ORIGINAL ARTICLE

Burnout syndrome prevalence in veterinarians working in Chile

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ABSTRACT. Burnout Syndrome is a psycho-emotional syndrome that affects workers in any activity or profession. In recent years, veterinarians have been described as one of the most affected professionals, which has motivated the development of this research. The primary objective of this work was to determine the prevalence of Burnout Syndrome in veterinarians working in Chile. We evaluated the possible correlation of Burnout Syndrome with socio-demographic variables. The Socio-Demographic Characterization Survey and the Maslach Burnout Syndrome Inventory-General Survey (MBI) were applied to 521 participants, who were contacted through the Veterinary Medical Association of Chile (COLMEVET) and social networks. Fisher and Chi-square statistical tests and correspondence analysis were used to determine the association among variables. The prevalence of Burnout Syndrome in Chilean veterinarians was 24% (124/521). There was statistical significance between Burnout Syndrome and the variables 'years in employment' and 'monthly salary'. There is a high prevalence of Burnout Syndrome in veterinarians working in Chile that was related to the variables 'years in employment' and 'monthly salary'. Prevention using psychological therapy could reduce the incidence of symptoms linked to adaptive difficulties, cognitive discrepancies, psychological discomfort, and emotional regulation, promoting health improvement and resistance to Burnout Syndrome in Chilean veterinarians. This research corresponds to the first exploratory study related to the subject in Chile.

Key words: Burnout Syndrome, veterinarians, Maslach, Chile.

INTRODUCTION

The International Labor Organization (ILO) concludes that work-related stress is one of the pathologies of the future, which is increasing progressively and globally from an already large base rate. In Europe alone, approximately 40 million people are affected by this syndrome[1]. Burnout Syndrome, first described in the 1970s, is a group of work-related symptoms and signs that usually occur in people with no history of psychological or psychiatric disorders (Maslach and Leiter 1997, Maslach *et al* 2001). Understanding that it is not an entity other than work-related stress, it is defined as a psycho-emotional syndrome, affecting workers who are immersed in chronically deficient work environments. This results in physical and emotional exhaustion (fatigue), loss of empathy (depersonalization) and an inadequate capacity for self-assessment (low personal fulfilment)[2]. Emotional exhaustion refers to feelings of being emotionally fatigued by one's contact with other people. Depersonalization denotes an excessively detached response toward the recipients of one's service or care. Low personal fulfilment refers to a decline in the person's self-feelings of competence and goal achievement at work (Bakker *et al* 2014). It is produced by a discrepancy between the expectations and the ideals of the employee and the actual requirements of the position. Burnout Syndrome's symptoms develop gradually and are usually absent when entering a new type of employment (Moss *et al* 2016). The risk factors associated with this syndrome can be divided into four categories: (1) personal characteristics, (2) organizational factors, (3) quality of work relationships, and (4) exposure to end-of-life problems (Poncet *et al* 2007).

During the last decade, Burnout Syndrome has become a public health problem, with a prevalence of between 4% and 7% of the active working population (Maslach *et al* 2001). Diagnoses continue without being included in clinical classification systems, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) or the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (Bauernhofer *et al* 2018). There is also no consensus on the definition of Burnout Syndrome and its main symptoms (Shirom and Melamed, 2006). Moreover, the diagnosis is superimposed on the symptoms with other diagnoses, especially chronic fatigue[3] and depression (Ahola *et al* 2014).

The veterinary proffesion is considered to be one of the most vulnerable jobs in terms of job stress, as postulated

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by the ILO[4]. Further, work stress has been the primary factor associated with high suicide rates among veterinarians (Acero 2004). A series of factors that are related to occupational fatigue, such as the euthanasia factor (a procedure that involves a high psychological strain), have been recognized in the practice of veterinary medicine (Nett *et al* 2015, Scotney *et al* 2015). Other factors include wage gaps between human surgeon doctors and veterinarians (Lee 2013), access to drugs, university debt, and high intra-disciplinary competition (Acero 2004). Likewise, veterinarians are subject to social vulnerability and ignorance within the profession regarding how they defend themselves when they are judged[5]. Capó[2], Acero (2004) and Lee (2013) agree that the most vulnerable group of veterinarians is small animal practitioners. Chile is not free or unaware of this situation within the veterinary practice, and this is why we aim to carry out a first exploratory study of Burnout Syndrome in Chilean veterinarians. The hypothesis used in the present investigation was that Burnout Syndrome exists among veterinarians in Chile and it is associated with socio-demographic and labor variables.

