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A Moderated Mediation Analysis to Explain the Propensity to Quit among Self-employed Veterinarians

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ABSTRACT

Becoming a veterinarian requires ample effort, consequently, quitting prematurely can feel like a personal failure. Three antecedents of quitting—working hours, overload, and burnout—were explored by conducting a moderated mediation analysis. The study included 459 self-employed veterinarians (74.3% women). Nearly fifty percent reported working over 50 hours per week. High levels of overload were observed, while burnout and turnover intention slightly exceeded mean scores. The moderated mediation analysis results indicated that the direct correlation between working hours and propensity to quit was not significant; however, moderated mediation was confirmed, as burnout acted as a mediator and overload as a modulator. Specifically, when the veterinarians worked long hours and experienced high levels of stress due to overload, their burnout scores increased, which in turn heightened their propensity to quit. These findings have practical implications, offering insights that could help reduce quitting rates by improving healthcare support for this group of professionals.

Un análisis de mediación moderada para explicar la propensión de los veterinarios autónomos a dejar el trabajo

RESUMEN

Convertirse en veterinario requiere mucho esfuerzo por lo que dejar el trabajo puede considerarse un fracaso personal. Este estudio analiza tres factores que influyen en la decisión de dejar el trabajo (las horas de trabajo, la sobrecarga y el *burnout*) mediante un análisis de mediación moderada. La muestra está constituida por 459 veterinarios autónomos (74.3 % mujeres). El 50% trabaja más de 50 horas/semana; sus niveles de sobrecarga son altos y el *burnout* y la propensión a dejar el trabajo se sitúan ligeramente por encima de la media. El modelo de mediación moderada indica que la relación directa entre las horas de trabajo y la tendencia a dejar el trabajo no es significativa, pero el *burnout* actúa como mediador y la sobrecarga como moderador, pues cuando los veterinarios trabajaban muchas horas y experimentaban una gran sobrecarga su *burnout* aumentaba y se incrementaba su propensión a dejar el trabajo. Estos resultados tienen implicaciones prácticas para reducir las bajas, al mejorar la salud de estos profesionales.

In general, quitting a profession is concerning, and this is especially pertinent in fields such as veterinary medicine, where many personal and social resources are invested. According to the latest Vet Survey in Spain, 25% of veterinarians were found to be considering quitting the profession and 13% not disregarding the idea either (López, 2024). However, this issue has also been noted in other related countries. In Ireland, 54% of respondents said they were likely to quit their job

within two years (Ryan et al., 2022), and in the UK, 43.7% reported that they were likely or very likely to quit their job within two years (Hagen et al., 2020). The figures were similar in the United States. A survey of over 2,000 veterinarians revealed that 44% considered quitting their profession, although this percentage was higher among younger veterinarians and those dedicated to the care of companion animals (Ouedraogo et al., 2021).

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Among the reasons for quitting, work and personal factors have been revealed. A study by [Arbe Montoya et al. \(2021\)](#), in which interviews were conducted with veterinarians who had quit the profession, identified health issues among workplace factors, such as schedules and work overload, and personal factors. The study highlighted that veterinarians allude to several factors simultaneously and recommended analyzing these factors together.

Along these lines, the present study, involving a moderated mediation analysis, establishes the influence of three factors: two occupational and one personal. Occupational factors include indicators of poor working conditions, specifically, working hours and stress due to overload, while the personal factor includes burnout. This study analyzes the modulation, focusing specifically on whether stress due to overload increases the direct effect of working hours on burnout and indirectly increases the propensity to quit ([Figure 1](#)). It should be noted that the study was conducted with veterinarians who are devoted to pet care and work as freelancers, which are two important risk factors for two reasons. First, this sector of veterinary medicine is associated with higher stress levels than other sectors; second, freelancers invest substantial personal resources to create and maintain their business ([J. Park et al., 2020](#)). In Spain, 10,719 veterinarians are currently registered as self-employed workers, accounting for 33% of the total ([Jiménez, 2025](#)), and approximately 60% are estimated to be devoted to pet care. These figures highlight the importance of this group. Few studies have focused exclusively on self-employed veterinarians, and we have yet to find any that jointly considered the different antecedents of their propensity to quit their profession. Therefore, we believe this study can make significant contributions.

