A survey of the impact of potential work-related stressors on mental health among veterinarians in Croatia

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Abstract

This study aimed to provide insights into potential work-related stressors, career satisfaction levels and their potential impact on mental health among veterinarians in Croatia. A total of 389 veterinary doctors participated in this research. The survey response rate was 21.1%, signifying the involvement and input of a specific number of veterinarians in the Republic of Croatia in this study. The questions were designed and divided into categories to assess demographic information about the participants and their mental health, including inquiries about their psychosocial environment and individual well-being. The study was designed as cross-sectional study, utilising an online survey as the main tool for data collection. The survey was available from 14 March to 30 April 2023. The findings highlight the potential increased risks for veterinary professionals who experience certain stressors related to their work. Since this is the first study of its kind, it could enable a better understanding of the specific needs and challenges related to mental health in the veterinary profession in the Republic of Croatia.

Key words: *veterinary medicine; psychological stressors; mental health; depression; suicidal thoughts; psychological help*

Introduction

It is well-known that veterinary professionals are exposed to work-related stressors that can have a potential impact on their mental health (Stoewen, 2015; Rodrigues da Silva et al., 2023). Specifically, veterinary surgeons are particularly exposed to psychological stressors, leading to a significantly higher risk of suicide, with a death rate four times greater than the general population, and nine times higher than other healthcare professions (Bartram and Baldwin, 2008). The suicide risk among Californian veterinarians from 1960 to 1992 was 2.6 times higher than the risk of suicide in the general population (Miller and Beaumont, 1995). Estimated

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suicide rates for veterinarians in Western Australia and Victoria were 4 and 3.8 times higher, respectively, than the well-standardised suicide rate in the adult population in those states (Jones et al., 2008). In the United States, out of 11,627 surveyed veterinarians, 158 (1%) had attempted suicide (Nett et al., 2015), while in Germany, out of 3,118 veterinarians, 19.2% had suicidal thoughts, 32.1% were classified as having an increased risk of suicide, and 27.78% tested positive for depression compared to 3.99% of the general population (Schwerdtfeger et al., 2020).

In Minnesota, out of 831 veterinarians, 204 (25%) reported experiencing depression (Fowler et al., 2016). In another study involving 997 surveyed veterinarians, it was concluded that women were more frequently exposed to stress compared to their male counterparts, with veterinarians working in small practices being the most commonly exposed to stress.

From 2001 to 2012, a significantly higher percentage of suicides occurred among veterinarians compared to the general population, which recorded 18 deaths during that period globally (Milner et al., 2015). In the United States, from 2003 to 2014, 197 veterinarians and five veterinary technicians died by suicide (White et al., 2019). From 1979 to 2015, 398 veterinarians died by suicide, with 82% males and 18% females, and 76.5% of them aged ≤65 years (Tomasi et al., 2019). In one study, more than 27% of women and 22% of men reported contemplating suicide (Skipper and Williams, 2012).

Mental health disorders among veterinarians are not solely prevalent in developed countries, and they are a significant problem even among veterinarians in underdeveloped nations (Stoewen, 2015; Rodrigues da Silva et al., 2023). All of these stressors can lead to burnout syndrome in veterinarians, consisting of three dimensions: emotional exhaustion, a depressive state, and a lack of a sense of personal achievement. Veterinarians often form emotional bonds with the animals they care for, making veterinarians, technicians, and other animal health team members particularly sensitive to compassion fatigue (Cohen, 2007). Serious workplace exhaustion was more prevalent among women in the youngest age group, and among men in the oldest age group. A study conducted of 216 veterinarians regarding job-related and home-related disturbances revealed that 15.6% of those veterinarians suffered from a high level of burnout, and veterinarians working on cattle farms and in mixed practices in Belgium were most affected by this issue due to their interactions with farmers, and time management (Hansez et al., 2008).

Materials and methods

Participants

This study involved veterinarians in the Republic of Croatia employed in various professional domains within the field of veterinary medicine. This encompassed veterinarians working in small animal practices, large animal practices and mixed practices, involving both small and large animals, and those employed in the veterinary inspection service.

