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HARDINESS PERSONALITY AND ASSOCIATED FACTORS IN PROFESSORS OF UNDERGRADUATE HEALTH COURSES

Hardiness personality and associated factors in professors of undergraduate health courses

Personalidad de rusticidad y factores asociados en profesores de cursos de pregrado en salud

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ABSTRACT

Objective: to identify the factors associated with the hardiness personality among professors working in higher education at a federal institution. **Method:** epidemiological, cross-sectional and analytical study with 88 professors from undergraduate health courses in the institution. The hardiness scale associated with a questionnaire was used to investigate sociodemographic and occupational characteristics. **Results:** Moderate to high hardiness was found among the professors and this personality was associated with variables such as having children, having taken vacations in the last year, not having used prescription drugs in the last year and not having a diagnosis of anxiety disorder, that is, they exhibited resilience patterns related to a condition of coping with stress. **Conclusion:** teachers who displayed occupational resistance had important protective factors for their health, in addition, they collaborated to make the work environment more harmonious, which could favor the teaching-learning process.

DESCRIPTORS: Faculty; Resilience, Psychological; Occupational health.

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RESUMO

Objetivo: identificar os fatores associados à personalidade hardiness entre docentes atuantes no ensino superior de uma instituição federal. **Método:** estudo epidemiológico, transversal e analítico com 88 docentes dos cursos de graduação da área de saúde da instituição. Utilizou-se a escala hardiness associada a um questionário para investigar as características sociodemográficas e ocupacionais. **Resultados:** evidenciou-se hardiness moderado a alto entre os docentes e essa personalidade esteve associada a variáveis como ter filhos, ter tirado férias no último ano, não ter feito uso de remédios controlados no último ano e não apresentar diagnóstico de distúrbio de ansiedade, ou seja, exibiam padrões de resiliência relacionados a uma condição de enfrentamento frente ao estresse. **Conclusão:** os docentes que exibiam resistência ocupacional apresentavam fatores protetores importantes para a sua saúde, além disso, colaboravam para que o ambiente de trabalho se tornasse mais harmônico, podendo favorer o processo de ensino-aprendizagem.

DESCRITORES: Docentes; Resiliência psicológica; Saúde ocupacional.

RESUMEN

Objetivos: identificar los factores asociados a la personalidad resistente en profesores que actúan en la educación superior de una institución federal. **Método:** estudio epidemiológico, transversal y analítico con 88 profesores de carreras de grado del área de salud de la institución. Se utilizó la escala de rusticidad asociada a un cuestionario para investigar las características sociodemográficas y ocupacionales. **Resultados:** existió rusticidad moderada a alta entre los profesores y esta personalidad se asoció con variables como tener hijos, haber tomado vacaciones en el último año, no haber usado medicamentos recetados en el último año y no tener diagnóstico de trastorno de ansiedad, o es decir, exhibieron patrones de resiliencia relacionados con una condición de afrontamiento del estrés. **Conclusión:** los docentes que manifestaron resistencia ocupacional poseían importantes factores protectores de su salud, además, colaboraban para que el ambiente de trabajo fuera más armónico, lo que podría favorecer el proceso de enseñanza-aprendizaje.

DESCRIPTORES: Docentes; Resistencia psicológica; Salud laboral.

INTRODUCTION

Among the professional categories, teaching is one of the professions most exposed to a conflictive and highly demanding work environment, due to the extra-curricular tasks, meetings and additional activities, problems with students, sometimes leading to verbal and physical threats, time pressure, in addition to other factors, which affects teachers' physical and mental health and professional performance, generating the social devaluation of work and causing suffering.[1-2]

Under these circumstances, teachers may respond to situations with adequate coping resources or develop psychological and/or physical illnesses. In this context, personality aspects or traits have been the focus of several studies aimed at identifying individuals who are more susceptible or resistant to stress. Hardiness refers to an individual's ability to protect himself or herself from stress, i.e., personality traits that act as a source of resistance to stressful events.[3-6]

The factors that increase hardiness are those related to happiness, job satisfaction, life satisfaction, good physical and mental health, self-confidence, self-awareness, self-management, and motivation to improve outcomes, while those with low hardiness are more susceptible to depression, anxiety, and cardiovascular and neuroendocrine diseases.[5-6] Studies evaluating the hardiness personality among teachers are still incipient on the national and international scene, so identifying conditions that influence work stress is important, in this sense, the objective was to identify the factors associated with the hardiness personality in teachers working in higher education in a federal institution.