MATERIAL AND METHODS

The study used a descriptive quantitative method, with a transversal descriptive design. The study sample included veterinarians who work in Chile. There were no exclusion criteria for gender, age, marital status, work area, years of experience, or salary. The sole exclusion criteria employed in the present study was having a history of psychological treatment related to work (prior to entering the current job) since people affected by the burnout are psychologically healthy (Maslach *et al* 2001). This study was approved by the Santo Tomás University Ethics Committee (Resolution 016-17).

The sample size was determined using the infinite population formula[6] because the number of veterinarians in Chile was unknown, and an infinite population with 95% confidence interval was considered. The minimum sample size was 385. The total sample size was 618 participants, of which 521 met the inclusion criteria. All participants accepted and signed the informed consent form. They were enrolled with the collaboration of the Veterinary Medical Association of Chile (COLMEVET) and through social networks (emails, publications in forums of Chilean

veterinarians). Participants completed a socio-demographic survey (gender, age, salary, years in employment, civil status, labor area) (table 1). The variables considered were: (1) gender (woman, man), (2) age (<33 years, between 33 and 55 years of age, > 55 years of age), (3) monthly salary (≤100,000 Chilean Pesos (i1), 100,001-300,000 Chilean Pesos (i2), 300,001-500,000 Chilean Pesos (i3), 500,001-900,000 Chilean Pesos (i4), 900,001-1,200,000 Chilean Pesos (i5), and ≥1,200,001 Chilean Pesos (i6)), (4) years in employment (<ten years in employment, ten-twenty five years in employment, >twenty five years in employment), (5) marital status (married, divorced, separated, single), and (6) labor area (small animal practice (SAP), large animal practice (LAP), public health (PH), animal production (AP), government entities (GE), food and food safety (FS), and another area (AA).

Work-related Burnout Syndrome was measured with the Maslach Burnout Syndrome Inventory-General Survey (MBI) using Google forms. The questionnaire was previously evaluated by a panel of experts that included a veterinarian and two psychologists who ensured that the digital version used retained the characteristics of the paper inventory. This version of the instrument was validated in Chile[7] and comprises a survey with the three-dimensional approach (table 1) validated by Pando *et al* (2015). The MBI consists of 22 questions (Maslach and Jackson 1981). These questions evaluate the prevalence of work-related

Table 1. Socio-demographic groups.

Variable	Group
Age group	< 33 years, ≥33 years, ≤55 years, > 55 years
Gender	Woman, man
Civil status	Single, married/civil union, separated, divorced, widow/widower
Years in employment	<10 years, 10-25 years, >25 years
Labor area	Small animal practice (SAP), Large animal practice (LAP), Public health (PH), Animal production (AP), Government entities (GE), Food and food safety (FS) and another area (AA).
Salary per month	≤100,000 Chilean Pesos (i1); 100,001-300,000 Chilean Pesos (i2); 300,001-500,000 Chilean Pesos (i3); 500,001-900,000 Chilean Pesos (i4); 900,001-1,200,000 Chilean Pesos (i5) and ≥1,200,001 Chilean Pesos (i6).

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Table 2. Maslach inventory survey for burnout classification.

Appearance evaluated	Items to evaluate	Indications of burnout
Emotional exhaustion	1-2-3-6-8-13-14-16-20	More then 26
Depersonalization	5-10-11-15-22	More then 9
Personal fulfillment	4-7-12-17-18-19-21	Less then 34

experiences on a scale of 0 (never) to 6 (every day). The inventory comprises three dimensions of the Burnout Syndrome, which are exhaustion, cynicism, and professional inefficacy. The role of work-related fatigue or exhaustion has been considered to be at the core of Burnout Syndrome (Maslach *et al* 2001). For a participant to be recognised with Burnout Syndrome, they must present altered results in all areas evaluated: 1) emotional exhaustion: a score of more than 26 points, 2) depersonalization: more than 9 points, and 3) personal accomplishment: less than 34 points (table 2). The scoring was taken from the Maslach questionnaire specified as values associated with burnout (Maslach *et al* 1996).