Data collection and ethical approval

The study was designed as cross-sectional, utilizing a questionnaire as the data collection instrument, conducted through a Google Forms survey and exported into SPSS (version 28.0.1.1; IBM Corp) for statistical analysis. The survey was available for completion from 14 March to 30 April 2023. Notification about the research and an invitation to participate was sent to veterinarians via their official email addresses distributed by the Croatian Veterinary

Chamber, which is the competent national association for the regulation of the veterinary profession, promotion of veterinary medicine, and representation of interests in the field of veterinary medicine. All subjects, as members of the Croatian Veterinary Chamber, were informed about the opinion and decision of the Ethics Committee and were also informed about the survey and the questionnaire system through the presentation at the scientific and professional conference with international participation. There were no financial or material rewards provided for participating.

Survey structure

The demographic information about participant backgrounds collected for the study and reported included gender identity, categories of veterinary positions with reference to small, large, or combined animal practices or veterinary inspection, length of employment, hours worked per week, and weekly on-call hours. To assess participant psychosocial environment and individual well-being, when creating the survey, the questions were derived from previous research in other countries, along with additional inquiries specific to the veterinary profession in the Republic of Croatia.

Survey reliability

Cronbach's alpha coefficient was used to determine the survey's reliability. According to the results, the statements exploring veterinarians' mental well-being in the Republic of Croatia exhibited weak reliability and internal consistency (Cronbach's alpha coefficient = 0.506). Within the reliability analysis, of the total of 389 participants taking part in the survey, it was necessary to exclude 162 of them (representing 41.6% of the total number) during the Cronbach's alpha coefficient calculation. This resulted in the final inclusion of 227 participants (constituting 58.4% of the total number) in the analysis. The high percentage of excluded participants was because the 162 respondents failed to provide complete answers to all questions within the survey.

Statistical analysis

During data processing, analysis, and interpretation phases, the statistical software SPSS version 28.0.1.1 (IBM Corp) was employed. Univariate analysis was performed to determine the distributions and frequencies of participant answers to questions in the survey. This analysis gave insights into the frequency and distribution of responses among participants. The Pearson Chi-Square test was employed to ascertain statistical differences between responses from different participant categories, and to assess the correlation between the variables. The results were analysed and interpreted with the level of statistical significance set at $P < 0.05$.

An analysis of the statistical test power was conducted to assess the adequacy of sample size for detecting associations between categorical variables. With a sample size of 389, effect size of 0.03, and significance level (α) of 0.05, the statistical test power (1-β) amounted to 0.9949. Therefore, our analysis indicates a high probability of correctly rejecting the null hypothesis when the alternative hypothesis is true. This power level suggests that this study was well-conducted and suitable for detecting small associations between the observed variables. The analysis of statistical test power was conducted using the G*Power 3.1 software.

Results and discussion

Sociodemographic characteristics

In the study, 389 veterinarians participated out of the total 1800 registered

veterinarians in the Republic of Croatia, according to data from the Croatian Veterinary Chamber. The response rate to the survey was 21.1%. Of the 389 participants who indicated their gender, 222 (57.67%) identified as male veterinarians, 163 (42.33%) as female veterinarians, and nine did not specify. The percentage of male participants was significantly ($P < 0.05$) higher than female participants. Among the total number of participants, 242 (64.23%) had been working in the profession for more than ten years, 70 (18.27%) for 5 to 10 years, and 67 (17.50%) for less than five years. The survey encompassed the various veterinary activities most commonly practiced in Croatia. According to the results, 189 veterinarians, accounting for 52.94% of the total participants, were engaged in small veterinary practice. Another significant form of veterinary activity was mixed practice involving both small and large animals, involving 106 veterinarians, representing 29.70% of the total participants. Large animal practice was performed by 56 veterinarians, constituting 15.68% of the participants. Veterinary inspection, a specific domain of the veterinary profession, involved 6 veterinarians, making up 1.68% of the total participants in this survey. The hours worked per week and weekly on-call hours are reported in Table 1.