METHOD

This was an epidemiological, cross-sectional, and analytical study, based on the guidelines recommended by STROBE. The study was conducted at a Federal University in the city of Diamantina, Minas Gerais, Brazil. Professors from the health courses at the Faculties of Biological and Health Sciences participated in the study.

To determine the sample size, the professors were identified through the institution's human resources department. Only faculty with more than one year of service at the university were eligible for selection, and those on leave or on vacation were excluded.

After surveying the departments, the total number of professors found was 153. The sample was calculated using simple random sampling with replacement. The selection was made by raffle using Microsoft Excel®. To estimate the sample size, a tolerable sampling error of 5%, 95% confidence interval, 50% prevalence of the event were chosen, considering 20% of possible losses, totaling 132 faculty. However, due to unanswered questionnaires, retirements and training leave, the final sample consisted of a total of 88 participants.

Data collection was carried out between January and December 2019, and participants were given self-administered questionnaires to identify factors associated with resilience. The instruments com-

prised questions about sociodemographic, economic, and social characteristics, as well as individual and family health.

The personality outcome variable of hardiness was assessed using the Hardiness Scale (HSS), which aims to assess how hard teachers are when faced with stressful situations. It is a self-administered 30-item Likert scale with responses ranging from zero (not at all true) to three (completely true), and the HES score is obtained by summing the item scores.[3]

Data were tabulated using the Statistical Package Social Science (SPSS)® software, version 20. To analyze the data, a descriptive analysis was performed on all variables using their absolute (n) and relative (%) frequency distribution. In the bivariate analysis, the Chi-square test was used to verify the association between the dependent variable and the independent variables at the level of $p < 0.20$, and variables with $p \le 0.05$ were considered statistically associated. The study complied with the ethical principles of Resolution 466/12 and was approved by the Research Ethics Committee with reasoned opinion number 3.267.122.

RESULTS

A total of 88 professors participated in this study. In terms of socio-demographic data: 58% were female, married (62.5%) and had children (63.2%), 79.3% followed some religion, 96.6% lived in the city where the study was conducted and with their families (62.8%). 45.3% had a monthly income of more than 10 minimum wages and 88% of the professors considered themselves to be providers.

In terms of educational and work characteristics, 92% of the faculty had a doctorate, 75.9% had worked at the institution for more than five years, 97.7% were tenured or tenure track, 87.5% worked full-time, 73.9% worked two shifts a day, 52.3% worked between 8 and 12 hours a day, 78.4% had teaching responsibilities outside of their working hours, and 55.8% reported that they were responsible for a department in addition to teaching and performed administrative tasks.

When analyzing the variables related to health, 94.3% had health insurance, 73.6% did not have a chronic illness, 79.3% did not use controlled medications, and 83.0% did not have a medical diagnosis of anxiety or other emotional disorders. Regarding the hardiness scale classification, 26.4% of the teachers surveyed had high hardiness, 50.6% had moderate hardiness, and only 23.0% had low hardiness, as shown in Table 1.

Table 2 shows the significance of the overall hardiness score. In this study, faculty hardiness or hardiness personality was related to the following variables: not being the family providers ($p < 0.008$), earning more than 10 minimum wages ($p < 0.024$), not being monitored for a chronic illness ($p < 0.025$), not taking controlled medication ($p < 0.008$), and not being diagnosed with an anxiety disorder ($p < 0.000$).

Tables 3, 4, and 5 show the bivariate analyses for the three dimensions of hardiness personality, i.e., commitment, control, and challenge. The variable related to the fact that the teacher was not diagnosed with anxiety and/or any other emotional di-

sorder ($p < 0.001$) was the variable associated with the hardiness outcome commitment.

Regarding the hardiness control dimension described in Table 4, it was related to the following variables: having children ($p < 0.025$), having taken vacation in the last year ($p < 0.019$), not taking controlled medication ($p < 0.000$), and not having a diagnosis of an anxiety disorder ($p < 0.000$).

