6.6	28.1 ± 7.2	27.4 ± 4.6	28.3 ± 7.1
	n = 274, 132; p = 0.15		n = 333, 71; p = 0.75 (uv)		n = 77, 319; p = 0.05		n = 271, 135; p = 0.49 (uv)		n = 189, 217; p = 0.75		n = 196, 204; p = 0.69		n = 40, 361; p = 0.29 (uv)	
Learning environment satisfaction	29.6 ± 7.4	30.7 ± 7.8	30.3 ± 7.5	28.5 ± 7.7	31.5 ± 7.8	29.7 ± 7.4	29.9 ± 7.7	30.1 ± 7.4	30.7 ± 6.9	29.4 ± 8.0	30.9 ± 7.0	29.2 ± 7.9	28.9 ± 5.1	30.0 ± 7.8
	n = 274, 132; p = 0.18		n = 333, 71; p = 0.06		n = 77, 319; p = 0.06		n = 271, 135; p = 0.79		n = 189, 217; p = 0.08 (uv)		n = 196, 204; p = 0.02		n = 40, 361; p = 0.23 (uv)	

Table 4.

Comparisons between interns and residents combined in veterinary college programs versus those in private or corporate practice combined. Means and standard deviations are provided for each metric followed by respective sample sizes and p-values. All tests conducted were Student's t-tests with the exception of those containing a parenthetical uv (unequal variance) which were conducted using a Welch's t-test. Significant test results are highlighted in orange.

Attributes	Veterinary colleges	Private/corporate practice
Physical wellbeing	16.4 ± 4.6	16.2 ± 4.5
	n = 339, 107; p = 0.69	
PHQ-9	11.5 ± 5.9	11.4 ± 6.3
	n = 340, 107; p = 0.83	
Stressful life events	1.9 ± 1.1	1.6 ± 1.0
	n = 223, 57; p = 0.04	
PC-PTSD-5	7.2 ± 1.8	6.80 ± 1.4
	n = 108, 28; p = 0.19 (uv)	
C-SSRS	8.5 ± 1.3	8.6 ± 1.2
	n = 102, 28; p = 0.54	
MSPSS	62.1 ± 14.2	63.8 ± 15.8
	n = 336, 104; p = 0.29	
Access to resources	11.4 ± 3.7	11.5 ± 3.9
	n = 338, 105; p = 0.76	
aMBI (emotional exhaustion)	38.4 ± 14.5	40.6 ± 14.1
	n = 314, 96; p = 0.18	
aMBI (depersonalization)	19.2 ± 12.2	19.4 ± 12.5
	n = 313, 96; p = 0.88	
Workload satisfaction	28.4 ± 6.6	27.8 ± 7.7
	n = 309, 97; p = 0.59 (uv)	
Learning environment satisfaction	29.7 ± 7.2	30.9 ± 8.4
	n = 309, 97; p = 0.20 (uv)	

Table 5.

Comparisons between interns in veterinary specialties were rotating small and large animal medicine against all other specialties. Means and standard deviations are provided for each metric followed by respective sample sizes and p-values. All tests conducted were Student's t-tests with the exception of those containing a parenthetical uv (unequal variance) which were conducted using a Welch's t-test. Significant test results are highlighted in orange.