Table 1. Key characteristics of veterinary professionals in the Republic of Croatia who participated in the online survey for assessment of their mental health

		N	%	N*
Gender	male	222	57.67	385/389
	female	163	42.33	
Categories of veterinary positions	small animal practice	189	52.94	357/389
	mixed (small and large) animal practice	106	29.70	
	large animal practice	56	15.68	
	veterinary inspection	6	1.68	
Length of employment	< 5 years	67	17.50	379/389
	5-10 years	70	18.27	
	> 10 years	242	62.23	
Hours worked per week	up to 40 hours a week	180	48.13	374/389
	from 41 to 60 hours per week	176	47.06	
	more than 60 hours a week	18	4.81	
Weekly on-call hours	< 42 hours per week	263	74.71	352/389
	43 – 84 hours per week	60	17.05	
	85 – 126 hours per week	12	3.41	
	127 – 168 hours per week	17	4.83	

N* – Number of respondents who gave an answer/total number of participants

Table 2. The frequency of respondent answers to the question about prioritising the causes of workplace stress (score from one to five, where one is most significant and five is least significant)

	N (%) 1	N (%) 2	N (%) 3	N (%) 4	N (%) 5	No.*
Owner's expectations	102 (29.00)	66 (18.95)	59 (16.80)	60 (17.05)	64 (18.20)	352/389
Scarcity of private leisure time	54 (15.40)	78 (22.20)	87 (24.20)	72 (20.45)	61 (17.35)	
Prospect of making a professional error	49 (13.95)	64 (18.20)	78 (22.15)	91 (25.90)	70 (19.80)	
Working hours	52 (14.77)	62 (17.62)	64 (18.18)	71 (20.17)	103 (29.26)	
Excessive administrative tasks	95 (27.00)	84 (23.86)	63 (17.90)	57 (16.19)	53 (15.05)	

* No. of respondents who gave an answer/total no. of respondents

Career satisfaction

Participants were invited to respond to questions regarding their satisfaction with their chosen career, whether they would again choose the same career, and their expectations regarding a career in veterinary practice. In terms of satisfaction with their chosen profession, the results reveal polarised opinions among the respondents. Out of the total 389 participants, 192 (50.3%) stated that they were satisfied with their choice of being a veterinarian. Conversely, 190 participants, accounting for 49.7% of the total number, expressed dissatisfaction with their profession (N=382/389). Regarding the potential reselection of the veterinary profession, most participants, 281 (73.8%), indicated they would choose this career again. In contrast, 100 participants (26.2%) stated they would not choose the veterinarian profession again (N=381/389). Concerning career-related expectations, the majority of participants, 314 (81.8%), mentioned expecting gradual improvement and progress in their careers. Conversely, 70 participants (18.2%) did not share such expectations (N=384/389). When asked about satisfaction with their salary, 277 veterinarians (72.37%) expressed dissatisfaction, while 106 veterinarians (27.7%) were content with their salary (N = 383/389). Regarding the availability of personal time, 268 veterinarians (70.2%) stated they did not have enough personal time, while 114 veterinarians (29.8%) confirmed having sufficient personal time available (N = 382/389). Concerning the work atmosphere at their workplace, 212 veterinarians (55.4%) expressed satisfaction, while 171 veterinarians (44.6%) were dissatisfied with the work atmosphere (N = 383/389). In terms of secure employment, 287 (75.3%) stated they had guaranteed employment, while 94 veterinarians (24.7%) expressed uncertainty about their employment status (N = 381/389). Table 2 shows the prioritised (from one to five) causes of workplace stress based on participant responses, while Table 3 illustrates the significant factors associated with work satisfaction reported by the same participants in accordance with their importance. Furthermore,

Table 3. The frequency of respondent answers ranking the factors of work satisfaction according to their significance (score from one to four, where one is most significant and four is least significant)

	N (%) 1	N (%) 2	N (%) 3	N (%) 4	No.*
Favourable treatment outcomes	148 (43.28)	76 (22.22)	47 (13.74)	71 (20.76)	342/389
Quality relations with patient owners	74 (21.63)	84 (24.56)	122 (35.67)	62 (18.12)	
Quality relations with colleagues	48 (14.04)	72 (21.05)	57 (16.66)	165 (48.25)	
Opportunity for education	70 (20.47)	116 (33.92)	110 (32.16)	46 (13.45)	

* No. of respondents who gave an answer/total no. of respondents

the participants were asked to provide an answer to the question about what they consider to be the most significant deficiency in their daily work as veterinarians. These responses were categorised into eight different groups on the basis of the frequency of answers, as depicted in Figure 1.