STATISTICAL ANALYSES

The data were arranged in frequency distribution tables, percentages (prevalences) were calculated, and the Fisher exact test and Chi-square tests were applied to determine the association between socio-demographic variables and Burnout Syndrome among the different groups analysed. Subsequently, a correspondence analysis was used to graphically demonstrate, in a two-dimensional space, the multivariate relationship between the variables that were significantly associated. The Odds Ratio (OR) calculation was performed for the dichotomous variables. The softwares used were GraphPad Prism 7 (GraphPad Software, La Jolla, California, USA) and R-Commander 3.4.4 (Bell Laboratories, Murray Hill, New Jersey, USA).

RESULTS

Out of the 521 participants included in the analysis, 124 recorded sufficient scores in the MBI for meeting the criteria for Burnout Syndrome, equivalent to a prevalence of 24%. The results showed a statistically significant association between 1) the presence of Burnout Syndrome and years of employment, and 2) the existence of Burnout Syndrome and salary. Regarding the sex variable, there was a tendency to associate with the female sex but it was not statistically significant (tables 3 and 4).

AGE GROUP

Within the 124 participants that were affected by Burnout Syndrome, the distribution by age groups was as follows: There were 83 participants (66.9%) in the

Table 3. Relationship between burnout and variables (Chi-square test).

Variable	P-value
Gender	0.061
Age	0.56
Civil status	0.92
Years in employment	0.006 **
Labor area	0.125
Salary	0.002 **

Table 4. Relationship between burnout with other variables (Fisher exact test).

Variable	P-value
Gender	0.068

group between 33 and 55 years of age, 39 participants (31.5%) were under 33 years of age, and the remaining 2 participants (1.6%) were older than 55 years of age. Out of the 397 participants without Burnout Syndrome, 274 participants (69%) were in the group between 33 and 55 years of age, 111 participants (27.9%) were under 33 years of age, and the remaining 12 participants (3.1%) were older than 55 years of age. There were no significant statistical differences between these groups (table 5).

GENDER

Amongst the 124 participants affected with Burnout Syndrome, the participants were distributed by gender as follows: 97 participants were women (78.2%), and 27 participants were men (21.8%). Out of the 397 participants without Burnout Syndrome, 276 were women (69.5%), and 121 (30.5%) were men. Although a trend was observed, there were no significant statistical differences (table 6) or did not show a significant statistical difference (table 7).

MARITAL STATUS

The number of people belonging to each marital status group within the total group of 124 participants with Burnout Syndrome was: Married 33 (26.6%), divorced 3 (2.4%), separated 3 (2.4%), single 85 (68.6%), and widowed 0

Table 5. Statistical significance between variables according to age group.

Contingency table burnout * age group					
Count		Age group			Total
		< 33 years age	33-55 years age	> 55 years age	
Burnout	0	111	274	12	397
	1	39	83	2	124
Total		150	357	14	521

Chi-square test			
	Value	gl	Asymptotic meaning (bilateral)
Chi-square Pearson	1.159[a]	2	0.560
Likelihood ratio	1.234	2	0.539
Linear association by linear	0.919	1	0.338
N valid cases	521		

a: 1 box (16.7%) has an expected lower frequency than 5. The minimum expected frequency is 3.33.

Table 6. Statistical significance between variables according to gender.

Contingency table burnout * gender				
Count		Gender		Total
		Man	Woman	
Burnout	0	121	276	397
	1	27	97	124
Total		148	373	521

Chi-square test					
	Value	gl	Asymptotic meaning (bilateral)	Exact meaning (bilateral)	Exact meaning (unilateral)
Chi-square Pearson	3.520[a]	1	0.061		
Correction for continuity[b]	3.105	1	0.078		
Likelihood ratio	3.656	1	0.056		
Fisher's exact statistic				0.068	0.037
Linear association by linear	3.513	1	0.061		
N valid cases	521				

a. 0 boxes (.0%) have an expected lower frequency than 5. The minimum expected frequency is 35.22.
b. Calculated only for a 2x2 table.

Table 7. Odds Ratio (OR) between both gender categories.

