

# Association between job satisfaction and alcohol use: a systematic review

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**Abstract:** Work is one of the main orienters of mental life, making it relevant to investigate the relationship between mental disorders, especially alcohol use, and job satisfaction. Objective: To carry out a systematic review of scientific articles on job satisfaction and alcohol use. Method: Articles were searched in the databases MEDLINE (PubMed), Web of Science, and Scopus, in the English, Spanish and Portuguese languages. The review was based on the PRISMA criteria, from 2008 to 2017. Results: Evidence of a moderate positive correlation was found in cross-cutting, but that changes over time, and that the relationship between job satisfaction and use of alcohol is moderated by burnout, working conditions, job demand and control, relationship with the leader, social support and work climate. Conclusion: The results reaffirm the need to explore the theme to design intervention strategies in the context of work.

**Keywords:** alcohol drinking; substance use; job satisfaction; mental health at work; working environment.

## ASSOCIAÇÃO ENTRE A SATISFAÇÃO NO TRABALHO E USO DE ÁLCOOL: REVISÃO SISTEMÁTICA

**Resumo:** O trabalho é um dos principais orientadores da vida mental, tornando-se relevante investigar a relação entre transtornos mentais, sobretudo o uso de álcool, e satisfação no trabalho. Objetivo: Realizar revisão sistemática de artigos científicos sobre a satisfação no trabalho e o uso de álcool. Método: Foram pesquisados artigos nos bancos de dados MEDLINE (PubMed), Web of Science e Scopus, nas línguas inglesa, espanhola e portuguesa. A revisão embasou-se nos critérios do PRISMA, no período de 2008 a 2017. Resultados: Encontraram-se evidências de correlação positiva moderada em recortes transversais, mas que se modificam ao longo do tempo, e constatou-se que a relação entre satisfação no trabalho e uso de álcool é moderada por *burnout*, condições de trabalho, demanda e controle do trabalho, relacionamento com o líder, suporte social e clima de trabalho. Conclusão: Os resultados reafirmam a necessidade de explorar o tema para traçar estratégias de intervenção no contexto do trabalho.

**Palavras-chave:** consumo de bebidas alcoólicas; uso de substância; satisfação no trabalho; saúde mental no trabalho, ambiente de trabalho.

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## ASOCIACIÓN ENTRE SATISFACCIÓN EN EL TRABAJO Y EL USO DE ALCOHOL: REVISIÓN SISTEMÁTICA

**Resumen:** Los factores que pueden influir en la satisfacción en el trabajo están presentes de diferentes formas y con repercusiones diversas. Objetivo: Realizar una revisión sistemática de artículos científicos sobre la satisfacción en el trabajo y el uso de alcohol en el período de 2008 a 2017. Método: Los artículos fueron investigados bases MEDLINE (PubMed), Web of Science y Scopus, en las lenguas inglesa, española y portuguesa. La revisión se basó en los criterios del PRISMA. Resultados: se encontraron evidencias de correlación positiva moderada en recortes transversales, pero que modifican a lo largo del tiempo, y que la relación entre satisfacción en el trabajo y uso de alcohol es moderada por *burnout*, condiciones de trabajo, demanda y control, relación con el líder, el apoyo social y el clima de trabajo. Conclusión: Los resultados reafirmamos la necesidad de explorar el tema para trazar estrategias de intervención en el contexto del trabajo.

**Palabras clave:** consumo de bebidas alcohólicas; consumo de sustancia; satisfacción en el trabajo; salud mental en el trabajo; ambiente de trabajo.

### Introduction

The consumption of alcoholic beverages is seen differently when compared to other drugs, in view of its broad social acceptance. When consumption is excessive, it is a problem though. The functional consequences of alcohol-related disorders affect different functional areas of life. These include driving vehicles and operating machinery, school and work, relationships, interpersonal communication, and health. Alcohol-related disorders contribute to absenteeism in employment, work-related accidents, and low productivity. It is also associated with a significant increase in the risk of accidents, violence, and suicide. The problematic use also contributes to disinhibition and feelings of sadness and irritability, which collaborate towards suicide attempts and completed suicides (DSM-5, 2014).