Regarding alcohol consumption, respondents provided varied responses about their alcohol habits. The majority of participants, 210 (55%), mentioned consuming alcohol moderately, while 119 participants (31.2%) stated they never consume alcohol. A smaller number of participants, 46 (12%), reported occasionally consuming larger quantities of alcohol, while only 7 participants (1.8%) mentioned regularly consuming large quantities of alcohol (N=382/389).

Mental health

Mental health in this context refers to the emotional, mental, and psychological well-being of veterinarians. This category encompasses various aspects of the veterinary professional life and how these aspects impact the welfare and emotional state of veterinarians. Work-related stressors can unfortunately impact mental health, and potentially lead to mood disorders such as depression, and even suicide. The common changes in mental health relate to sadness, emptiness, or irritable moods, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function. Table 4 presents respondent answers reflecting their current mental health. Other research also indicated that the most common work-related stressors include: professional stress due to long working hours, anticipation of complaints from patient owners, work overload, poor work-life balance, professional isolation, student debt, and similar factors (Tomasi et al., 2019). From the study by Platt et al. (2012), it emerged that the primary stressors in veterinary practice were related to managerial aspects of the work, long working hours, high work responsibility, a significant imbalance between work and personal life, client relations, and performing euthanasia. These studies indicated that the most common cause of death among veterinary surgeons was attributable to professional stress. In Canada, among 806 respondents, 7% reported experiencing high

stress or no stress at all in their veterinary work, while 54% reported moderate stress (Epi and Waldner, 2012). According to a study involving 11,627 individuals, 1077 (9%) had serious mood disorders, 3655 (31%) acquired these disorders after graduating, 1952 (17%) had suicidal thoughts, 157 (1%) had attempted suicide, and 2228 (19%) were under treatment for psychological conditions (Nett et al., 2015). In the present study, it was noted that the majority of respondents (N=313/388) felt sad and worthless due to work-related factors, leading to increased irritability and frustration, even in minor situations ($P < 0.05$). Statistical significance was observed in the correlation between work-induced irritability and its association with poor sleep ($P < 0.05$). A significant number of veterinarians (N=207/389) reported experiencing poor sleep and becoming irritable over trivial matters. Additionally, irritability and lack of energy throughout the day also proved statistically significant ($P < 0.05$). Predominantly, respondents indicated experiencing daytime fatigue (N=293/389) and becoming irritable. The link between irritability and feelings of worthlessness showed statistically significant results ($P < 0.05$); 213 respondents felt worthless and irritable, while 126 experienced irritability without feelings of worthlessness. The relationship between irritability and seeking psychological support was also statistical-

Table 4. Results of research into the psychosocial environment and individual well-being of veterinary professionals in the Republic of Croatia to assess their overall mental health

	No. of respondents		Percentage (%)		No. of respondents who gave an answer/ total no.
	Yes	No	Yes	No	
Have you ever felt sad and worthless because of your job?	330	49	87.1	12.9	379/389
Have you become irritable and frustrated at work even over trivial matters?	336	47	87.7	12.3	383/389
Do you have insomnia?	207	174	54.3	45.7	381/389
Do you lack energy during the day?	304	77	79.8	20.2	381/389
Do you have trouble concentrating?	267	114	70.1	29.9	381/389
Have you become apathetic and worthless?	211	171	55.2	44.8	382/389
Do you have thoughts about death and suicide?	48	334	12.6	87.4	382/389
Have you had issues with depression?	136	247	35.5	64.5	383/389
Have you ever sought professional support from a psychiatrist or psychologist?	71	192	18.6	50.3	263/389

ly significant ($P < 0.05$); 72 became irritable and sought help, 176 were irritable but did not seek help, and a smaller percentage neither felt irritable nor sought psychological support.