There was a significant association between total hardiness and its dimensions for the following variables: absence of chronic disease monitoring ($p < 0.025$), not using controlled medication ($p < 0.008$), and not having a diagnosis of anxiety disorder ($p < 0.000$), which represent the characteristics related to hardiness personality or resilient personality (resilience). The hardiness challenge personality dimension was associated with lack of chronic disease monitoring ($p < 0.036$).

Table 1 - Classification of hardiness personality by dimensions in teachers. Diamantina, MG, Brazil, 2019.

Variables / Hardiness Dimension	N	%
Hardiness commitment		
Low	25	28,4
Moderate	45	51,1
High	18	20,5
Total	88	100,0
Hardiness control*		
Low	25	28,7
Moderate	50	57,5
Alto	12	13,8
High	87	100,0
Hardiness challenge*		
Low	28	31,8
Moderate	40	45,5
High	20	22,7
Total	87	100,0
Hardiness*		
Low	23	26,4
Moderate	44	50,6
High	20	23,0
Total	87	100,0

*Skipping a response for one or two participants.
Source: The authors, 2019.

Table 2 - Bivariate association of total hardiness personality classification in faculty. Diamantina, MG, Brazil, 2019.

Variables	Total Hardiness				p-value
	Low n (%)	Moderate n (%)	High n (%)	Total (n=88)	
Gender*					0,205
Male	13 (35,1)	15 (40,5)	09 (24,3)	37 (42,5%)	
Female	10 (20,0)	29 (58,0)	11 (22,0)	50 (57,5%)	
Marital status*					0,171
Single	03 (13,0)	14 (60,9)	06 (26,1)	23 (26,4%)	
Married	16 (26,6)	27 (50,0)	11 (20,4)	54 (62,1%)	
Divorced	02 (50,0)	0 (0,0)	02 (50,0)	04 (4,6%)	
Widowed	0 (0,0)	0 (0,0)	01 (100,0)	01 (1,1%)	
Other	02 (40,0)	03 (60,0)	0 (0,0)	05 (5,8%)	
Deceased spouse*					0,190
No	22 (29,3)	42 (56,0)	11 (14,6)	75 (86,2%)	
Yes (> 5 years)	0 (0,0)	0 (0,0)	01 (100,0)	01(1,1%)	
NA	01 (9,1)	08 (72,7)	02 (18,2)	11 (12,7%)	
Family provider*					0,008
No	02 (13,3)	12 (80,0)	01 (6,7)	15 (17,2%)	
Total	04 (13,8))	14 (48,3)	11 (37,9)	29 (33,3%)	
Partial	17 (39,5)	18 (41,9)	08 (18,6)	43 (49,5%)	
Working regime at the IFES*					0,085
Partial	0 (0,0)	0 (0,0)	01 (100,0)	01 (1,1%)	
Integral	18 (23,7)	42 (55,3)	16 (21,1)	76 (87,4%)	
Other	05 (50,0)	02 (20,0)	03 (30,0)	10 (11,5%)	
Monthly income*					0,024
2 to 4,9 minimum wages	03 (60,0)	02 (40,0)	0 (0,0)	05 (5,7%)	
5 to 9,9 minimum wages	08 (18,2)	29 (65,9)	07 (15,9)	44 (50,6%)	
> 10 minimum wages	12 (31,6)	13 (34,2)	13 (34,2)	38 (43,7%)	
Performs teaching activities outside office hours					0,202
No	08 (42,1)	07 (36,8)	04 (21,1)	19 (21,8%)	
Yes	15 (22,1)	37 (54,4)	16 (23,5)	68 (78,2%)	

At work, in addition to being a professor, you are in charge of a department*					0,138
No	12 (30,0)	23 (57,5)	05 (12,5)	40 (46,0%)	
Yes	13 (27,7)	20 (42,6)	14 (29,8)	47 (54,0%)	
Health monitoring (Chronic disease)*					0,025
No	12 (19,0)	34 (54,0)	17 (27,0)	63 (73,3%)	
Yes	11 (47,8)	09 (39,1)	03 (13,0)	23 (26,7%)	
Use of controlled medications*					0,008
No	13 (19,1%)	38 (55,9)	17 (25,0)	68 (79,1%)	
Yes	10 (55,6)	06 (33,3)	02 (11,1)	18 (20,9%)	
Diagnosis of anxiety and/or other emotional disorder*					0,000
No	13 (18,1)	40 (55,6)	19 (26,4)	72 (82,8%)	
Yes	10 (66,7)	04 (26,7)	01 (6,7)	15 (17,2%)	