Work can be an important factor in promoting mental health, but it can also arouse intense suffering and promote illness. Some of the aspects of work that may arouse dissatisfaction or suffering can be related to the nature of the tasks to be performed, the environmental and operational conditions or the way the work is organized. Factors that can influence job dissatisfaction or suffering are present in different ways and with different repercussions. Interpersonal relationships, eventually related to competitiveness, pressure for productivity, frustration about expected recognition and/or salaries, feeling wronged or disrespectful, coping with the difficulties characteristic of the task, lack of meaning of the activity itself, the fear of unemployment and/or failure to meet the requirements assumed (Faiman, 2012).

One of the analysis dimensions on the relationship with work is satisfaction. Among the theoretical references, Locke's model is considered a *démarche*. The markers of this theory consider job satisfaction a function of the relationship between what an individual wants from his work and what he realizes he gets. Job satisfaction can be considered a pleasurable emotional state resulting from the evaluation of work in

relation to the individual's values (Locke, 1976). The theorist stresses that job satisfaction is complex because, to understand what makes one feel satisfied with a given dimension of his work, it is necessary to consider that person's standards of comparison. That is, the worker compares desirable facets of his work with what he expects to receive or what he imagines he should receive. This multidimensional perspective of satisfaction continues today. Different factors within the work environment, such as salaries, work hours, autonomy given to employees, organizational structure and communication between employees and managers can affect job satisfaction (Lane, Esser, Holte, & Anne, 2010).

In confirmation, Siqueira (2008) argue that job satisfaction corresponds to the individual's degree of contentment with respect to some specific dimensions of his work, represented by boss, colleagues, salary, promotions, and work concluded. The definition covers the main facets or dimensions of satisfaction and permits a specific analysis of the impact of each of them in promoting individual job satisfaction. That is, job satisfaction represents the extent to which the working individual has pleasurable experiences in the context of organizations, and each of the five dimensions of satisfaction comprises a focus, source or origin of such pleasurable experiences. Thus, verifying the employees' levels of satisfaction can be a strategy to monitor how companies can promote and protect the health and well-being of those who collaborate with the workforce. This view is also related to the understanding that the feelings that emerge in the work context can radiate to the personal, family and social life of the individuals and influence their levels of well-being and physical and mental health (Siqueira et al., 2008).

The work organization is one of the main guiding principles of the worker's mental life. Alberto (2000) affirms that work is seen as one of the components of human happiness, and happiness at work is obtained as a result of the complete satisfaction of psychosocial needs, the feeling of pleasure and the sense of contribution to the exercise of one's professional activity. Seeking to understand satisfaction at work may include understanding other aspects of life, being a dimension that refers to general attitudes towards life, or satisfaction with it, as well as to the quality of service.

For some researchers, mental disorders are linked to precariousness and violence at work. Bernardo, Garrido-Pinzón, & Sousa (2015) point out that the escalation of a set of mental disorders can be identified, which have been recognized in research, as well as their relation with the violence in the social precariousness of work. This categorization rests on clinical and social studies developed in different countries, including Brazil. Throughout the past three decades, recent reviews and systemization have been performed. This group includes depressive conditions, burnout, post-traumatic stress disorder, addiction to alcohol and other (illegal and psychotropic) drugs. To broadly explore this theme and also guarantee further support and credibility, a systematic review of scientific papers was undertaken, using descriptors like "job satisfaction" and "alcohol use" as the guiding framework.