It is noteworthy that respondents admitted feeling apathetic and worthless, with a majority (N=124/389) not seeking professional psychiatric or psychological help for these feelings ($P < 0.05$). In our study, there was statistical significance ($P < 0.05$) in relation to depression issues and seeking psychiatric or psychological assistance. Among the 123 respondents experiencing depression, 49 sought help from a psychiatrist or psychologist, while 122 claimed not to have had depression issues, but occasionally sought professional psychiatric or psychological support.

In Croatia, out of 383 respondents, 136 (35.5%) reported having depression issues, a significantly higher percentage than in Minnesota in 2012, where, out of 831 veterinarians, 204 (25%) reported depression (Fowler et al., 2016). A similar trend was seen in a survey in the US, where out of 990 veterinarians, 9% experienced severe mental health issues, and 31% had depressive episodes (Net et al., 2015). In the UK, among 1796 respondents, 26.3% expressed anxiety, 5.8% were depressed, and 4.5% had both anxiety and depression (Bartram et al., 2009). Similar mental health issues among veterinarians were observed in Australia, where it was reported that one-third had poor mental health (Fritschi et al., 2009).

In Croatia, out of 136 veterinarians experiencing depression, only 71 (18.6%) sought psychological support, a figure similar to a study in the US where half of the veterinarians with mental health issues sought psychological assistance (Dr. Jen Brandt, Director of the AVMA Well-being and Diversity Initiative). Signs of depression were mostly linked to dissatisfaction with their chosen profession. In the study by Skipper and Williams (2012), dissatisfaction was reported in 49% of cases, which is significantly more than reports stating that 15% of veterinarians and 7% of veterinary technicians were dissatisfied with their profession, and 4% of all respondents were unhappy with their careers. Dissatisfaction emerged as a key factor in depression, indicated by responses where one in four veterinarians would not choose the same career again (26.2%), 81.8% expected better overall dissatisfaction with work atmosphere (44.6%), job insecurity (24.7%), and dissatisfaction with salary (72.37%). All these factors led to feelings of sadness and worthlessness (55.2%), accompanied by daytime fatigue and the inability to concentrate (70.1%), which were exacerbated by challenging behaviour from pet owners, causing veterinarians to suffer from mental health issues. In the present study, 87.1% of veterinarians reported feeling sad and worthless, with 79.8% experiencing daytime fatigue, affecting their work.

Potential work-related stressors

Attitude of pet owners towards doctors of veterinary medicine

As elsewhere in the world, in the Republic of Croatia, most of the curative work in the veterinary profession concerns working with pets whose owners are very sensitive and emotionally attached to their animals. This emotional connection leads to frequent disagreements with veterinarians, whether in the form of threats, exposure of their reputation in public, disparagement through social networks, or the threat of filing a lawsuit for perceived professional mistakes. According to the survey conducted, 82.2% of veterinarians experienced issues with animal owners, such as threats of lawsuits (44.2% of surveyed veterinarians), demands for finan-

cial compensation (21.4% of surveyed veterinarians), general threats (60% of surveyed veterinarians), and online harassment or harassment through social networks, which affected 42.5%, according to the survey results. The survey also revealed a statistically significant correlation ($P < 0.05$) between allegations of generally challenging behaviour by pet owners toward respondents and threats by owners. Among 225 respondents, it was noted that when owners behaved challengingly, the respondents also experienced threats from those owners. Similarly, there was a statistically significant relationship ($P < 0.05$) between claims of the generally challenging behaviour of pet owners toward respondents and situations where the owner belittled them through social media. Out of 384 respondents, 141 stated that owners had threatened and belittled them via social networks, while 131 respondents mentioned that owners had neither threatened nor belittled them through social networks ($P < 0.05$). Despite the generally challenging behaviour of pet owners towards respondents, no lawsuits had been filed against them ($P< 0.05$). Respondents, when faced with generally challenging behaviour from owners, reported feelings of sadness, worthlessness, irritability, and frustration, even in relation to minor situations ($P < 0.05$). A statistically significant relationship ($P < 0.05$) was found between allegations of the generally challenging behaviour of pet owners toward respondents and problems with depression.