*Skipping a response for one or two participants.
Source: The authors, 2019

Table 3 - Bivariate association of the hardiness-commitment personality classification in faculty. Diamantina, MG, Brazil, 2019.

Variables	Hardiness commitment				p-value
	Low n (%)	Moderate n (%)	High n (%)	Total (n=88)	
Education					0,187
Specialist	0 (0,0)	0 (0,0)	01 (100,0)	01 (1,1%)	
Masters	03 (50,0)	03 (50,0)	0 (0,0)	06 (6,8%)	
Doctorate	22 (27,2)	42 (51,9)	17 (21,0)	81 (92,1%)	
Performs teaching activities outside office hours					0,099
No	09 (47,4)	08 (42,1)	02 (10,5)	19 (21,6%)	
Yes	16 (23,2)	37 (53,6)	16 (23,2)	69 (78,4%)	
Designated leave in the last year*					0,066

No	03(23,1)	10 (76,9)	0 (0,0)	13 (14,9%)	
Yes	22 (29,7)	34 (45,9)	18 (24,3)	74 (85,1%)	
Health Monitoring (Chronic Disease)*					0,125
No	14 (21,9)	35 (54,7)	15 (23,4)	64 (73,6%)	
Yes	10 (43,5)	10 (43,5)	03 (13,0)	23 (26,4%)	
Use of controlled medications*					0,075
No	16 (23,2)	37 (53,6)	16 (23,2)	69 (79,3%)	
Yes	09 (50,0)	07 (38,9)	02 (11,1)	18 (20,7%)	
Diagnosis of anxiety and/or other emotional disorder*					0,001
No	15 (20,5)	40 (54,8)	18 (24,7)	73 (83,0%)	
Yes	10 (66,7)	05 (33,3)	0 (0,0)	15 (17,0%)	

*Skipping a response for one or two participants.
Source: The authors, 2019.

Table 4 - Bivariate association of hardiness control personality classification in faulty. Diamantina, MG, Brazil, 2019.

Variables	Hardiness control				p-value
	Low n (%)	Moderate n (%)	High n (%)	Total (n=88)	
Marital status*					0,172
Single	03 (13,0)	16 (69,6)	04 (17,4)	23 (26,4%)	
Married	19 (35,2)	29 (53,7)	06 (11,1)	54 (62,1%)	
Divorced	01 (25,0)	02 (50,00)	01 (25,0)	04 (4,6%)	
Widowed	0 (0,0)	0 (0,0)	01 (100,0)	01 (1,1%)	
Other	02 (40,0)	03 (60,0)	0 (0,0)	05 (5,8%)	
Deceased spouse*					0,051
No	24 (32,0)	41 (54,7)	10 (13,3)	75 86,2%)	
Yes (> 5 years)	0 (0,0)	0 (0,0)	01 (100,0)	01 (1,1%)	