Working Conditions, Burnout, and Propensity to Quit

Overall, self-employed individuals have long working hours that result in overload, stress, and burnout ([Cardon & Patel, 2015](#)), which may explain their decision to quit their profession ([Beutell et al., 2019](#)). However, the negative effect of working hours is not always consistent. A study by [E. C. Park and Kim \(2021\)](#) revealed that freelancers who work fewer hours experience worse health outcomes, which may be logical, as reduced working hours can indicate a failing business. However, other studies have indicated that despite their higher workload, self-employed individuals are in better health ([Sewdas et al., 2018](#)) and are less likely to quit their work ([Kersebohm et al., 2017](#)) compared to employees. What is certain is that starting and maintaining a business involves significant stress, and the probability of quitting is high. Therefore, identifying the variables influencing this tendency is crucial.

One key variable is the type of work. In healthcare professions, for instance, schedules (long hours, on-call shifts, extended shifts, etc.) are frequently cited as the primary reason for professionals' high propensity to quit, as indicated by meta-analytic studies on nurses ([López-López et al., 2019](#)), nursing staff ([Vargas-Benítez et al., 2023](#)), and doctors and nurses ([Krishnan & Rathakrishnan, 2025](#)). In veterinary medicine as well, poorly designed schedules are one of the main reasons for quitting. A study involving German veterinarians found that almost 50% of the employees worked more hours than the legally defined maximum ([Kersebohm et al., 2017](#)). Similar trends have been observed in other countries ([Moorcock et al., 2021](#)). As for self-employed veterinarians, surveys have indicated that those who work longer hours are more likely to quit ([Ryan et al., 2022](#)).

In general, schedules and poor working conditions are among the main sources of stress for veterinarians ([Andela, 2020](#); [Mastenbroek et al., 2014](#); [Osca, Millán, et al., 2024](#)) and among the main reasons for quitting the profession. [Sonneveld et al. \(2023\)](#) first confirmed this qualitatively through interviews with veterinarians who had quit their job and then quantitatively by conducting surveys in which poor working conditions were the most mentioned factors.

H1: The length of the working day is positively related to the propensity to quit.

However, as noted by [Adin et al. \(2021\)](#) and [Hilton et al. \(2023\)](#), although poor working conditions are related to the tendency to leave the veterinary profession, their influence depends on other personal and organizational factors that should be analyzed in conjunction. Specifically, poor working conditions negatively impact health and, more specifically, burnout levels. [Maslach et al. \(2001\)](#) pointed out that time pressure and workload are consistently associated with burnout, which is considered a response to chronic work stress. Subsequently, a meta-analysis by [Alarcón et al. \(2009\)](#) concluded that work overload is one of the most important antecedents of burnout. Another meta-analysis of studies in the medicine field also confirmed that the length of the working day is a significant predictor of burnout ([Pulcrano et al., 2016](#)). In veterinary medicine, a narrative review of studies by [Steffey et al. \(2023\)](#) confirmed that work overload is related to an increase in burnout scores, and [Chapman et al. \(2025\)](#) found a link between work overload and burnout, 96.33% of the time using the Delphi technique.

Studies involving self-employed individuals have also demonstrated a relationship between stress and mental health problems, as confirmed by [Wen and Gao \(2025\)](#) in their meta-analysis, although these authors identified certain variables that moderate this relationship, such as gender and financial situation.

Meta-analytic studies on healthcare workers have also identified a correlation between burnout and the propensity to quit ([Xu et al., 2023](#)). Although few studies exist on the subject in veterinary medicine, [Rohlf et al. \(2022\)](#) found that burnout accounted for 28.9% of the variance in the intention to quit veterinary work, using the ProQOL scale, which includes a burnout indicator.

However, few studies have jointly analyzed the effects of different factors on the propensity to quit, and those that have used small sample sizes ([Kogan et al., 2020](#); [Rohlf et al., 2022](#)), preventing definitive conclusions from being drawn. To overcome these limitations, this study evaluates a moderated mediation model that links three antecedents with the propensity to quit ([Figure 1](#)), using a sample of self-employed veterinarians.

H2: Burnout mediates the relationship between working hours and the propensity to quit.

H3: Work overload moderates the relationship between working hours and the propensity to quit, and veterinarians who work longer hours and experience higher workload have higher burnout levels and, indirectly, show an increased propensity to quit.