In this study, 123 respondents who experienced challenging behaviour from owners also had issues with depression, while 194 respondents experienced challenging behaviour from owners but did not have problems with depression. Although most respondents (N=157/387) reported generally challenging behaviour from owners, they did not seek professional help from psychiatrists or psychologists ($P < 0.05$). However, it is significant to note that out of 387 respondents who faced generally challenging behaviour from owners, 63 sought professional help from psychiatrists or psychologists. A study conducted by the American Veterinary Medical Association (AVMA) in 2014

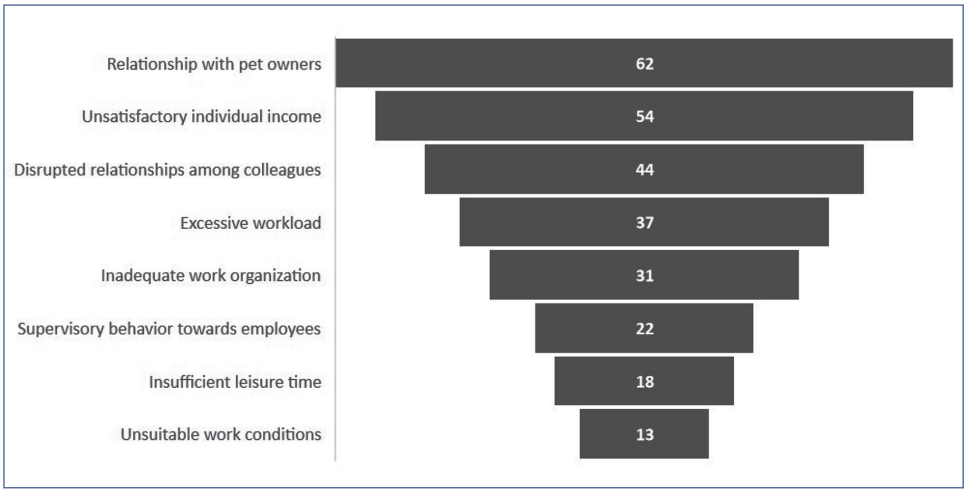

Figure 1. Representation of respondent answers in the survey regarding what they consider major disadvantages in the workplace

showed that one in five veterinarians had been subjected to online harassment by pet owners, who would write negative reviews online or threaten their business, or they knew a colleague who had been harassed. A frequently mentioned cause of stress is client expectations and unexpected treatment outcomes (Gardner and Hini, 2006, Nett et al., 2015), resulting in challenging behaviour from owners, including threats, lawsuits, demands for financial compensation, or disparagement through the media. All of these lead to irritability over minor issues, which was experienced by 87.7% of surveyed veterinarians, ultimately leading to a loss of passion for their once-desired profession, and changes in appetite and sleep patterns (Codi, 2017).

Impact of work hours and on-call shifts leading to a scarcity of personal time and their resultant effects

Another significant stress factor is the lack of personal time for family and friends, or the amount of time spent at work. The results of our study revealed that out of 387 (21.5%) respondents, nearly 50% reported working more than 42 hours per week. There were even responses indicating a workload of up to 120 hours or 168 hours per week. Additionally, 41% of veterinarians reported being on-call for more than 48 hours per week, confirming that veterinarians lack sufficient free time for themselves, their families, and friends. This situation leads to inevitable stress if sustained, as evidenced by a study where veterinarians, on average, were on call for over 100 hours per month (Rejula et al., 2003). Indeed, significant associations were found between the number of on-call hours and weekly working hours regarding the lack of personal time ($P < 0.05$). This research demonstrated a statistically significant relationship between the lack of personal time for family and friends and subjective feelings of sadness, worthlessness, irritability, frustration, poor sleep, a lack of energy, a lack of concentration, as well as feelings of apathy and worthlessness at work ($P < 0.05$). Furthermore, a correlation between the lack of personal time for family and friends and the presence of depression was investigated and found to be statistically significant ($P < 0.05$). Although participants reported a lack of personal time for family and friends, some also denied the presence of depression. Despite mentioning the lack of personal time for family and friends, respondents did not actively seek professional help from psychiatrists or psychologists ($P < 0.05$). However, this suggests that the lack of personal time for family and friends may be associated with a range of negative emotional and psychological experiences among respondents.

