

## ALCOHOL ABUSE/DEPENDENCY AND PSYCHOSOCIAL FACTORS IN THE WORKPLACE OF HEALTHCARE PROFESSIONALS

Cinthia Flávia Gomes Diniz\*  
Ada Ávila Assunção\*\*  
Mark Anthony Beininger\*\*\*  
Adriano Marçal Pimenta\*\*\*\*

### ABSTRACT

**Objective:** To estimate the prevalence and factors associated with alcohol abuse/dependency of healthcare professionals. **Methods:** This was a cross-sectional study, developed with 1,776 health professionals of Belo Horizonte city, Brazil, from 2008 to 2009, to whom a structured questionnaire was applied with items on the following characteristics: demographic, socioeconomic, lifestyle, health conditions and working conditions. Alcohol abuse/dependency was diagnosed with the CAGE questionnaire. **Results:** The prevalence of alcohol abuse/dependency was 7.2%. After the adjustment of the final model, the following factors increased the chance of alcohol abuse/dependency: atypical work hours (OR: 1.64; 95% CI: 1.08-2.49), male gender (OR: 3.99; 95% CI: 2.62-6.07), diagnosis of common mental disorder (OR: 2.44; 95% CI: 1.52-3.89), smoker (OR: 2.41; 95% CI: 1.52-3.83) and ex-smoker (OR: 1.94; 95% CI: 1.18-3.23). On the other hand, the psychological demand at work (OR: 0.89; 95% CI: 0.81-0.97) decreased the chance of alcohol abuse/dependency. **Conclusion:** The results reinforce the problem of alcohol abuse/dependency of healthcare professionals. Moreover, work characteristics may contribute to the onset to this problem, which should alert managers to formulate actions of occupational health promotion.

**Keywords:** Alcoholism. Health Professionals. Working Conditions.

### INTRODUCTION

Excess of alcohol consumption is one of the major risk factors for chronic diseases, and the chances of suicide attempts, abuse, victimization and crime are also increased<sup>(1)</sup>. The losses to society are known due to the costs of accidents involving motor vehicles, hospitalizations for treatment and a decrease of work productivity<sup>(2,3)</sup>.

Different hypotheses have been presented to understand the associations between working conditions, health situation and substance abuse in adults. Working conditions are considered as mediators in relationships between social and economic determinants and individuals' habits, but on the other hand, also explain, separately, greater prevalence of morbidities in specific occupational groups associated with substance abuse<sup>(4)</sup>.

Alcohol abuse/dependency observed in health professionals, particularly in Brazil, presents a high magnitude, therefore viewed as an important public health problem, and thus, the subject of scientific studies in recent years<sup>(5,6)</sup>.

However, knowledge about the association between working conditions and alcohol abuse/dependency in this portion of workers is still incipient.

Thus, the present study aimed to estimate the prevalence and factors associated with alcohol abuse/dependency of healthcare professionals inserted in the municipal health care system of a Brazilian metropolis.

### METHODOLOGY

This was a cross-sectional study carried out between 2008 and 2009 involving health professionals from the Municipal Healthcare Network of the south-eastern capital city of Belo Horizonte, Minas Gerais, Brazil.

The population was composed of workers who were in effective exercise at the time of data collection, regardless of the employment relationship (permanent, temporary, probationary), which corresponded to 13,602 workers. These professionals possessed technical and college level skills and were distributed across the city's nine regional health system districts.

\*Nurse. Master's in nursing, Hospital das Clínicas, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil. E-mail: cinthiaflaviag@yahoo.com.br ORCID ID: <https://orcid.org/0000-0001-5405-9057>

\*\*Physician. Doctor in Ergonomics, Department of Preventive and Social Medicine, School of Medicine, UFMG, Belo Horizonte, MG, Brazil. E-mail: adavila@medicina.ufmg.br ORCID ID: <https://orcid.org/0000-0003-2123-0422>

\*\*\*Nurse. Doctor in Nursing, Department of Maternal Child Nursing and Public Health, School of Nursing, UFMG, Belo Horizonte, MG, Brazil. E-mail: mark@enf.ufmg.br ORCID ID: <https://orcid.org/0000-0002-0980-8976>

\*\*\*\*Nurse. Doctor in Nursing, Department of Maternal Child Nursing and Public Health, School of Nursing, UFMG, Belo Horizonte, MG, Brazil. E-mail: adrianomp@ufmg.br ORCID ID: <https://orcid.org/0000-0001-7049-7575>

The study addressed several health outcomes, including alcohol abuse/dependency. Thus, we used a sample calculation for finite populations and without replacement. For that, we considered a 50% proportion size with a 5% significance level and 2.5% accuracy for a total population of 13,602 workers. We decided to add 50% more than the original calculation to take into consideration replacement of potential refusals, losses and clerical errors. The final sample size was 2,205 workers.