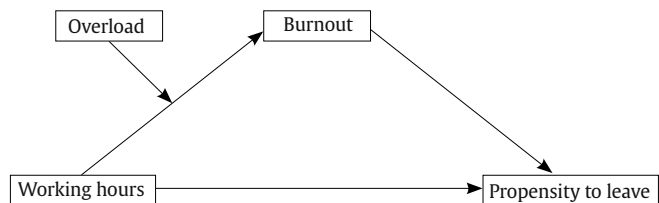


Figure 1. Research Framework.

Method

Sampling and Procedure

A convenience sampling strategy was employed. Participants were recruited via a private Facebook group of Spanish veterinarians, which requires prior registration for access. This group primarily serves as a platform for addressing clinical questions, discussing complex cases, and sharing emotionally challenging experiences.

Table 1. Measurement Model

Factors and items	Factor Loading	CR	AVE
Overload		.919	.741
1. Overload	.858		
2. Working long hours	.823		
3. Performing tasks that require more time than expected	.887		
4. Bureaucratic administrative tasks, which are also increased by new laws and regulations	.873		
Burnout		.903	.700
1. Exhaustion	.812		
2. Mental distance	.827		
3. Cognitive impairment	.847		
4. Emotional impairment	.859		
Propensity to leave		.903	.757
1. In recent weeks, I have thought a lot about what other job options I might have	.910		
2. In recent weeks, I have thought a lot about leaving this profession	.912		
3. In recent weeks, I have looked for other job opportunities	.782		

A Google questionnaire was created, and access was provided between February 28, 2025, and March 17, 2025. Veterinarians were informed that the requested data would only be used for scientific purposes. The Ethics Committee of National Distance University approved all informed consent procedures and protocols (reference: 26-SISH-PSI-2023).

Overall, 459 self-employed Spanish veterinarians were involved in small animal care (74.3% women). Their average age was 42.12 ($SD = 10.44$) years, and the average length of service as a working professional was 17.19 ($SD = 10.04$) years. Overall, 72.3% had a bachelor's degree, and the rest had an additional degree, although 2.6% had a doctorate (4%).

According to hours working per week, 47.3% stated that they worked less than 40 hours per week and the rest worked more than 40 hours per week: 33.3% between 41 and 50 hours per week, 11.59% worked between 51 hours and 60 hours per week, and 7.4% more than 60 hours per week.

Work overload was measured using the 4-item subscale of the Sources of Stress in Veterinary Medicine questionnaire (SOS-Vet-Med; [Osca et al., 2024b](#)) (e.g., "Stress from performing tasks that require more time than expected"). Burnout was measured using the Spanish version of the BAT-C ([Osca et al., 2024a](#)), which consists of 23 items (e.g., "Everything I do at work requires a lot of effort from me"). Finally, the propensity to quit the profession was measured using a 3-item scale created ad hoc specifically for this study (e.g., "In recent weeks, I have thought a lot about quitting this profession"). All questionnaire responses were assessed on a 5-point Likert scale ranging from 1 = *never* to 5 = *always*.

Data Analysis and Results

SPSS 29.0.2 was used to analyze some of the psychometric properties of the items and AMOS 21.0 and macro-PROCESS v 4.2 ([Hayes, 2013](#)) to probe the moderated mediation model.

Convergent Validity

Given the large number of items in the burnout scale, there was a risk of underestimating model fit. Therefore, following the recommendation of [Coffman and MacCallum \(2005\)](#), the number of indicators per construct was reduced to improve the robustness of the measurement model and to more accurately assess construct validity. The results of the second-order CFA for burnout indicated that the four subscales showed strong factor loadings on their respective dimensions. Consequently, items belonging to the same dimension were combined, resulting

in four parceled indicators representing exhaustion, mental distance, cognitive impairment, and emotional impairment. These parceled indicators were subsequently used in the CFA model to evaluate the measurement structure. All factor loadings exceeded .60 ([Table 1](#)), indicating that the items effectively captured their underlying constructs ([Hair et al., 2019](#)). In addition, composite reliability (CR) values were greater than .70, demonstrating internal consistency, and average variance extracted (AVE) values were greater than .50 ([Fornell & Larcker, 1981](#)), confirming good convergent validity.

Discriminant Validity

To assess discriminant validity, this study employed the heterotrait-monotrait ratio (HTMT) criterion. The HTMT values are .23, .42, and .61 ([Table 1](#)), all below the recommended threshold of .85 ([Hair et al., 2019](#)), indicating that overload, burnout, and propensity to leave, exhibited adequate discriminant validity and were empirically distinct constructs.