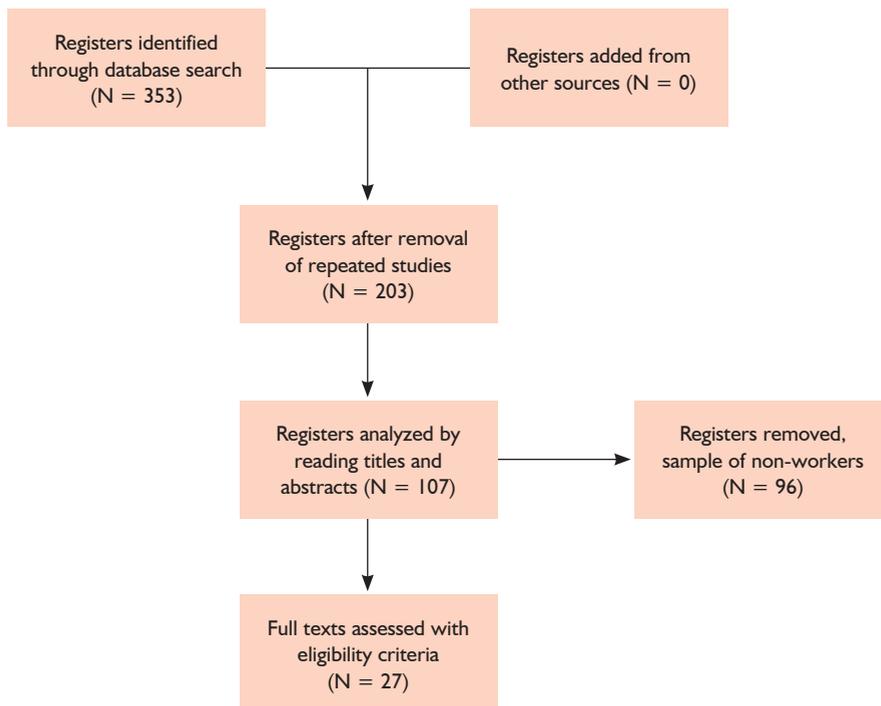
## Method

It is a systematic review of the literature, based on the criteria of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Liberati et al., 2012). A systematic review is a review of a clearly formulated question, using systematic and explicit methods to critically identify, select and evaluate relevant research, and to collect and analyze data from those studies that are included in the review (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2015). The results of this study derive from research conducted in the Web of Science, the MEDLine, and the Scopus databases. The search was restricted to the past ten years, covering the period from 2008 to 2017, and with publications limited to the English, Spanish, and Portuguese languages. The systematized descriptors were, in Health Sciences Descriptors (DeCS), Alcohol Drinking AND Job Satisfaction (F02.784.692.425) and, in Medical Subject Headings (Mesh), Alcohol Drinking (F01.145.317.269) and Job Satisfaction (F02.784.602. 425).

The data collection was carried out through the keywords in articles that could contribute to the discussion of the proposed theme, for the sake of enrichment and materialization of the presented information. For information management, Microsoft Office Excel and EndNoteX7 were used to facilitate and organize the allocation of information, as well as to serve as a data filing protocol. In total, 353 articles were indexed in Scopus (145), MEDLine (112) and Web of Science (96). As non-inclusion criteria, review articles, systematic reviews performed in periods prior to the time cut, meta-analyses, book chapters, and dissertations were not included.

Initially, one of the researchers used the titles of the papers for screening. After the initial screening, the principal investigator also read the abstracts. In the first analysis of the files found, 150 articles were excluded because they were duplicated. After the exclusion of repeated articles, the profile of the sample used in the studies was analyzed based on the abstracts, and 96 were excluded from the next stage because they dealt with alcohol consumption in samples of non-workers (students, trainees, residents). After reading the abstracts, we selected those that addressed the working hypothesis and that covered the effects, panorama, and contextualization in different samples and countries. At the end of this stage, 27 articles were selected, which met all inclusion criteria. This process is detailed in Figure 1.

**Figure 1. The PRISMA Flow Diagram, Exclusion and Eligibility Criteria.**



The articles that met the inclusion criteria were added to the data qualitative analysis. First, the results were discussed among three researchers to refine the definitions and information to be collected. After this step, one of the researchers checked the collected data independently. Therefore, in order to carry out a methodological evaluation of high quality, aiming for excellence in the level of the articles that would make up the review itself, the articles were analyzed considering the introduction, the method (with reference to detailed description of sampling, data collection, and analysis), the results, and the discussion. The selected articles were read without restrictions and the following data were recorded: name, author, purpose, study design, population, method, results, implications, and limitations. For the qualitative analysis, content analysis was used which, according to Vergara (2005), is used in data processing to identify what has been said about a certain topic. The content analysis was carried out through the discussion by four researchers, listing the categories that appeared most frequently, also considering particular aspects that arose through the data analysis. According to Bardin (2008), two researchers used a categorization strategy, which is a process of dividing the components of the analyzed texts into categories, a structural operation that involves two steps: inventory (isolate elements) and classification (dividing the elements, organizing the writings).