Furthermore, during the sampling process, we used a stratified random sampling method, performed in three stages. The first stage was the identification of the full-time employees within the municipal healthcare network using a list of employees made available from the department of human resources. The second stage consisted of proportional stratification of the study population according to the following criteria: 1) the city's nine regional health system districts, 2) the healthcare level of complexity (primary care or secondary care) and 3) the healthcare occupational group. Finally, the third stage was the selection of the study participants from the list of professionals by means of a random numbers scheme generated by Epi Info software, version 6.0.

The data collection was carried out with the application of a face-to-face questionnaire by trained interviewers after previous contact and confirmation of the participant's presence in the health unit. Workers not interviewed were included to the list of losses after third attempts to contact them. In addition, professionals absent due to vacation time, transfer of sector or unit, retirement or death were replaced by a new random draw, considering the stratification parameters.

The outcome variable, alcohol abuse/dependency, was defined by using CAGE (Cut down, Annoyed by criticism, Guilty e Eye-opener) Questionnaire. CAGE is composed of four, closed-ended, yes or no questions: 1) Have you ever felt that you should reduce the amount of alcohol or stop drinking? 2) Do people annoy you because they criticize your drinking? 3) Do you feel upset with yourself by the way you usually drink? and 4) Do you usually drink in the morning to reduce nervousness or hangover? Subjects who answered with 2 or more positive

responses to the instrument were included in the alcohol abuse/dependency category<sup>(7)</sup>.

The choice of exposure variables was based on the multilevel model of workers' mental health determinants proposed by Alan Marchand<sup>(8)</sup>. Therefore, in the following study, the proximal level 2 variables were: gender, age, physical activity, social activities, educational level, common mental disorders (CMD) from the Self Report Questionnaire (SRQ-20)<sup>(9)</sup> and smoking. On the other hand, the proximal variables from level 1 were the familiar characteristics: marital status, family income and number of children. Regarding the intermediate variables, the following variables were included as to the working conditions: working hours, atypical working hours (shift rotation and shift duty), safety of personal belongings at work, verbal/physical threats at work, employment insecurity/instability (contracted workers and trainees were included in the "Yes" category, while the other types of worker categories were considered in the "No" category), work reward (effort reward imbalance model according to Siegrist)<sup>(10)</sup>, social support at work (obtained from the Job Content Questionnaire - JCQ)<sup>(11)</sup>, skills and ability to work, decision making at work, physical and psychological demands. Finally, the distal variable refers to the labor structure, and the only one available in the data collection instrument in this study was the occupational group: health support (biochemists and laboratory technicians; upper and middle level professionals involved in surveillance (community health agents, administrative and general health services and other) and health professionals (physicians, nurses and nursing technicians, dentists and dental technicians, physiotherapists, occupational therapists, psychologists and the like as well as college level education professionals).

Regarding data analysis, the characterization of the sample was performed by calculating the absolute and relative frequencies of social-demographic variables, lifestyle, health and work conditions, and acts of violence. The association of each of these variables with alcohol abuse/dependency was tested using the simple logistic regression technique.

Finally, a multivariate statistical model was constructed using a logistic regression technique,

based on the theoretical model adapted from Marchand<sup>(8)</sup>, previously described. The variables were divided into: distal level (work structure - model 1), intermediate level (working conditions - model 2), proximal level 1 (family characteristics - model 3) and proximal level 2 (individual characteristics - model 4).

Odds Ratios (OR) and their respective 95% confidence intervals (95% CI) were used as strength measures of association and adjusted for variables at each level and the previous level in the multivariate model.

The level of statistical significance was set at 5%. All statistical analyses were conducted using the Data Analysis and Statistical Software (Stata) (version 13.1).

This study was approved by the Institutional Review Board under protocols 542/2007 and 054/2006. All participants were informed about the research objectives and were asked to sign a Term of Informed Consent.

## RESULTS

Of the 2,205 health professionals selected for the study, 23 refused to participate and 394 were considered as losses. In addition, 20 individuals who did not complete the item "gender" and 12 people without information on "age", were excluded. Thus, the final sample was 1,776 participants, of which 1,273 (71.7%) were women and 503 (28.3%) were men. The prevalence of alcohol abuse/dependency was 7.2%.

The demographic, social and economic, lifestyle characteristics and participants' CMD diagnosis are presented in Table 1. We observed that, in the bivariate level, male gender, diagnosis of CMD, to be an ex-smoker or smoker, was related to alcohol abuse/dependence ( $p < 0.05$ ).

**Table 1.** Demographic, social economic, lifestyle characteristics and diagnosis of Common Mental Disorders and their associations with alcohol abuse/dependency. Belo Horizonte, Minas Gerais, 2009.