Reliability analyses indicated satisfactory internal consistency for all scales. Cronbach's α and McDonald's ω values were as follows: overload ($\alpha = .87$, $\omega = .87$), burnout ($\alpha = .95$, $\omega = .95$), and propensity to leave ($\alpha = .84$, $\omega = .83$).

Pearson's correlations ([Table 2](#)) indicated that, although women veterinarians work fewer hours than men ($r = -.12$, $p = .01$), they experience greater overload and propensity to quit ($r = .11$, $p = .01$). Regarding the correlations proposed in the hypotheses, all variables correlated significantly and in the expected direction, except for working hours and propensity to quit ($r = .05$, $p = .41$). Therefore, $H1$ was rejected, although the interest in the moderated mediation analyses was supported.

Mediation Model

Before testing $H2$, a model fit analysis was conducted ([Table 3](#) and [Figure 2](#)). The findings revealed that working hours had a significant positive effect on burnout ($a = .18$, $p < .001$), and burnout had a significant positive effect on propensity to leave ($b = .53$, $p < .001$). The mediation analysis indicated a significant indirect effect of working hours on propensity to leave through burnout ($a*b = .10$, $SE = .03$, $z = 4.36$, 95% CI [.04, .14]), providing empirical support for $H2$. As [Collins et al. \(1998\)](#) noted, although the direct effect of working hours on propensity to leave was not statistically significant, a mediated effect was possible, as observed in this case.

Table 2. Means, Standard Deviations, Correlations, Reliabilities and Discriminant Validity

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	AVE	AVE ^{1/2}
1. Gender	-	-	-									
2. Age	-	-	-.17***	-								
3. Length of service	-	-	-.15***	.83***	-							
4. Academic level	-	-	-.02	-.10*	-.10*	-						
5. Working hours	-	-	-.12**	-.04	-.05	.06	-					
6. Overload	4.75	.45	.12**	.01	.01	.01	.15**	.84	.23	.42	.741	.861
7. Burnout	3.14	.82	.03	-.06	-.06	-.02	.17***	.25***	.95	.61	.700	.837
8. Propensity to leave	3.34	.93	.11*	-.02	-.02	.02	.05	.26***	.42***	.84	.757	.870

Note. Average Variance Extracted.
p* < .05, *p* < .01, ****p* < .001; Cronbach's alpha values on the diagonal. HTMT values on the upper diagonal.

Table 3. Path Analysis Table

Path Relationship	Coefficient	<i>SD</i>	<i>t</i>	95% CI
WH → Burnout	.18	.04	3.74***	(.07, .24)
WH → PTL	.08	.05	1.66†	(-.04, .15)
WH → PTL	-.02	.04	-0.36	(-.11, .06)
WH → Burnout → PTL	.10	.03	3.50***	(.03, .12)

Note. WH = Working hours; PTL = Propension to leave.

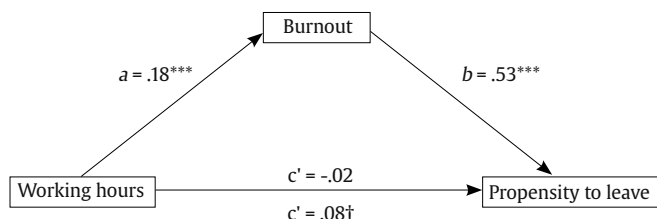


Figure 2. Path Analysis Results.
†*p* < .10, *** *p* < .001.

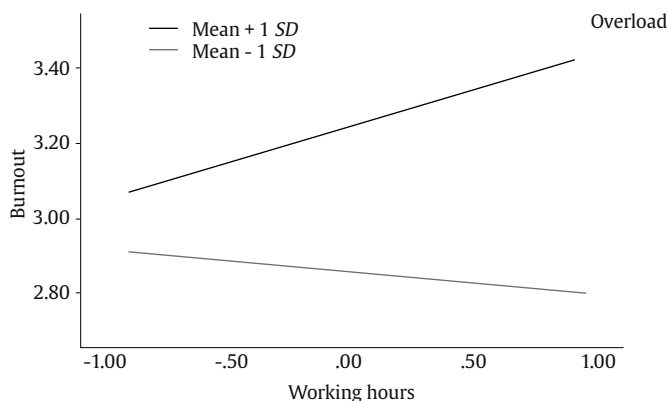


Figure 3. Simple Slope Analysis Results.