## Results

It is vitally important to understand the causes of alcohol consumption by employees. In line with this perspective, several studies were carried out in the last ten years, including prospective, exploratory cross-cuts; correlational and longitudinal designs. In the research bases used for the search, it can be identified that the theme continues to be explored over the years. The annual publication in these databases maintains the average of 13.91 articles per year. The production is organized in 2008 (17 articles), 2009 (27), 2010 (12), 2011 (24), 2012 (12), 2013 (10), 2014 (11), 2015 (19), 2016 (15), 2017 (3).

Regarding the adopted method, the following types are considered: stratified random sampling; randomized; descriptive correlational design, and simple random sampling. Concerning the instruments, to measure alcohol use, different research instruments were found, including Audit (Considine et al., 2017), Rapid Assessment of Alcohol Consumption (FACE), and self-report (Nielsen, 2015). Satisfaction is assessed along with other theoretical constructs, such as the Kessler Psychological Distress Scale (K10) (Considine et al., 2017), General Nordic Questionnaire for Psychological and Social Factors at Work (QPSNordic) (Nielsen et al., 2015), Psychosocial Leave-Behind Questionnaire, self-report or scales created by the authors (Nelson et al., 2015).

To better define the data, the 27 articles were allocated in three categories of analysis, being: 1. job satisfaction/dissatisfaction; 2. substance use in the work environment; and 3. work and health issues according to Table I.

**Table 1. Table of the bibliometric descriptor of articles found.**

Bibliometric descriptor	Author	Base	Article title / DOI	Year of Publication	Country	Sample	Design	Sample Profile	Outcome variable
	Berger, L. K., Sedivy, S. K., Clesler, R. A., & Dillely, L. J.	Scopus	Does job satisfaction mediate the relationships between work environment stressors and employee problem drinking? <i>Journal of Workplace Behavioral Health</i> , 23(3), 229–243. doi:10.1080/15555240.802241603	2008	United States	210	Cross-cut	Workers from Universities	Job satisfaction and alcohol consumption.
	Peltzer, K., Shisana, O., Zuma, K., Van Wyk, B., & Zungu-Dirwayi, N.	Web of Science	Job stress, job satisfaction and stress-related illnesses among South African educators. <i>Stress and Health</i> , 25(3), 247–257. doi:10.1002/smi.1244	2009	South Africa	21307	Cross-cut correlation	Public School Educators	Stress at work and job satisfaction.
	Peretti-Watel, P., Constance, J., Seror, V., & Beck, F.	Web of Science	Working Conditions, Job Dissatisfaction and Smoking Behaviours Among French Clerks and Manual Workers. <i>J Occup Environ Med</i> , 51(3), 343–350. doi:10.1097/JOM.0b013e31819464fe	2009	France	4825	Cross-cut Correlation and Regression Analysis	Laborers	Work conditions, job dissatisfaction and smoking.
Work-related Satisfaction / Dissatisfaction	Malinauskienė, V., Leisyte, P., Romualdas, M., & Kirtiklyte, K.	Scopus	Associations between self-rated health and psychosocial conditions, lifestyle factors and health resources among hospital nurses in Lithuania. <i>Journal Advanced Nursing</i> , 67(11), 2383–2393. doi:10.1111/j.1365-2648.2011.05685.x	2011	Lithuania	748	Cross-cut Regression Analysis	Nurses	Work demand, work control, social support, bullying, job satisfaction and health habits.
	Mezuk, B., Bohnert, A. S. B., Ratliff, S., & Zivin, K.	Scopus	Job Strain, Depressive Symptoms, and Drinking Behavior Among Older Adults: Results From the Health and Retirement Study. <i>Journals of Gerontology Series B-Psychological Sciences and Social Sciences</i> , 66(4), 426–434. doi:10.1093/geronb/gbr021	2011	United States	2092	Cross-cut Regression Analysis	Workers over 50 years old	Stress at work, job satisfaction and alcohol use.