Variables	Population		Alcohol abuse/dependency		
	n (%)	%	OR	95% CI	p-value
<b>Gender</b>					
Female	1273 (71.7)	4.2	1.00	-	-
Male	503 (28.3)	14.6	3.83	2.65-5.54	<0.001
<b>Age, y</b>					
16 - 29	338 (19)	7.1	1.00	-	-
30 - 39	435 (24.5)	8.7	1.25	0.74-2.13	0.407
40 - 49	579 (32.6)	7.6	1.08	0.64-1.80	0.781
50 - 59	373 (21)	4.6	0.63	0.33-1.18	0.149
≥ 60	51 (2.9)	7.8	1.11	0.37-3.35	0.848
<b>Conjugal status</b>					
Single	807 (45.4)	6.8	1.00	-	-
In a relationship	969 (54.6)	7.4	1.12	0.76-1.58	0.617
<b>Family income</b>					
≤ 2 minimum wages	644 (36.3)	7.6	1.00	-	-
2-4 minimum wages	494 (27.8)	8.1	1.07	0.69-1.65	0.761
≥ 4 minimum wages	638 (35.9)	6	0.77	0.50-1.19	0.241
<b>Social activities</b>					
No	858 (48.3)	6.5	1.00	-	-
Yes	918 (51.7)	7.7	1.20	0.83-1.73	0.324
<b>Education level</b>					
Elementary and high school	712 (40.1)	8.4	1.00	-	-
Technical schooling	293 (16.5)	6.5	0.75	0.44-1.29	0.300
College complete and incomplete	325 (18.3)	7.1	0.83	0.50-1.36	0.458
Graduate school	446 (25.1)	5.6	0.65	0.40-1.04	0.075
<b>CMD</b>					
No	1382 (77.8)	6.3	1.00	-	-
Yes	394 (22.2)	10.1	1.68	1.14-2.50	0.009
<b>Smoking</b>					
Non-smoker	1212 (68.3)	5.1	1.00	-	-
Ex-smoker	290 (16.3)	9.7	1.98	1.24-3.16	0.004
Smoker	274 (15.4)	13.5	2.89	1.88-4.45	<0.001
<b>Physical activity</b>					
≥ 3 times a week	419 (23.6)	6.7	1.00	-	-
1-2 times a week	593 (33.4)	8.4	1.29	0.79-2.08	0.305
Never	764 (43)	6.4	0.96	0.59-1.55	0.858

**Note:** OR = Odds Ratio; 95% CI = 95% Confidence Interval; CMD Common Mental Disorder; p-value from simple logistic regression; \*Minimum wage at the time this study was conducted was R\$ 415,00 (US\$ 205,00).

About the work characteristics of the participants, they are presented in Table 2. Atypical work hours and job insecurity/instability were associated with alcohol abuse/dependency, and a bivariate level ( $p < 0.05$ ).

**Table 2.** Individual and family characteristics and their associations with alcohol abuse/dependency. Belo Horizonte, Minas Gerais, 2009.

Variables	Population		Alcohol abuse/dependency		
	n (%)	%	OR	95% CI	p-value
<b>Occupational groups</b>					
Health support	1162 (65.4)	7.7	1.00	-	-
Health professionals	614 (34.6)	6.2	0.80	0.54-1.18	0.254
<b>Working hours</b>					
≤ 20	88 (5.0)	3.4	1.00	-	-
21-40	878 (49.4)	7.7	2.38	0.73-7.72	0.149
≥ 40	810 (45.6)	6.9	2.10	0.64-6.87	0.218
<b>Atypical working hours</b>					
No	1333 (75.1)	6.3	1.00	-	-
Yes	443 (24.9)	9.7	1.60	1.09-2.35	0.017
<b>Safety of personal belongings at work</b>					
No	1170 (65.9)	7.1	1.00	-	-
Yes	606 (34.1)	7.3	1.02	0.70-1.50	0.897
<b>Verbal/physical threats at work</b>					
No	1186 (66.8)	6.4	1.00	-	-
Yes	590 (33.2)	8.6	1.38	0.95-2.00	0.086
<b>Employment insecurity/instability</b>					
No	1210 (68.1)	5.9	1.00	-	-
Yes	566 (31.9)	9.9	1.76	1.22-2.54	0.002
<b>Work reward</b>					
Low	1058 (59.6)	7.9	1.00	-	-
High	718 (40.4)	6.0	0.74	0.50-1.08	0.119
<b>Social support at work</b>					
Low	885 (53.8)	8.0	1.00	-	-
High	760 (46.2)	6.2	0.76	0.52-1.11	0.151

**Note:** OR = Odds Ratio; 95% CI = 95% Confidence Interval; p-value from simple logistic regression.

Table 3 presents the results of logistic regression models. In model 1, the relationship between alcohol abuse/dependency and occupational groups (labor structure) was evaluated, without adjustment for variables of working, individual and family conditions. Thus, there was no significant association between alcohol abuse/dependency and occupation type.