Moderation Analysis

The moderation analyses shown in Table 4 revealed a significant effect, indicating that work overload moderates the relationship between working hours and burnout (coefficient = .41, *SE* = .12, *t* = 3.51***, 95% CI [.18, .64]). Moreover, the simple slopes analysis showed that when work overload was high (*M* + 1 *SD*), the positive relationship between working hours and burnout was significant (coefficient = .19, *SE* = .05, *t* = 4.17***, 95% CI [.10, .28]). However, when work overload was low (*M* – 1 *SD*), the relationship between working hours and burnout was not significant (coefficient = –.08, *SE* = .07, *t*

= –1.14, 95% CI [–.22, .06]). Because the confidence interval did not include zero, the moderating effect was confirmed as statistically significant. Figure 3 illustrates the moderating effect, showing that higher levels of overload strengthen the positive relationship between working hours and burnout, supporting Hypothesis 3.

Table 4. Moderation Model Table

Moderation	Coefficient	<i>SD</i>	<i>t</i>	95% CI
Mean – 1 <i>SD</i>	–.08	.07	–1.14	(–.22, .06)
Mean	.10	.04	2.44*	(.02, .18)
Mean + 1 <i>SD</i>	.19	.05	4.17***	(.10, .28)

Moderated Mediation Model

The results of the moderated mediation analysis (Table 5 and Figure 3) revealed that when work overload was low (*M* – 1 *SD*), the indirect effect of working hours on propensity to leave through burnout was –.05 (Boot *SE* = .05, 95% CI [–.14, .04]). When overload was at the mean level, the indirect effect increased to .07 (Boot *SE* = .03, 95% CI [.01, .12]). When overload was high (*M* + 1 *SD*), the indirect effect further increased to .12 (Boot *SE* = .03, 95% CI [.06, .18]). In addition, the index of moderated mediation was .26 (Boot *SE* = .08, 95% CI [.11, .43]), indicating that the conditional indirect effect varied significantly as a function of overload.

Table 5. Moderated Mediation Model Table

Moderated mediation	Coefficient	<i>SD</i>	95% CI
Overload (Mean – 1 <i>SD</i>)	–.05	.05	(–.14, .04)
Overload (Mean)	.07	.03	(.01, .12)
Overload (Mean + 1 <i>SD</i>)	.12	.03	(.06, .18)
Index of Moderated Mediation model	.26	.08	(.11, .43)

Discussion

Quitting veterinary medicine is a pervasive issue within the profession (Sonneveld et al., 2023) and can be considered a personal failure for self-employed workers. Research has confirmed this issue, identifying personal and work antecedents as contributing factors, although these have generally been identified using descriptive analysis. To address these limitations and following the recommendations of Arbe Montoya et al. (2021), this study evaluated the weight of three factors, two occupational and one personal, through a moderated mediation analysis. Workday length and stress due to work overload were considered occupational factors, while burnout was considered the personal factor. The objective was threefold: first, to examine the direct relationship between workday length and the tendency to quit;

second, to analyze the mediating role of burnout; and third, to verify whether stress due to overload increases the indirect effect of workday length on burnout and the propensity to quit.

Before presenting the results of the moderated mediation analysis, it is important to note that participants reported excessively long workweeks, which may be considered strenuous. Nearly half of the participants reported working more than 50 hours per week, and approximately 20% reported working more than 60 hours per week. These figures exceed those reported among veterinarians who are not self-employed (Kersebohm et al., 2017; Moorcock et al., 2021). Their scores for stress due to overload were also high, while their scores for burnout and propensity to quit were slightly above average. It should be noted that the indicators for clinical burnout in the BAT-C, which was used in this study, are more restrictive than those of other frequently used measures (Schaufeli et al., 2020). It should also be noted that the women in the sample reported working fewer hours than the men; however, they had greater stress levels due to overload and a greater tendency to quit. These findings align with other studies conducted among veterinarians (Ryan et al., 2022).