NA	01 (9,1)	09 (81,8)	01 (9,1)	11 12,7%)	
Has children*					0,025
No	05 (16,1)	24 (77,4)	02 (6,5)	31 (36,0)	
Yes	20 (36,4)	26 (47,3)	09 (16,4)	55 (64,0)	
Lives with family*					0,124
No	06 (18,7)	19 (59,4)	07 (21,9)	32 37,2%)	
Yes	19 (35,2)	30 (55,6)	05 (9,3)	54 62,8%)	
Family Provider*					0,165
No	03 (20,0)	11 (73,3)	01 (6,7)	15 17,3%)	
Total	05 (17,2)	18 (62,1)	06 (20,7)	29 33,3%)	
Partial	17 (39,5)	21 (48,8)	05 (11,6)	43 49,4%)	
Monthly income*					0,115
2 to 5 minimum wages	03 (60,0)	02 (40,0)	0 (0,0)	05 (5,7%)	
5 to 10 minimum wages	9 (20,5)	31 (70,5)	04 (9,1)	44 50,6%)	
> 10 minimum wages	12 (31,6)	18 (47,4)	08 (21,1)	38 43,7%)	
Performs teaching activities outside office hours					0,090
No	09 (47,4)	07 (36,8)	03 (15,8)	19 21,6%)	
Yes	17 (24,6)	43 (62,3)	09 (13,1)	69 78,4%)	
Designated leave in the last year*					0,019
No	01 (7,7)	12 (92,3)	0 (0,0)	13 15,0%)	
Yes	24 (32,4)	37 (50,0)	13 (17,6)	74 85,0%)	
Health Monitoring (Chronic Disease)*					0,066
No	14 (21,9)	40 (62,5)	10 (15,6)	64 73,6%)	
Yes	11 (47,8)	10 (43,5)	02 (8,7)	23 26,4%)	
Use of controlled medications*					0,000
No	13 (18,8)	44 (63,8)	12 (17,4)	69 79,3%)	
Yes	03 (16,7)	09 (50,0)	06 (33,3)	18 20,7%)	
Diagnosis of anxiety and/or other emotional disorder*					0,000
No	15 (20,5)	46 (63,0)	12 (16,5)	73 (83,0)	
Yes	11 (73,3)	04 (26,7)	0 (0,0)	15 (17,0)	

*Omissão de resposta para um ou dois participantes.
Fonte: Autores, 2019.

Table 5 - Bivariate association of the hardiness challenge personality classification in faculty. Diamantina, MG, Brazil, 2019.

Variables	Hardiness challenge				p-value
	Low n (%)	Moderate n (%)	High n (%)	Total (n=88)	
Marital status*					0,128
Single	07 (30,4)	12 (52,2)	04 (17,4)	23 (26,4%)	
Married	21 (38,2)	21 (38,2)	13 (23,6)	54 (62,1%)	
Divorced	0 (0,0)	04 (100,0)	0 (0,0)	04 (4,6%)	
Widowed	0 (0,0)	1 (100,0)	0 (0,0)	01 (1,1%)	
Other	0 (0,0)	02 (40,0)	03 (60,0)	05 (5,8%)	
Religion*					0,191
No	05 (27,8)	06 (33,3)	07 (38,9)	18 (20,7%)	
Yes, practitioner	14 (35,0)	17 (42,5)	09 (22,5)	40 (46,0)	
Yes, not practitioner	09 (31,0)	17 (58,6)	03 (10,3)	29 (33,3%)	
Working hours per day					0,053
4 to 7,9 hours	12 (40,0)	08 (26,7)	10 (33,3)	30 (34,1%)	
8 to 11,9 hours	15 (32,6)	24 (52,2)	07 (15,2)	46 (52,3%)	
> 12 hours	01 (8,3)	08 (66,7)	03 (25,0)	12 (13,6%)	
Monthly income*					0,111
2 to 4,9 minimum wages	03 (60,0)	02 (40,0)	0 (0,0)	05 (5,7%)	
5 to 9,9 minimum wages	13 (29,5)	22 (50,0)	09 (20,5)	44 (50,6%)	
> 10 minimum wages	11 (28,9)	17 (44,8)	10 (26,3)	38 (43,7%)	
Health Monitoring (Chronic Disease)					0,036
No	16 (25,0)	31 (48,4)	17 (26,6)	64 (73,6%)	
Yes	12 (52,2)	09 (39,1)	02 (8,7)	23 (26,4%)	

*Skipping a response for one or two participants.
Source: The authors, 2019.

DISCUSSION

Most of the teachers participating in this study are female. It is mainly women who experience difficulties at the family-work interface due to the accumulation of activities and difficulties in balancing family and professional life, which justifies the question about the gender of the participants. Another important piece of information was the average age of the participants. This stage of life is the so-called "peak of productivity and creativity" for many people. Thus, work can give meaning to a person's existence if it allows the development of human potential.