Model 2 included the variables occupational groups [work structure (distal)] and working conditions (intermediary). In this manner, it was possible to verify if the work structures and the restrictions of resources in the workplace contributed to the disruptions by use of alcohol, without taking into account the individual and familiar aspects. When analyzing the data, we observed that workers with insecurity/instability employment relationships had a greater chance of alcohol abuse/dependency than those whose relationships were safer (OR: 1.90, 95% CI: 1.27-2.86). The chance of alcohol abuse/dependency in the group working during atypical hours were 68% greater when compared to the group which reported working during

regular times (OR: 1.68, 95% CI: 1.13-2.52).

In model 3, the family variables (proximal) were included. It was observed that atypical working hours (OR: 1.67, 95% CI: 1.12-2.49) and insecurity/instability employment (OR: 2.08, 95% CI: 1.34-3.23) remain independently associated with alcohol abuse/dependency.

Finally, in model 4, the individual variables were also included. Here, it was possible to assess whether individual, family and social network factors modulated the effects of resource constraints in the workplace. We observed that employment insecurity/instability lost statistical significance ( $p = 0.174$ ), but atypical working hours remained associated to alcohol abuse/dependency (OR: 1.64; IC95%: 1.08-2.49). Psychological demand at work was shown to be a factor inversely associated with alcohol abuse/dependency. More specifically, the increase of one unit of the variable “psychological demand” decreased by 11% the chance of alcohol abuse/dependency (OR: 0.89; 95% CI: 0.81-0.97).

**Table 3.** Multilevel logistic regression models for alcohol abuse/dependency. Belo Horizonte, Minas Gerais, 2009.

Variables	Model 1		Model 2		Model 3		Model 4	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
<b>DISTAL</b>								
<b>Occupational groups</b>								
Health support	1.00	-	1.00	-	1.00	-	1.00	-
Health professionals	0.80	0.54-1.18	0.95	0.60-1.49	0.97	0.59-1.58	1.13	0.65-1.96
<b>INTERMEDIATE</b>								
<b>Working hours</b>								
≤ 20	-	-	1.00	-	1.00	-	1.00	-
21-40	-	-	2.70	0.82-8.89	2.55	0.77-8.40	2.62	0.76-9.11
≥ 40	-	-	2.15	0.64-7.18	2.09	0.62-7.00	2.09	0.59-7.35
<b>Atypical working hours</b>								
No	-	-	1.00	-	1.00	-	1.00	-
Yes	-	-	1.68	1.13-2.52	1.67	1.12-2.49	1.64	1.08-2.49
<b>Safety of personal belongings at work</b>								
No	-	-	1.00	-	1.00	-	1.00	-
Yes	-	-	0.98	0.64-1.47	0.97	0.64-1.48	1.01	0.64-1.59
<b>Verbal/physical threats at work</b>								
No	-	-	1.00	-	1.00	-	1.00	-
Yes	-	-	1.40	0.93-2.12	1.40	0.92-2.13	1.22	0.78-1.91
<b>Employment insecurity/instability</b>								
No	-	-	1.00	-	1.00	-	1.00	-
Yes	-	-	1.90	1.27-2.86	2.08	1.34-3.23	1.41	0.86-2.31
<b>Work reward</b>								
Low	-	-	1.00	-	1.00	-	1.00	-
High	-	-	0.69	0.45-1.04	0.67	0.44-1.02	0.66	0.42-1.03
<b>Social support at work</b>								
Low	-	-	1.00	-	1.00	-	1.00	-
High	-	-	0.74	0.49-1.12	0.75	0.50-1.14	0.73	0.48-1.13
<b>Skills and abilities</b>								
Decision making	-	-	1.01	0.88-1.15	1.02	0.89-1.17	1.02	0.89-1.18
<b>Physical demand</b>	-	-	0.95	0.84-1.08	0.94	0.83-1.07	0.97	0.85-1.11
<b>Psychological demand</b>	-	-	0.92	0.84-1.00	0.92	0.85-1.01	0.89	0.81-0.97
<b>PROXIMAL 1</b>								
<b>Conjugal status</b>								
Single	-	-	-	-	1.00	-	1.00	-
In a relationship	-	-	-	-	1.09	0.74-1.62	1.04	0.69-1.58
<b>Family income</b>								
≤ 2 minimum wages	-	-	-	-	1.00	-	1.00	-
2-4 minimum wages	-	-	-	-	1.30	0.80-2.11	1.22	0.74-2.02
≥ 4 minimum wages	-	-	-	-	1.05	0.59-1.86	0.97	0.49-1.95
<b>Number of children</b>	-	-	-	-	1.07	0.92-1.24	1.14	0.96-1.37
<b>PROXIMAL 2</b>								
<b>Gender</b>								
Female	-	-	-	-	-	-	1.00	-
Male	-	-	-	-	-	-	3.99	2.62-6.07
<b>Age</b>	-	-	-	-	-	-	0.99	0.97-1.01
<b>Physical activity</b>								
≥ 3 times a week	-	-	-	-	-	-	1.00	-
1-2 times a week	-	-	-	-	-	-	1.13	0.68-1.88
Never	-	-	-	-	-	-	1.11	0.65-1.90
<b>Social activities</b>								
No	-	-	-	-	-	-	1.00	-
Yes	-	-	-	-	-	-	1.45	0.97-2.17
<b>Education level</b>								
Elementary and high school	-	-	-	-	-	-	1.00	-
Technical schooling	-	-	-	-	-	-	1.03	0.57-1.86
College Complete and	-	-	-	-	-	-	1.10	0.61-2.00
Incomplete	-	-	-	-	-	-	0.76	0.36-1.62
Graduate school	-	-	-	-	-	-	-	-
<b>CMD</b>								
No	-	-	-	-	-	-	1.00	-
Yes	-	-	-	-	-	-	2.44	1.52-3.89
<b>Smoking</b>								
Non-smoker	-	-	-	-	-	-	1.00	-
Ex-smoker	-	-	-	-	-	-	1.94	1.18-3.23
Smoker	-	-	-	-	-	-	2.41	1.52-3.83