In a study of 997 veterinarians, one of the most common causes of stress was extended working hours (Gardner and Hini, 2006), which was similarly confirmed by other authors in their research (Platt et al., 2012; Pohl et al., 2022; Hansez et al., 2008). In our survey, 70.2% of veterinarians indicated a lack of sufficient free time, which is one of the significant factors contributing to stress, considering that the cause of stress is the imbalance between work and private life, or insufficient time for family and friends (Platt et al., 2012). The boundaries between work and private life are often blurred, and the stress from a workday, week, month, or even year is carried home (Codi, 2017). Longer working hours are also a stress factor because an increase in workload of 1 hour per week increases the risk of suicidal thoughts by 1.9% (Bartram et al., 2009), and long working hours are an important factor in veterinary burnout (Hansez et al., 2008).

Working atmosphere

The study aimed to compare how the working atmosphere influenced feelings of sadness and worthlessness, and it reached statistical significance (P <0.05). Despite being satisfied with the workplace atmosphere, 172 respondents reported feeling worthless, while 161 felt both sad and worthless, and were dissatisfied with the work atmosphere. Analysis of the correlation between the working atmosphere and irritability revealed a significant relationship (P < 0.05). Of the participants, 178 expressed satisfaction with the atmosphere, but also reported experiencing irritability, 36 were not irritable and were content with the atmosphere, and 162 became irritable and were dissatisfied with the atmosphere. The study also identified a connection between the workplace atmosphere and depression issues (P < 0.05). Among them, 73 acknowledged having depression problems but were content with the workplace atmosphere. Additionally, 141 did not experience depression and were satisfied, while 64 reported depression issues and dissatisfaction with the workplace atmosphere, and 110 did not suffer from depression but were dissatisfied with the atmosphere. Regarding satisfaction with the workplace atmosphere and seeking help from a psychologist, of the total number of participants, 37 were unsatisfied with the atmosphere and sought support.

Suicide and suicidal thoughts

The suicide rate within the veterinary profession is approximately twice that of the dental profession, more than twice that of the medical profession, and 2.6 times (Miller et al., 1995) to four times higher than in the general population (Bartram et al., 2010). Estimated suicide rates for veterinarians in Western Australia and Victoria were 4.0 and 3.8 times higher, respectively, than the age-standardised suicide rate in the adult population in those states (Jones et al., 2008). A study on the deaths of Californian veterinarians from 1960 to 1992 reported that the risk of suicide among veterinarians was 2.6 times higher than in the general population (Miller and Beaumont, 1995).

The results of our study revealed that of the 382 veterinarians who expressed themselves on this issue, 48 (12.6%) admitted to having had thoughts about suicide and death, which is a significantly lower figure than that reported by the Canadian Veterinary Medical Association, where one in five veterinarians had considered taking their lives, and 26.2% had thought about it in the previous 12 months, compared to 12.2% of the general population (Croteau, 2021). Similarly, a report from Germany indicated that out of 3118 veterinarians, 19.2% had had suicidal thoughts compared to 5.7% in the general population. Furthermore, 32.1% of veterinarians were classified as having an increased risk of suicide, compared to 6.62% in the general population, and 27.78% of veterinarians tested positive for depression, compared to 3.99% of the general population (Schwerdtfeger et al., 2020). Stoewen (2015) cites a study from the National CVMA Survey in 2012 involving 769 veterinarians, where 19% had seriously contemplated suicide, and 9% had previously attempted it. These figures are significantly higher compared to a study in the US involving 11,627 veterinarians, among whom 157 (1%) had attempted suicide (Nett et al., 2015). However, these figures are similar to another US study, which indicated that veterinarians are three times more likely to consider suicide than the national average, with 1 to 1.5% attempting suicide post-graduation (Codi, 2017). In our study, the correlation between challenging owner

behaviour and suicidal thoughts was statistically significant ($P < 0.05$). Among respondents, 274 reported no suicidal thoughts despite experiencing challenging behaviour, while 42 participants reported having suicidal thoughts having faced such behaviour.