Most professors have taken a vacation in the last year, an important factor that influences well-being and the quality of personal and professional life. Each person develops an individual response pattern to problematic situations, so some strategies are used as an escape valve, which involves seeking leisure or some pleasurable activity. Vacation is one way to reduce stress or to get away from the sources of stress.[7-8]

In this study, the professors had been working at the university for a long time. The working time factor was considered stressful. In this case, the worker lives in an adverse environment, so the longer the exposure time, the greater the wear and tear[9], which was also found in a study of lecturers at the Federal University of Viçosa.[10]

Nowadays, people are increasingly exposed to heavy workloads, long working hours, multiple jobs and extracurricular activities, as well as domestic responsibilities. Each of these activities contributes to work overload and stress, including excessive working hours, an accumulation of tasks and responsibilities, and a lack of time for leisure and socialization.[10-11] There are studies that indicate a relationship between occupational stress and some diseases, but for this to occur, other conditions must be present, such as organic vulnerabilities or inadequate strategies for assessing and dealing with the stressful situation.[12] Therefore, it is essential to study the interaction between aspects of work contexts, attitudes and perceptions of professionals in order to contribute with the improvement of the quality of work without reducing the quality of life of professionals.[13]

It is necessary to recognize the stressors present in the work environment of health educators so that stress management strategies can be identified and applied individually and collectively to minimize stress at work and thereby improve the quality of life and well-being of health professors.[14-15] Among these strategies, resilience has been proposed as a solution for overcoming stressful situations. Resilience is understood as a tendency that manifests itself when risk situations are overcome and ensures the continuity of healthy development.[5,16] A study of nursing faculty in the United States found that psychological resilience was associated with higher quality of life.[17]

In this study, there was an association between hardiness personality and sociodemographic, occupational, and health factors, and it was found that many professors had a high/moderate hardiness rating. It should be emphasized that professionals with hardiness personality are those who are able to overcome or not be overwhelmed because they develop greater resistance to stress. This is because they have distinct personality traits that they have developed over the years and that are evident in their actions when faced with stress. This ability to stand out gives the individual the ability to mitigate any stressful situation and protects against job dissatisfaction. This resilient personality preserves good performance in activities and maintains the individual's health.[13,5]

The hardiness personality should be considered as a strengthening strategy for promoting teacher health by creating environments conducive to the teaching-learning process. Thus, the hardiness personality has been analyzed as a strategy for strengthening other personal characteristics such as performance, self-efficacy, sense of control and reducing the effects of stress, reinforcing the assertion that hardiness facilitates actions that modify the interpretation of stressful circumstances, maintaining or even increasing the health of individuals in the face of stressors and their effects.[13]

Thus, the importance of identifying levels of personality hardiness is essential to promote faculty health and healthy lifestyles. Considering this, educational institutions should be directed to establish programs in which hardiness can be developed, thereby reducing the likelihood of individuals showing negative outcomes.[11,13,15]

Evaluation of the total scores revealed a preponderance of moderate/high hardiness among the teachers surveyed and that this personality was associated with variables such as having children, having taken a vacation in the last year, not having used prescription drugs in the last year, not having been diagnosed with an anxiety disorder, in other words, they exhibited patterns of resilience associated with a state of excellence in face of work-related stress. It is worth noting that this study was a pioneer on the national scene in assessing the hardiness personality in teachers. It is necessary and challenging to develop teachers' psychological resilience to keep or improve their ability to maintain personal and professional well-being, facilitating transformational coping in the face of ongoing work stress and adversity. The limitations of this study are related to the sample surveyed, which was smaller than planned by the sample calculation, as well as the lack of studies conducted at the national and international level.

CONCLUSION

The results of this study showed that the hardiness personality interferes directly and indirectly with the health and well-being of university professors and is related to female professors, with an average age of 46, with a doctorate and working at the university permanent board, with a workload of 40 hours per week in an exclusive dedication regime.

Evaluation of the total hardiness personality scores showed a predominance of high/moderate hardiness among the teachers surveyed and that these typical traits were associated with variables such as having children, having taken a vacation in the last year, not using prescription drugs, and/or not having been diagnosed with an anxiety disorder, in other words, they exhibited patterns of resilience associated with a state of excellence in face of work stress. Institutions should, therefore, establish programs to develop hardness personalities that will contribute to the work process of faculty.

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