Note: OR = Odds Ratio; 95% CI = 95% Confidence Interval.

Still in model 4, some individual characteristics were also independently associated with alcohol abuse/dependency. The chance of alcohol abuse/dependency was greater

in males (OR: 3.99, 95% CI: 2.62-6.07) and in those having CMD (OR 2.44, 95% CI: 1.52-3.89). Workers who smoked (OR: 2.41, 95% CI: 1.52-3.83) and those who were ex-smokers (OR: 1.94, 95% CI: 1.18-3.23) had a greater chance of alcohol abuse/dependency compared to their non-smoker co-workers.

## DISCUSSION

In the present study, prevalence of alcohol abuse/dependency was 7.2% among the health care network of workers of the Brazilian metropolis, with individual factors (male gender, current smoker, ex-smoker and CMD) and work factors (atypical working hours and psychological demand) independently associated with the outcome.

There are difficulties of comparison, since most of the articles published on the subject focus on one or another professional category of the health sector, or the sample studied by the authors refers to the population of workers from a single sub-sector or specific level of the health care network. In a sample of primary health care workers from the state of Bahia, for example, the authors identified a 1.3% prevalence of alcohol abuse/dependency, which was well below that observed in the present study<sup>(12)</sup>. However, again it is not possible to interpret the discrepancies because the occupational classification followed different criteria from the classification used in this study. In addition, our sample includes professionals from the secondary and tertiary levels of the national health care network, while the study from Bahia focused exclusively on primary health care professionals. It is known that there are differences in the characteristics and work processes depending on the level of the health care network in which the services are provided, a factor that may influence a lower or higher exposure to factors related to alcohol consumption<sup>(3)</sup>.

Gender differentials in substance use are reproduced in samples of health workers<sup>(13)</sup>. The assumptions about gender configurations that structure social and cultural variations between men and women are useful in interpreting these results. Social influences from childhood lead men and women to develop different ways of experiencing the world, supporting the

construction of differentiated confrontations styles<sup>(14)</sup>. Refuge in the effects of chemical substances is more accepted for men than for women. However, additional research on the connections between gender and alcohol consumption is needed to assess the influence of factors such as pharmacokinetics, pharmacodynamics, brain dimorphism and hormones, which generally have gender-specific specificities.

Current cigarette uses increased reporting by 141% the likelihood of alcohol abuse/dependency. In the case of ex-smokers, the chance of this outcome increased by 1.94 times when compared to non-smokers, which is in agreement with published results consisting of health worker samples<sup>(13)</sup>. It is no surprise that a high proportion of alcohol-dependent individuals are also nicotine dependent. Nicotine use decreases the sedative effect of alcohol, which likely encouraging an increase of alcohol abuse. In summary, alcohol and nicotine interact to produce tolerance and cross-reactivity<sup>(15)</sup>.

Alcohol addiction can triple the chance of affective mood and anxiety disorders. As reported in the literature<sup>(15)</sup>, CMD increased 144% the chance of alcohol abuse/dependency. This comorbidity situation may evolve to a point and gradually worsen the clinical picture, induce suicidal thoughts, exacerbate social functioning, and increase the demand for health services<sup>(16)</sup>.