	OR	CI (95%)	Association
Burnout x Gender	1.5750	0.9775-2.5378	No significant statistical differences

(0%). The number of participants for each marital status within the 397 participants without Burnout Syndrome was: Married 103 (26%), divorced 13 (3.3%), separated 14 participants (3.5%), single 266 (67%), and widowed 1 (0.2%). Significant statistical differences were not observed between these groups (table 8).

YEARS IN EMPLOYMENT

Within the 124 participants affected with Burnout Syndrome, 101 participants (81.5%) had less than ten years of employment, 22 participants (17.7%) had ten to twenty-five years of employment, and 1 participant (0.8%) had more than twenty-five years of employment. Of the 397

Table 8. Statistical significance between variables according to marital status.

Count		Married	Divorced	Separated	Single	Widowed	Total
				Marital status			
Burnout	0	103	13	14	266	1	397
	1	33	3	3	85	0	124
Total		136	16	17	351	1	521

Chi-square test

	Value	gl	Asymptotic meaning
Chi-square Pearson	0.942[a]	4	0.918
Likelihood ratio	1.210	4	0.876
Linear association by linear	0.002	1	0.967
N valid cases	521		

a: 4 boxes (40.0%) have an expected lower frequency than 5. The minimum expected frequency is .24.

without burnout, 265 participants (66.8%) had less than ten years in employment, 121 participants (30.4%) had a range of ten-twenty five years of employment, and only 11 participants (2.8%) had more than twenty-five years of employment. Significant statistical differences ($P=0,006$) were found between the groups (tables 9 and 10).

WORK AREA

Of the affected group with Burnout Syndrome, 95 (76.6%) participants worked in SAP, 1 (0.8%) worked in LAP, 3 (2.7%) worked in PH, 4 (3%) worked in AP,

Table 9. Statistical significance between variables according to years in employment.

Contingency table burnout * years in employment

Count		< 10 years (el1)	10-25 years (el2)	> 25 years (el3)	Total
			Years in employment		
Burnout	0	265	121	11	397
	1	101	22	1	124
Total		366	143	12	521

Chi-square test

	Value	gl	Asymptotic meaning
Chi-square Pearson	10.074[a]	2	0.006
Likelihood ratio	10.929	2	0.004
Linear association by linear	9.926	1	0.002
N valid cases	521		

a: 1 box (16.7%) has an expected lower frequency than 5. The minimum expected frequency is 2.86.

Table 10. Statistical significance between groups according to years in employment.

Contingency table burnout * years in employment (Fisher exact test)

	10-25	>25
<10	0.0220**	0.3171
10-25	1.0000	1.0000

** Significant statistical differences.

7 (5.6%) worked in GE, 6 (4.8%) worked in FS, and 8 (6.5%) participants worked in AA. For the group without burnout, 260 (65.5%) worked in SAP group, 13 (3.2%) worked in the LAP group, 15 (3.8%) worked in PH, 17 (4.3%) worked in AP, 28 (7%) participants worked in GE, 11 (2.8%) participants worked in FS, and 53 (13.4%) participants worked in AA. There were no significant statistical differences between work area groups (table 11).

MONTHLY SALARY

The percentage of participants belonging to affected groups with Burnout Syndrome were as follows: i1 with 3 participants (2.4%), i2 with 15 participants (12.1%), i3 with 36 participants (29%), i4 with 41 participants (33%), i5 with 16 participants (13%), and i6 with 13 participants (10.5%). The group without Burnout Syndrome comprising of 397 participants, distributed as follows: i1 with 12 participants (3%), i2 with 49 participants (12.3%), i3 with 70 participants (17.6%), i4 with 115 participants (29%), i5 with 41 participants (10.3%), and i6 with 110 participants (27.8%). Significant statistical differences ($P=0.002$) were found between these groups (tables 12 and 13).

Table 11. Statistical significance between variables according to labor area.

					Labor area				Total
Count		SAP	LAP	PH	AP	GE	FS	AA	
Burnout	0	260	13	15	17	28	11	53	397
	1	95	1	3	4	7	6	8	124
Total		355	14	18	21	35	17	61	521

Small animal practice (SAP), large animal practice (LAP), public health (PH), animal production (AP), government entities (GE), food and food safety (FS) and another area (AA).