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Table 1. Table of the bibliometric descriptor of articles found. (continued)

Bibliometric descriptor	Author	Base	Article title / DOI	Year of Publication	Country	Sample	Design	Sample Profile	Outcome variable
Work-related Satisfaction / Disatisfaction	Nelson, C. B., Zivin, K., Walters, H., Ganoczy, D., Wadsworth, S. M., & Valenstein, M.	MEDLINE	Factors associated with civilian employment, work satisfaction, and performance among national guard members. <i>Psychiatric Services</i> , 66(12), 1318–1325. doi:10.1176/appi.ps.20140033	2015	United States	1151	Cross-cut Regression Analysis	Guards	Job satisfaction.
	Lindfelt, A. T., Ip, J. E., & Barnett, J. M.	MEDLINE	Survey of career satisfaction, lifestyle, and stress levels among pharmacy school faculty. <i>American Journal of Health-System Pharmacy</i> , 72(18), 1573–1578. doi:10.2146/ajhp140654	2015	United States	811	Cross-cut	Employees from School of Pharmacy	Career satisfaction, lifestyle and stress levels.
Substance use and Work	Moore, S., Sikora, P., Grunberg, L., & Greenberg, E.	MEDLINE	Work stress and alcohol use: Examining the tension-reduction model as a function of worker's parent's alcohol use. <i>Addictive Behavior</i> , 32(12), 3114–3121. doi:10.1016/j.addbeh.2007.06.009	2007	United States	1103	Longitudinal	Workers	Stress and alcohol use.
	Gay, V., Houdoyer, E., & Rouzaud, G.	Web of Science	Taking Drugs for Performance-Enhancing at Job: a Study in a Sample of Workers in Paris. <i>Therapie</i> , 63(6), 453–462. doi:10.2515/therapie/2008066	2008	France	663	Cross-cut, Exploratory Analysis	Workers	Work performance and alcohol use.
Substance use and Work	Frone, M. R.	Web of Science	Are Work Stressors Related to Employee Substance Use? The Importance of Temporal Context in Assessments of Alcohol and Illicit Drug Use. <i>Journal of Applied Psychology</i> , 93(1), 199–206. doi:10.1037/0021-9010.93.1.199	2008	United States	2790	Cross-cut and Longitudinal	Workers	Work context and alcohol use.
	Sinokki, M., Hinkka, K., Ahola, K., Koskinen, S., Klaukka, T., Kivimäki, M., ... Virtanen, M.	MEDLINE	The association between team climate at work and mental health in the Finnish Health 2000 Study. <i>Occupational and Environmental Medicine</i> , 66(8), 523–528. doi:10.1136/oem.2008.043299	2009	Finland	3347	Cross-cut Regression Analysis	Workers	Depression, anxiety and alcohol consumption.

(continue)

**Table 1. Table of the bibliometric descriptor of articles found.** (continued)

Bibliometric descriptor	Author	Base	Article title / DOI	Year of Publication	Country	Sample	Design	Sample Profile	Outcome variable
Substance use and Work	Frone, M. R.	Scopus	Does a permissive workplace substance use climate affect employees who do not use alcohol and drugs at work? A U.S. national study. <i>Psychol Addict Behav</i> , 23(2), 386–390. doi:10.1037/a0015965	2009	United States	2051	Cross-cut	Workers	Working climate e Substance use.
	Biron, M., Bamberger, P. A., & Noyman, T.	Scopus	Work-related risk factors and employee substance use: insights from a sample of Israeli blue-collar workers. <i>J Occup Health Psychol</i> , 16(2), 247–263. doi:10.1037/a0022708	2011	Israel	569	Cross-cut Poisson Regression Analysis	Operational Workers	Risk factors at work and Substance use.
	Legleye, S., Baumann, M., Peretti-Watel, P., Beck, F., & Chau, N.	Scopus	Gender and age disparities in the associations of occupational factors with alcohol abuse and smoking in the French working population. <i>Revue d'Epidemiologie et de Sante Publique</i> , 59(4), 223–232. doi:10.1016/j.respe.2011.02.103	2011	France	13241	Cross-cut	Workers	Temporary employment, physical and psychological occupational demands and work dissatisfaction with alcohol use.
Substance use and Work	Oreskovich, M. R., Kaups, K. L., Balch, C. M., Hanks, J. B., Satele, D., Sloan, J., Shanafelt, T. D.	Scopus	Prevalence of alcohol use disorders among American surgeons. <i>Archives of Surgery</i> , 147(2), 168–174. doi:10.1001/archsurg.2011.1481	2012	United States	7197	Cross-cut	Physicians and Nurses	Prevalence of alcohol use and dependence
	Rosta, J., & Aasland, O. G.	Web of Science	Changes in Alcohol Drinking Patterns and Their Consequences among Norwegian Doctors from 2000 to 2010: A Longitudinal Study Based on National Samples. <i>Alcohol and Alcoholism</i> , 48(1), 99–106. doi:10.1093/alcalc/ags084	2013	Norway	682	Longitudinal	Physicians	Alcohol consumption