Atypical working hours increased the chance of alcohol abuse/dependency by 64%, in order to converge with the results obtained in a study that evaluated the effect of a non-standardized work schedule and health behavior in young adults in the United States<sup>(17)</sup>. There is an expressive contingent of health workers exposed to this regime of temporal organization, because health services are essential for society that counts on its uninterrupted functioning. The emotional labor, related to sleep deprivation, when combined with the effects of stressors present in the environment and health facilities, may explain the use of the sedative effects of alcohol<sup>(18)</sup>.

The psychological demands of task work were a factor inversely associated with alcohol abuse/dependency. Again, no results were found about healthcare professionals. Nevertheless, in a cohort of Canadian workers<sup>(8)</sup>, the increase of

one unit in the level of psychological demand decreased by 9% the prevalence of alcohol abuse. In fact, responding to the psychic demands of tasks paves the way towards building skills and stimulates creativity, resulting in beneficial effects of individuals' mental health who feel motivated to deal, positively, with the vicissitudes of the environment, rather than using substances as resources to cushion tensions and cope with other negative effects of work. However, this interpretation warrants caution, since the effect of the healthy worker is a potent bias in occupational studies. In addition, it has also been observed that tasks performed under high psychic demand were associated with a greater prevalence of alcohol consumption<sup>(19)</sup>. It is possible that the individuals involved in these situations consume more alcohol in the face of temporal pressures, work rhythm, emotional load, as previously mentioned, in addition to other constraints.

Worker health surveillance programs are indicated in policies that advocate the consolidation of health reforms worldwide. Offering employee access to human resources is not enough to ensure the quality of health systems. The global agenda for 2030<sup>(20)</sup> indicates strengthening and supporting this occupational group, including actions targeting health and safety at work. Numerous intervention measures are known in the case of alcohol use, ranging from clinical treatment for comorbidities, in our example, CMD, to actions towards reducing tobacco use.-

The random and representative sample of the universe of public sector workers in a Brazilian metropolis is an advantage that deserves to be

highlighted in this study, since it avoided information bias and allowed us to explore different dimensions of work possibly associated with the harmful habit investigated. CAGE is a recommended tool for estimating alcohol abuse/dependency and its qualities are recognized for simplicity in application. However, it is worth alerting regarding the limits of this tool, as it is not intended for use in clinical diagnosis. In addition, the design does not allow for establishing hypotheses concerning the causality between exposure and outcome.

## FINAL CONSIDERATIONS

The results of the present study reinforce hypotheses of the influence of working conditions over adult health events. Future research is warranted to better elucidate the identification of an inverse association between psychological demand and alcohol abuse/dependency. The paradox identified is: the prevalence of alcohol abuse/dependency in a professional category whose role is considered fundamental in the design and execution of programs to prevent such exposure. It is hoped that the results identify ways to justify and elaborate comprehensive approaches of the habit of consuming alcoholic beverages among health professionals.

## ACKNOWLEDGMENTS

This study was funded by the “*Fundação de Amparo à Pesquisa de Minas Gerais*” (FAPEMIG - Grant: EDT 3339-2006). Our thanks to the workers who participated in the study.

---

## ABUSO/DEPENDÊNCIA DE ÁLCOOL E FATORES PSICOSSOCIAIS DO TRABALHO EM PROFISSIONAIS DE SAÚDE

### RESUMO

**Objetivo:** Estimar a prevalência e os fatores associados ao abuso/dependência de álcool em profissionais de saúde. **Métodos:** Estudo transversal desenvolvido com 1.776 profissionais de saúde de Belo Horizonte/MG entre 2008 a 2009, aos quais foi aplicado um questionário estruturado com itens sobre características demográficas, socioeconômicas, do estilo de vida, das condições de saúde e das condições de trabalho. O abuso/dependência de álcool foi diagnosticado com o uso do questionário CAGE. **Resultados:** A prevalência de abuso/dependência de álcool foi de 7,2%. Após os ajustes do modelo final, os seguintes fatores aumentaram a chance de abuso/dependência de álcool: o horário de trabalho atípico (OR: 1,64; IC 95%: 1,08-2,49), gênero masculino (OR: 3,99; IC 95%: 2,62-6,07), Transtornos Mentais Comuns (OR: 2,44; IC 95%: 1,52-3,89), tabagismo (OR: 2,41; IC 95%: 1,52-3,83) e ex-tabagismo (OR: 1,94; IC 95%: 1,18-3,23). Em contrapartida, a demanda psicológica no trabalho diminuiu a chance de abuso/dependência de álcool (OR: 0,89; IC 95%: 0,81-0,97). **Conclusão:** É imprescindível levar em consideração o abuso/dependência de álcool

entre os profissionais de saúde. Além disso, as características do trabalho podem contribuir para o início desse problema, o que gera um alerta para os gestores na formulação de políticas de promoção da saúde do trabalhador.