Attributes	All other specialties	Emergency medicine/critical care	All other specialties	Exotic/wildlife/zoo	All other specialties	Small and large animal medicine
Physical wellbeing	15.8 ± 3.9	16.4 ± 4.7	15.9 ± 3.9	14.9 ± 5.1	16.5 ± 4.3	15.4 ± 3.8
	n = 132, 9; p = 0.63		n = 130, 11; p = 0.43		n = 51, 90; p = 0.12	
PHQ-9	12.3 ± 5.7	11.7 ± 7.5	11.9 ± 5.6	16.2 ± 6.7	12.6 ± 6.7	12.1 ± 5.2
	n = 132, 9; p = 0.76		n = 130, 11; p = 0.02		n = 51, 90; p = 0.63 (uv)	
Stressful life events	1.7 ± 0.9	1.2 ± 0.4	1.6 ± 0.9	1.9 ± 0.9	1.7 ± 0.9	1.6 ± 0.9
	n = 72, 5; p = 0.07 (uv)		n = 70, 7; p = 0.05		n = 33, 44; p = 0.88	
PC-PTSD-5	6.7 ± 1.6	8 ± 0	6.8 ± 1.6	5.8 ± 1	6.7 ± 1.5	6.7 ± 1.6
	n = 41, 1; p = 0.4		n = 38, 4; p = 0.21		n = 14, 28; p = 0.95	
C-SSRS	8.7 ± 1.3	9.3 ± 0.6	8.8 ± 1.3	8.4 ± 0.9	9 ± 1.1	8.6 ± 1.4
	n = 35, 3; p = 0.16 (uv)		n = 33, 5; p = 0.57		n = 13, 25; p = 0.32	
MSPSS	62.9 ± 14.2	59.5 ± 18.6	62.7 ± 14.6	63.1 ± 13.5	61.3 ± 14.5	63.5 ± 14.4
	n = 132, 8; p = 0.52		n = 129, 11; p = 0.93		n = 50, 90; p = 0.4	
Access to resources	11.2 ± 3.6	14.3 ± 3	11.4 ± 3.6	11.5 ± 3.8	12.1 ± 3.4	11 ± 3.7
	n = 132, 9; p = 0.01		n = 130, 11; p = 0.96		n = 51, 90; p = 0.09	
aMBI (emotional exhaustion)	40.7 ± 13.3	41.6 ± 12.7	40.8 ± 12.9	40.1 ± 16.8	36.0 ± 16.1	43.4 ± 10.4
	n = 125, 8; p = 0.85		n = 122, 11; p = 0.87		n = 48, 85; p < 0.01 (uv)	
aMBI (depersonalization)	19.7 ± 11.5	18.0 ± 12.8	19.6 ± 11.2	19.6 ± 15.7	17.6 ± 12.4	20.8 ± 10.9
	n = 125, 8; p = 0.68		n = 122, 11; p = 1.0		n = 48, 85; p = 0.13	
Workload satisfaction	27.3 ± 6.8	31.5 ± 10.9	27.7 ± 7.1	25.1 ± 7.4	29 ± 7.8	26.6 ± 6.6
	n = 124, 8; p = 0.31 (uv)		n = 121, 11; p = 0.24		n = 48, 84; p = 0.06	
Learning environment satisfaction	30.7 ± 7.6	30.5 ± 10.7	30.8 ± 7.7	29.6 ± 8.6	30.6 ± 8.1	30.7 ± 7.6
	n = 124, 8; p = 0.94		n = 121, 11; p = 0.64		n = 48, 84; p = 0.94	

Table 6.

Comparisons between residents in veterinary specialties including; 1) emergency medicine and critical care, 2) small and large animal surgery, 3) oncology, 4) radiation and diagnostic imaging, and 5) pathology and clinical pathology. Means and standard deviations are provided for each metric followed by respective sample sizes and p-values. All tests conducted were Student's t-tests with the exception of those containing a parenthetical uv (unequal variance) which were conducted using a Welch's t-test. Significant test results are highlighted in orange.