Chi-square test			
	Value	gl	Asymptotic meaning
Chi-square Pearson	9.981[a]	6	0.125
Likelihood ratio	11.021	6	0.088
Linear association by linear	3.979	1	0.046
N valid cases	521		

a: 4 boxes (28.6%) have an expected lower frequency than 5. The minimum expected frequency is 3.33.

Table 12. Statistical significance between variables according to monthly salary.

				Monthly salary				Total
Count		i1	i2	i3	i4	i5	i6	
Burnout	0	12	49	70	115	41	110	397
	1	3	15	36	41	16	13	124
Total		15	64	106	156	57	123	521

≤100,000 Chilean Pesos (i1); 100,001-300,000 Chilean Pesos (i2); 300,001-500,000 Chilean Pesos (i3); 500,001-900,000 Chilean Pesos (i4); 900,001-1,200,000 Chilean Pesos (i5) and ≥1,200,001 Chilean Pesos (i6).

Chi-square test			
	Value	gl	Asymptotic meaning
Chi-square Pearson	19.136[a]	5	0.002
Likelihood ratio	20.878	5	0.001
Linear association by linear	7.893	1	0.005
N valid cases	521		

a:1 box (8.3%) has an expected lower frequency than 5. The minimum expected frequency is 3.57.

Table 13. Statistical significance between groups according to monthly salary.

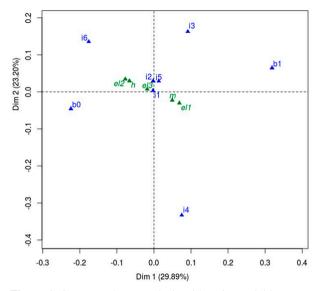| Contingency table burnout * monthly salary (Fisher exact test)					
	i2	i3	i4	i5	i6
i1	1.0000	0.5653	1.0000	0.7548	0.4039
i2	1.0000	0.3203	0.8687	0.6908	0.0589
i3	0.3203	1.0000	0.3586	0.6176	0.0008**
i4	0.8687	0.3586	1.0000	0.6176	0.0064**
i5	0.6908	0.6176	0.6176	1.0000	0.0200**

** Significant statistical differences.

Figure 1. Correspondence analysis with active variables: Burnout Syndrome (without Burnout Syndrome (b0)/ with Burnout Syndrome (b1)), years in employment (el1 to el3), and a monthly salary (i1 to i6). Illustrative variables: gender (woman (m)/man (h)); years in employment (el1 to el3).
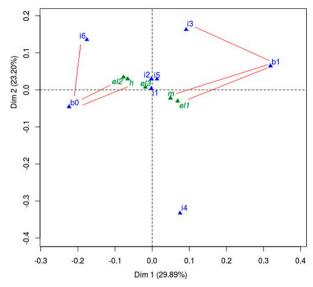

Figure 2. Interpretation correspondence analysis between variables in the study. Active variables: Burnout Syndrome (without Burnout Syndrome (b0)/ with Burnout Syndrome (b1)), years in employment (el1 to el3), and a monthly salary (i1 to i6). Illustrative variables: gender (woman (m)/man (h)); years in employment (el1 to el3).

Subsequently, correspondence analysis was carried out considering as active variables: Burnout Syndrome (without Burnout Syndrome (b0)/with Burnout Syndrome (b1)), years in employment (el1 to el3), and salary (i1 to i6). With this analysis, 53.09% of the total variability of the variable system was explained. Dimension 1 explained 29.89% of the total variance of the system. Dimension 2 explained 23.20% of the variance of the system. This analysis showed the association between the presence of Burnout Syndrome (b1) with few years of employment (el1) and lower salary (i3). The associative tendency with the female gender (m) was also visualized with b1 (figure 1). In contrast, the lack of Burnout Syndrome (b0) is associated with a higher salary (i6), average years of employment (el2), and is a tendency associated with the masculine gender (h) (figure 2).

DISCUSSION

The ILO considers the veterinary proffesion as one of the most vulnerable professions (together with health and education) to suffering from Burnout Syndrome. Our results showed Burnout Syndrome prevalence at a rate of 24%. This rate can be considered high when comparing with other studies[8] (Ordenes 2004).