**Palavras-chave:** Alcoolismo. Profissionais de saúde. Condições de Trabalho.

## ABUSO/DEPENDENCIA DE ALCOHOL Y FACTORES PSICOSOCIALES DEL TRABAJO EN PROFESIONALES DE SALUD

### RESUMEN

**Objetivo:** estimar la prevalencia y los factores asociados al abuso/dependencia de alcohol en profesionales de salud. **Métodos:** estudio transversal desarrollado con 1.776 profesionales de salud de la ciudad de Belo Horizonte, Brasil, entre 2008 y 2009, a los cuales fue aplicado un cuestionario estructurado con ítems sobre características demográficas, socioeconómicas, del estilo de vida, de las condiciones de salud y condiciones de trabajo. El abuso/dependencia de alcohol fue diagnosticado con el uso del cuestionario CAGE. **Resultados:** la prevalencia de abuso/dependencia de alcohol fue de 7.2%. Tras ajustes en el modelo final, los siguientes factores aumentaron la probabilidad de abuso/dependencia de alcohol: horario de trabajo atípico (OR: 1,64; IC 95%: 1,08-2,49), sexo masculino (OR: 3,99; IC 95%: 2,62-6,07), trastornos mentales comunes (OR: 2,44; IC 95%: 1,52-3,89), tabaquismo (OR: 2,41; IC 95%: 1,52-3,83) y ex-tabaquismo (OR: 1,94; IC 95%: 1,18-3,23). Sin embargo, la demanda psicológica en el trabajo disminuyó la probabilidad de abuso/dependencia de alcohol (OR: 0,89; IC 95%: 0,81-0,97). **Conclusión:** es importante tener en cuenta el abuso/dependencia de alcohol entre los profesionales de salud. Además, las características del trabajo pueden contribuir para el inicio de este problema, lo que genera una alerta a los gestores en la elaboración de políticas de promoción de la salud del trabajador.