Attributes	All other specialties	Emergency medicine/critical care	All other specialties	Small and large animal surgery	All other specialties	Oncology	All other specialties	Radiation/diagnostic imaging	All other specialties	Pathology/clinical pathology
Physical wellbeing	17 ± 4.8	14.5 ± 4.3	16.9 ± 4.8	14.4 ± 4.3	16.5 ± 4.9	17.2 ± 4.4	16.2 ± 4.8	20.2 ± 3.5	16.3 ± 4.8	20.2 ± 4.2
	n = 249, 55; p < 0.01		n = 263, 41; p , 0.01		n = 282, 22; p = 0.52		n = 276, 28; p < 0.01		n = 283, 21; p < 0.01	
PHQ-9	10.9 ± 6	12.5 ± 6.2	10.9 ± 6	12.5 ± 6.3	11.2 ± 6.1	11 ± 5.8	11.4 ± 6	8.5 ± 6	11.2 ± 6.2	10.2 ± 4.2
	n = 250, 55; p = 0.08		n = 263, 42; p = 0.11		n = 283, 22; p = 0.91		n = 277, 28; p = 0.01		n = 284, 21; p = 0.33 (uv)	
Stressful life events	1.9 ± 1.2	1.8 ± 1	1.9 ± 1.1	2 ± 1.4	1.9 ± 1.2	1.8 ± 0.8	2.0 ± 1.2	1.4 ± 0.8	1.9 ± 1.1	2.4 ± 1.7
	n = 170, 33; p = 0.66		n = 169, 34; p = 0.6		n = 189, 14; p = 0.64		n = 183, 20; p = 0.03		n = 191, 12; p = 0.31 (uv)	
PC-PTSD-5	7.4 ± 1.8	6.7 ± 1.2	7.3 ± 1.7	7.2 ± 2	7.3 ± 1.7	7 ± 2.1	7.2 ± 1.8	8.1 ± 1.1	7.2 ± 1.7	8.7 ± 1.5
	n = 76, 18; p = 0.05 (uv)		n = 79, 15; p = 0.91		n = 88, 6; p = 0.72		n = 86, 8; p = 0.05		n = 91, 3; p = 0.15	
C-SSRS	8.4 ± 1.3	8.6 ± 1.4	8.4 ± 1.4	8.5 ± 1.1	8.4 ± 1.3	9.0 ± 1.2	8.4 ± 1.4	8 ± 0.7	8.5 ± 1.3	7.6 ± 1.3
	n = 71, 21; p = 0.45		n = 79, 13; p = 0.74		n = 85, 7; p = 0.23		n = 87, 5; p = 0.25		n = 84, 8; p = 0.07	
MSPSS	62.9 ± 14.3	60.1 ± 16.6	62.4 ± 14.8	62.7 ± 14.6	62.3 ± 14.7	64.9 ± 15.1	62.1 ± 14.7	65.4 ± 14.6	62.8 ± 14.6	58.2 ± 16.5
	n = 248, 51; p = 0.21		n = 257, 42; p = 0.90		n = 278, 21; p = 0.43		n = 271, 28; p = 0.27		n = 278, 21; p = 0.17	
Access to resources	11.8 ± 3.7	9.7 ± 3.6	11.7 ± 3.7	9.9 ± 3.5	11.4 ± 3.8	12.6 ± 3.2	11.2 ± 3.7	13.4 ± 3.6	11.3 ± 3.8	13 ± 3.3
	n = 248, 53; p < 0.01		n = 259, 42; p < 0.01		n = 280, 21; p = 0.14		n = 273, 28; p < 0.01		n = 280, 21; p = 0.05	
aMBI (emotional exhaustion)	37.2 ± 15.1	42.8 ± 12.6	38.0 ± 14.8	38.6 ± 15.1	37.9 ± 15.1	41.1 ± 11.2	38.9 ± 14.7	30.0 ± 14.9	38.3 ± 14.7	34.9 ± 17.7
	n = 231, 44; p = 0.01 (uv)		n = 233, 42; p = 0.83		n = 254, 21; p = 0.23 (uv)		n = 251, 24; p = 0.01		n = 259, 16; p = 0.37	
aMBI (depersonalization)	18.3 ± 12..6	23.7 ± 11.5	19.1 ± 12.7	19.4 ± 12.3	19.3 ± 12.7	17.7 ± 11.8	19.2 ± 12.4	18.8 ± 14.7	19.7 ± 12.5	10.1 ± 11.3
	n = 230, 44; p = 0.01		n = 232, 42; p = 0.89		n = 278, 133; p = 0.58		n = 251, 23; p = 0.89 (uv)		n = 258, 16; p = 0.03	
Workload satisfaction	29.2 ± 6.4	25.0 ± 7.0	28.6 ± 6.7	28.1 ± 6.4	28.4 ± 6.8	29.3 ± 4.7	28 ± 6.5	34.3 ± 5.5	28.3 ± 6.7	31.5 ± 5.8
	n = 228, 44; p < 0.01		n = 230, 42; p = 0.64		n = 251, 21; p = 0.43 (uv)		n = 248, 24; p < 0.01		n = 255, 17; p = 0.05	
Learning environment satisfaction	29.7 ± 7.2	29.3 ± 8.6	30 ± 7.4	27.5 ± 7.3	29.4 ± 7.6	32.4 ± 4.7	29.2 ± 7.5	33.5 ± 5.8	29.5 ± 7.5	31.3 ± 5.7
	n = 228, 44; p = 0.78		n = 230, 42; p = 0.05		n = 251, 21; p = 0.01 (uv)		n = 248, 24; p = 0.01		n = 255, 17; p = 0.33	

Table 7.