Regarding the moderated mediation analyses, the first hypothesis, which proposed a direct and positive relationship between workday length and the propensity to quit the profession, was rejected (Ryan et al., 2022; Sonneveld et al., 2023). However, this finding is valuable as it reinforces the importance of including other potentially related variables in the analysis. Hypothesis 2, regarding the mediating role of burnout, was confirmed. Although similar studies in veterinary medicine were not found, our findings are consistent with existing research confirming direct relationships. Specifically, workday length has been shown to increase burnout levels (Chapman et al., 2025; Steffey et al., 2023), and burnout (Rohlf et al., 2022) has been shown to increase the tendency to quit (Xu et al., 2023). Finally, Hypothesis 3, regarding the moderating effect of work overload, was also confirmed. Specifically, veterinarians who work longer hours and experience more overload reported higher burnout levels and a greater propensity to quit.

We believe these results are of both theoretical and applied interest. Theoretically, the findings indicate that while working hours influence veterinarians' well-being, they do not fully explain their tendency to quit, since the tendency to quit depends on the stress and burnout resulting from working hours. As this is the first study of its kind, we believe this contribution is especially significant. However, future research should also analyze other background variables and mediators that might influence self-employed veterinarians' high propensity to quit.

Regarding background variables, examining other sources of stress that affect workers, such as work-family balance (Hagen et al., 2020) or issues related to pet owners (Spitznagel et al., 2019), would be valuable, as these aspects may also influence the propensity to quit. Furthermore, other modulating variables, such as personality type (Warnock et al., 2024), over work-involvement (Thielmann et al., 2024), and coping mechanisms (Stetina & Krouzecky, 2022), which could also influence the effect of workday length and overload, must be investigated.

Regarding sociodemographic and work differences, we found age, gender, and the professional sector as factors influencing the propensity to quit (Ouedraogo, 2021). Therefore, determining the specific weight of these variables would be valuable. Studies analyzing the propensity to quit among self-employed women in this sector were also not found. However, this aspect is particularly interesting because the women veterinarians in this study reported working more hours than their colleagues and had greater stress, and they also exhibited a higher tendency to quit. In this regard, the situation of these women is especially complex because their issues as veterinarians (Mastenbroek et al., 2014; Ouedraogo et al., 2021; Rhodes et al., 2022) are exacerbated by their status of self-employment (Jennings & Brush, 2013).

Finally, it would be beneficial to investigate the relationship between the propensity to quit and actual quitting behavior. As in other studies that have addressed this issue (Lee et al., 2011), the measures used in this study cannot predict outcomes with certainty (Ajzen, 1991; Tornikoski & Maalaoui, 2019). However, they do reflect the uncertainty currently faced by veterinarians. In addition, the question of what veterinarians intend to do if they quit and whether they have contemplated this decision could be asked. In this regard, including information about their financial situation would help understand their issues, as indicated by meta-analytic studies on self-employed workers (Wen & Gao, 2025).

The cross-sectional nature of the present study is a limitation that future research should address using longitudinal data. Nevertheless, the common limitation of generalizing the results is unlikely given the sample size. In addition, additional analyses were performed to mitigate the risk of common method bias associated with self-reported questionnaires (Podsakoff et al., 2003). Therefore, we may conclude that the results are adequate. Furthermore, although the sample was Spanish, available statistics indicate that the situation of veterinary medicine professionals is similar in many countries worldwide.

Finally, we believe that the findings are significant from an applied perspective. Self-employed veterinarians must not only regulate the workday length of their employees but also take care of themselves. Working more hours than recommended can increase stress and burnout levels and, indirectly, increase the tendency to quit the profession, constituting a major personal and social failure. In this regard, some specific recommendations have been offered for veterinarians to reduce the impact of long working hours and improve their health, such as forcing clinics to address workflow systems, fostering collaborative leadership, adopting technologies that support workload, streamlining processes, and implementing efficient or flexible scheduling (Chapman et al., 2025).

Conclusions

This study constitutes the first attempt to examine the combined influence of three important background risk factors for quitting among self-employed veterinarians using a moderated mediation model. Although these risk factors have been analyzed in numerous studies, until now nobody has addressed them together. Our findings highlight the role of burnout in shaping self-employed veterinarians' decisions to quit their profession, emphasizing the need for preventive measures that promote healthier working conditions. Quitting among self-employed veterinarians is a personal and social issue: not only is a job lost, but a business built through considerable effort—and often employing others—may also shut down. In addition, when the veterinarian is self-employed, a service increasingly valued in society is lost.

Conflict of Interest

The authors of this article declare no conflict of interest.

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