In the correspondence analysis (figure 2), it is possible to see how it relates to the presence of burnout with professional experience and lower remuneration. These data agree with the analysis of the different socio-demographic variables; the veterinarians most affected by Burnout Syndrome are those with lower years of employment and lower remuneration. This result is in agreement with the conclusions of other researchers, such as Apiquian (2007), who reported that people with little work experience are the ones at higher risk (Apiquian 2007). Similarly, Nett *et al* (2015) conclude that veterinarians who have less than twenty years of work are the most affected by psychological pathologies. Hatch *et al* (2011) also propose that an influential factor in the development of Burnout Syndrome is being a recent graduate with scarce work experience. The observed relationship between burnout (less than 10 years of work experience) and professional experience (tables 8 and 9) could be explained by the effect of experiencing less safety in the work environment, a situation that would diminish over time. In contrast, Kipperman *et al* (2017) concluded that there is no statistical relationship between Burnout Syndrome and years of employment. However, this result was derived from a survey of personal appreciation and not from a validated instrument. Hence, such a finding is methodologically restricted in terms of its generalisation.

The years of employment are associated with a better employability (Acero 2004, Lee 2013), however, the Chilean scenario is very different from the USA work field. The Association of American Veterinary Medical

Colleges (AAVMC)[9] concluded that employability reached 98% in the second year, while in Chile the employability only reaches 73% in the second year. The work field is also oversaturated with proffesials, resulting in lower salaries. In the present investigation, the last (highest) income segment (il6) is the one with lower burnout levels when compared to any of the other segments (table 12). The data seems to point towards a significant jump in that level of income, since enough money would mean not to suffer the syndrome, which could be related to income levels that allow the coverage of basic needs and even allow benefits that the lower income segments cannot achieve. The reason the difference between the categories il1-il2 and il6 is not significant is that for this comparison there were only 15 and 64 people in categories il1 and il2, respectively. Lee (2013) does not refer directly to income but does recognise that those participants who have higher salaries have a low prevalence of burnout. The Office for National Statistics (ONS) concluded that there is a correlation between wealth and salary with the happiness of people[10]. According to ONS, a higher salary is related to lower levels of anxiety[5]. These findings are in accordance with the results of the present investigation, where it is evident that the highest salaries are found amongst those who reported less burnout.

One of the variables in which a significant statistical difference was not demonstrated in the current investigation (although an association tendency exists) was being a woman with an indication of burnout (table 4, figure 2). There are international publications where it is postulated that women make up a risk group for the development of work stress and Burnout Syndrome (Pando *et al* 2015). In this regard, there are some studies in veterinary medicine from New Zealand (Gardner and Hini 2006) and Australia (Hatch *et al* 2011) that conclude that women are a risk group for the development of work stress and associated psychological pathologies at work. However, in the present investigation it was not possible to establish significant statistical differences for this variable despite the observed trend.

In the present investigation, there are limitations such as the one that corresponds to the MBI, a validated but limited instrument since it focuses mainly on emotional aspects and not on cognitive ones[11] (Reijula *et al* 2003,

Shirom 2003, Bria *et al* 2014). The results obtained in this study should be interpreted with caution; taking these results as an opportunity for improvement to prevent Burnout Syndrome.

Affected workers, universities, and professional associations must participate actively in the prevention of Burnout Syndrome since a large number of students describe financial and environmental expectations about the work context that do not contradict reality until they are very advanced in their studies. The adaptation difficulties associated with this discrepancy between professional ideals and the reality of work can be an essential factor in the challenges of adaptation and psychological distress[10] (Wanous *et al* 1992). This aspect of the adaptive complexity presents a high correlation with the symptoms related to stress and this could be remedied with an early approach of the student to the labor reality, as well as training in emotional and cognitive management related to psychic discomfort. Psychology has developed several techniques that could be integrated, both in the curricular network of universities and at work. These techniques could significantly reduce the incidence of symptoms related to adaptive difficulties, cognitive discrepancies, mental discomfort, and emotional regulation, promoting health and the resilience of future veterinarians (Bakker *et al* 2014).

It is concluded that Veterinarians working in Chile present a high prevalence of Burnout Syndrome, which is related to low monthly salary and less than ten years of employment, therefore, the hypothesis generated for this investigation is accepted. Prevention in the workplace and with undergraduate students could reduce the incidence of symptoms linked to adaptive difficulties, cognitive discrepancies, psychological discomfort, and emotional regulation, promoting health and the resilience of future veterinarians.

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