PHQ-9 score (ranging from 0 to 27; 0-4 none, 5-9 mild, 10-14 moderate, 15-19 moderately severe, 20-27 severe), and depression prevalence (percent of scores being 10 or above).

Mental Wellbeing	Mean PHQ-9 Depression Scores	PHQ-9 Depression Prevalence
Veterinary medicine interns (n = 141)	12.2	54%
Veterinary medicine residents (n = 307)	11.1	

Table 8.

Overall intern and resident timing of experiencing episodes of depression. In the top half of the table percentages are provided for respondents (n = 345) that experienced an episode of depression during different time periods of their lives. Respondents experiencing a single episode (n = 99) provided the timing of those episodes, and percentages corresponding to those responses are provided in the bottom half of the table.

When have you experienced episodes of depression? (n = 345)	
Time period	**Percentage**
High school or before	33.6%
Between high school and college	19.1%
During college	44.6%
Between college and veterinary school	24.9%
During veterinary school	58.8%
Between veterinary school and residency/internship	32.5%
During residency/internship	80.6%
If you experienced only one lifetime episode of depression, when was it? (n = 99)	
Event	**Percentage**
High school or before	7.1%
Between high school and college	0.0%
During college	4.0%
Between college and veterinary school	0.0%
During veterinary school	13.1%
Between veterinary school and residency/internship	9.1%
During residency/internship	66.7%

Table 9.

Overall intern and resident access to mental health resources. Percentages of respondents (n = 301) that strongly disagreed, disagreed, felt neutral about, agreed or strongly agreed with each statement are provided.

Access to mental health resources (n = 301)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
My program offers adequate mental healthcare and support services	11.5%	22.3%	31.1%	30.0%	5.0%
I feel comfortable accessing the mental healthcare and supports services available at my program	12.4%	25.0%	28.6%	27.3%	6.3%
I feel myself and others are given the time/flexibility to attend mental health appointments without judgement	25.1%	29.8%	22.8%	18.3%	4.1%
If needed, I could access a mental health professional who could see me within 5 business days	11.3%	17.8%	27.5%	32.1%	11.3%

Table 10.

Overall intern and resident workload satisfaction. Percentages of respondents (approximately 400; sample sizes vary slightly by question) that strongly disagreed, disagreed, felt neutral about, agreed or strongly agreed with each statement are provided.

Workload satisfaction (n ~ 400)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Time demands are reasonable and allow me to get my work done	19.7%	31.8%	17.5%	24.4%	6.7%
Hospital support services are sufficient to help me care for my patients and/or clients during after-hours	35.6%	28.6%	16.3%	15.3%	4.2%
There is enough faculty/clinical and staffing support provided by the program	27.8%	25.6%	10.8%	27.1%	8.6%
The overall workload is generally excessive in this program	4.9%	28.3%	19.5%	30.0%	17.2%
The degree of responsibility I have for the care of patients is appropriate	3.5%	10.0%	10.4%	50.2%	25.9%
My resident/internship experience is worth the financial constraints	7.9%	16.7%	19.7%	36.9%	18.7%

Table 11.

Overall intern and resident learning environment satisfaction. Percentages of respondents (approximately 400; sample sizes vary slightly by question) that strongly disagreed, disagreed, felt neutral about, agreed or strongly agreed with each statement are provided.

Learning environment satisfaction (n ~ 400)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I get timely and appropriate feedback from faculty/clinical supervisors	16.0%	22.2%	20.0%	32.0%	9.9%
Resident/intern position(s) appear to fill a long-standing staffing gap at the institution	4.7%	13.9%	11.9%	35.1%	34.4%
Clinical supervisors and administrators support me when I feel that clients are being difficult or abusive to me	7.2%	12.4%	20.4%	35.1%	24.9%
There is generally open communication throughout my program's institution	11.6%	26.9%	20.0%	31.6%	9.9%
I receive satisfactory recognition from others for my work	11.1%	20.0%	24.0%	32.3%	12.6%
I have institutional support to help me effectively address workplace conflict while in my program	15.3%	22.2%	32.0%	22.4%	8.1%
Full-time faculty members positively contribute to a great extent of the teaching I have received	6.7%	10.3%	13.1%	44.6%	25.4%
Scheduled conferences or rounds are generally a valuable learning experience	6.4%	14.3%	13.3%	42.9%	23.2%