**Palabras clave:** Alcoholismo. Profesionales de salud. Condiciones de trabajo.

### REFERENCES

1. Sung YK, La Flair LN, Mojtabai R, Lee LC, Spivak S, Crum RM. The Association of Alcohol Use Disorders with Suicidal Ideation and Suicide Attempts in a Population-Based Sample with Mood Symptoms. *Arch Suicide Res*. 2016 [cited in 2019 May]; 20(2):219-32. doi: <https://doi.org/10.1080/13811118.2015.1004489>.
2. Maclean JC, French MT. Personality disorders, alcohol use, and alcohol misuse. *Soc Sci Med*. 2014 [cited in 2019 May]; 120:286-300. doi: <https://doi.org/10.1016/j.socscimed.2014.09.029>.
3. Silva RR, Gavioli A, Maragoni SR, Hungaro AA, Santa CJ, Oliveira MLF. Risk related to consumption of tobacco and alcohol in men metallurgical workers. *Cienc Cuid Saude*. 2019 [cited in 2019 May]; 18(3):e44838. doi: <http://dx.doi.org/10.4025/ciencucuidsaude.v18i3.44838>.
4. Schrijvers CT, Van de Mheen HD, Stronks K, Mackenbach JP. Socioeconomic inequalities in health in the working population: the contribution of working conditions. *Int J Epidemiol*. 1998 [cited in 2018 Dec]; 27(6):1011-8. doi: <https://dx.doi.org/10.1093/ije/27.6.1011>.
5. Rocha PR, David HMSL. Patterns of alcohol and drug consumption in healthcare professionals: a portrait of students of lato sensu courses in a public institution. *SMAD Rev Eletrônica Saúde Mental Álcool Drog* [online]. 2015 [citado em 2019 Maio]; 11(1):42-8. doi: <http://dx.doi.org/10.11606/issn.1806-6976.v11i1p41-48>.
6. Junqueira MAB, Ferreira MCM, Soares GT, Brito IE, Pires PLS, Santos MA et al. Alcohol use and health behavior among nursing professionals. *Rev Esc Enferm USP* [online]. 2017 [citado em 2019 Maio]; 51:e03265. doi: <http://dx.doi.org/10.1590/s1980-220x2016046103265>.
7. Williams N. The CAGE questionnaire. *Occup Med (Lond)*. 2014; [cited in 2019 May]; 64(6):473-4. doi: <https://doi.org/10.1093/occmed/kqu058>.
8. Marchand A, Blanc ME. Occupation, work organization conditions, and alcohol misuse in Canada: an 8-year longitudinal study. *Subst Use Misuse*. 2011 [cited in 2018 Dec]; 46(8):1003-14. doi: <https://doi.org/10.3109/10826084.2010.543249>.
9. Paraventi F, Cogo-Moreira H, Paula CS, de Jesus Mari J. Psychometric properties of the self-reporting questionnaire (SRQ-20): measurement invariance across women from Brazilian community settings. *Compr Psychiatry*. 2015 [cited in 2019 May]; 58:213-20. doi: <https://doi.org/10.1016/j.comppsy.2014.11.020>.
10. Siegrist J, Li J. Work Stress and Altered Biomarkers: A Synthesis of Findings Based on the Effort-Reward Imbalance Model. *Int J Environ Res Public Health*. 2017 [cited in 2019 May]; 14(11):pii:E1373. doi: <https://doi.org/10.3390/ijerph14111373>.
11. Santos KOB, Araújo TM, Carvalho FM, Karasek R. The job content questionnaire in various occupational contexts: applying a latent class model. *BMJ Open*. 2017 [cited in 2019 May]; 7(5):e013596. doi: <http://dx.doi.org/10.1136/bmjopen-2016-013596>.
12. Barbosa GB, Correia AKS, Oliveira LMM, Santos VC, Ferreira SMS, Júnior DFM et al. Trabalho e saúde mental dos profissionais da Estratégia Saúde da Família em um município do Estado da Bahia, Brasil. *Rev Bras Saude Ocup*. 2012 [cited in 2018 Dec]; 37(126):306-15. doi: <http://dx.doi.org/10.1590/S0303-76572012000200012>.
13. Perry L, Xu X, Gallagher R, Nicholls R, Sibbritt D, Duffield C. Lifestyle Health Behaviors of Nurses and Midwives: The 'Fit for the Future' Study. *Int J Environ Res Public Health*. 2018 [cited in 2019 May]; 15(5):pii:E945. doi: <https://doi.org/10.3390/ijerph15050945>.
14. Howard LM, Ehrlich AM, Gamlen F, Oram S. Gender-neutral mental health research is sex and gender biased. *Lancet Psychiatry*. 2017 [cited in 2019 May]; 4(1):9-11. doi: [https://doi.org/10.1016/S2215-0366\(16\)30209-7](https://doi.org/10.1016/S2215-0366(16)30209-7).
15. Lin JC, Kamo MP, Grella CE, Ray LA, Liao DH, Moore AA. Psychiatric correlates of alcohol and tobacco use disorders in U.S. adults aged 65 years and older: results from the 2001-2002 National Epidemiologic Survey of Alcohol and Related Conditions. *Am J Geriatr Psychiatry*. 2014 [cited in 2019 May]; 22(11):1356-63. doi: <https://doi.org/10.1016/j.jagp.2013.07.005>.
16. Baker AL, Thornton LK, Hiles S, Hides L, Lubman DI. Psychological interventions for alcohol misuse among people with co-occurring depression or anxiety disorders: a systematic review. *J Affect Disord*. 2012 [cited in 2018 Dec]; 139(3):217-229. doi: <https://doi.org/10.1016/j.jad.2011.08.004>.
17. Winkler MR, Mason S, Laska MN, Christoph MJ, Neumark-Sztainer D. Does non-standard work mean non-standard health? Exploring links between non-standard work schedules, health behavior, and well-being. *SSM Popul Health*. 2017 [cited in 2019 May]; 4:135-143. doi: <https://doi.org/10.1016/j.ssmph.2017.12.003>.
18. Buchvold HV, Pallesen S, Oyane NM, Bjorvatn B. Associations between night work and BMI, alcohol, smoking, caffeine and exercise--a cross-sectional study. *BMC Public Health*. 2015 [cited in 2019 May]; 15:1112. doi: <https://doi.org/10.1186/s12889-015-2470-2>.
19. Kouvonen A, Kivimäki M, Cox SJ, Poikolainen K, Cox T, Vahtera J. Job strain, effort-reward imbalance, and heavy drinking: a study in 40,851 employees. *J Occup Environ Med*. 2005 [cited in 2018 Dec]; 47(5):503-13. doi: <https://doi.org/10.1097/01.jom.00000161734.81375.25>.
20. World Health Organization. Global strategy on human resources for health: workforce 2030. Geneva, 2016. [cited in 2018 Dec]; Available from:



[https://www.who.int/hrh/resources/global\\_strategy\\_workforce2030\\_14\\_print.pdf?ua=1](https://www.who.int/hrh/resources/global_strategy_workforce2030_14_print.pdf?ua=1).

---

**Corresponding author:** Adriano Marçal Pimenta. Universidade Federal de Minas Gerais, Escola de Enfermagem, Departamento de Enfermagem Materno-Infantil e Saúde Pública, Av. Prof. Alfredo Balena, 190, 4º andar, sala 422 – Santa Efigênia, Belo Horizonte, Minas Gerais, Brasil. CEP: 30130-100. E-mail: [adrianomp@ufmg.br](mailto:adrianomp@ufmg.br)

**Submitted:** 21/10/2018

**Accepted:** 24/05/2019