Statistically significant results were obtained from the research regarding the connection between satisfaction with the working atmosphere and suicidal thoughts ($P < 0.05$). Among respondents, 196 reported having no thoughts of suicide and being content with the atmosphere at work, while 18 had suicidal thoughts despite being satisfied. Additionally, 31 participants had suicidal thoughts and were not content with the working atmosphere, and 142 had no such thoughts, but were dissatisfied.

In the present study, a statistically significant connection was found between the lack of personal time for family and friends and the occurrence of thoughts about death and suicide. Among the 387 respondents, 229 expressed experiencing a lack of personal time for family and friends, yet significantly did not report experiencing thoughts of death or suicide.

In analysing the connection between work satisfaction and suicidal thoughts, 31 individuals reported having suicidal thoughts but were satisfied with the career they had chosen. Additionally, 251 participants did not experience any thoughts of suicide and were content with their chosen profession. On the other hand, 17 individuals had suicidal thoughts and were dissatisfied with their chosen profession, while 86 participants did not have any thoughts of suicide but were not content with their chosen career. The correlation between irritability and suicidal thoughts was also statistically significant ($P < 0.05$). Among respondents, 49 individuals reported having thoughts about suicide and becoming irritable, while 290 did not have thoughts of death but felt irritable, and 48 did not have such thoughts and were not irritable. Even though they felt sad and worthless due to work-related issues, they did not have thoughts of death or suicide, nor did they experience any problems with depression ($P < 0.05$). Furthermore, the relationship between thinking about death and suicide and seeking professional psychiatric or psychological help was also statistically significant ($P < 0.05$). Among respondents who did not have thoughts about death or suicide, 163 did not seek professional help, while 56 respondents without such thoughts sought professional help. On the other hand, 15 respondents who had thoughts about death and suicide sought professional help. However, it is essential to emphasise the potential impact of chronic stress, which can lead to depression and its consequences, possibly resulting in mistakes made by veterinarians in their work (Codi, 2017). In relation to the population of veterinarians in Croatia, this aspect will be further explored in a forthcoming publication.

Conclusion

The survey highlighted the problems in veterinary medicine, calling for those responsible to conduct more comprehensive, expert, and thorough surveys, while emphasising the risks associated with work that affects the mental health of veterinarians. The main risks involved in the emergence of such conditions should be addressed immediately and efforts should be made to avoid them in all respects (threats and mistreatment of veterinarians in all types of practice) or where this is not possible, to minimise them (secure job, working hours daily and on call hours, etc.).

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Anketno istraživanje utjecaja potencijalnih profesionalnih stresora na mentalno zdravlje doktora veterinarske medicine u Republici Hrvatskoj

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Provedeno anketno istraživanje imalo je za cilj je trebalo dati uvid u potencijalne profesionalne stresore, razinu zadovoljstva karijerom i njihov uvid utjecaj na mentalno zdravlje doktora veterinarske medicine u Republici Hrvatskoj. U ovom istraživanju sudjelovalo je ukupno 389 doktora veterinarske medicine, dok je stopa odgovora ankete iznosila 21,1 %. Pitanja su osmišljena i podijeljena u kategorije za procjenu demografskih informacija o učesnicima, uključujući pitanja o njihovom psihosocijalnom okruženju i individualnom mišljenju o vlastitom mentalnom zdravlju. Studija je zamišljena kao transverzalno istraživanje, koristeći online anketu kao glavni alat za prikupljanje podataka. Istraživanje je bilo dostupno od 14. ožujka 2023. do 30. travnja 2023. Rezultati istraživanja upućuju na potencijalne profesionalne rizike koji utječu na mentalno zdravlje doktora veterinarske medicine. Budući da je ovo prvo istraživanje takve vrste, ono bi moglo omogućiti bolje razumijevanje specifičnih potreba i izazova vezanih uz veterinarsku struku u Republici Hrvatskoj.

Ključne riječi: *veterinarska medicina, psihološki stresori, mentalno zdravlje, depresija, suicidalne misli, psihološka pomo*