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Table 1. Table of the bibliometric descriptor of articles found. (continued)

Bibliometric descriptor	Author	Base	Article title / DOI	Year of Publication	Country	Sample	Design	Sample Profile	Outcome variable
	García-Díaz, V., Fernández-Feito, A., Arias, L., & Lana, A.	MEDLINE	[Tobacco and alcohol consumption according to workday in Spain]. <i>Gaceta Sanitaria</i> , 29(5), 364–369. doi:10.1016/j.gaceta.2015.04.014.	2015	Spain	8736	Cross-cut, Exploratory Analysis	Workers	Work journey and tobacco and alcohol consumption.
	Mehrazmay, A., Karambakhsh, A., Salesi, M., Heydari, M., & Ahmadi, K.	Scopus	Predictors of change in substance abuse status in soldiers. <i>Iranian Red Crescent Medical Journal</i> , 17(9). doi:10.5812/ircmj.16305	2015	Iran	3960	Cross-cut Regression Analysis	Soldiers	Substance use.
	Nielsen, M. B., Finne, L. B., Christensen, J. O. & Knardahl, S.	Scopus	Job demands and alcohol use: testing a moderated mediation model. <i>Scandinavian Journal of Work, Environment &amp; Health</i> , 41(1), 43–53. doi:10.5271/sjweh.3455	2015	United States	3642	Cross-cut and Longitudinal	Workers	Work demands and alcohol use.
Substance use and Work	Yun, I., & Lee, C. H.	Web of Science	Police Stressors, Job Satisfaction, Burnout, and Turnover Intention Among South Korean Police Officers. <i>Asian Journal of Criminology</i> , 10(1), 23–41. doi:10.1007/s11417-015-9203-4.	2015	South Korea	570	Cross-cut Regression Analysis	Police officers	Stress and alcohol consumption.
	Soler, J. K., Yaman, H., Esteva, M., Dobbs, F., Asenova, R. S., Katic, M., ... European Gen Practice Res, N.	Web of Science	Burnout in European family doctors: the EGPRN study. <i>Family Practice</i> , 25(4), 245–265. doi:10.1093/fampra/cmn038	2008	European countries	1393	Cross-cut Regression Analysis	Physicians	Burnout and associated factors

(continue)

**Table 1. Table of the bibliometric descriptor of articles found.** (conclusion)

Bibliometric descriptor	Author	Base	Article title / DOI	Year of Publication	Country	Sample	Design	Sample Profile	Outcome variable
Substance use and Work	Lindo, J. L., LaGrenade, J., McCaw-Binns, A., & Eldemire-Shearer, D.	Web of Science	Health Status and Health Maintenance Practices among Doctors and Nurses at Two Hospitals in Jamaica. <i>West Indian Medical Journal</i> , 58(6), 539–545.	2009	Jamaica	212	Cross-cut	Physicians and Nurses	Health assessment and health practices
	McDonnell, N. J., Kaye, R. M., Hood, S., Shrivastava, R., & Khursandi, D. C. S.	Web of Science	Mental health and welfare in Australian anaesthetists. <i>Anaesthesia and Intensive Care</i> , 41(5), 641–647.	2013	Australia and New Zealand	191	Cross-cut Exploratory	Anesthetists	Mental health and wellbeing
Work and Mental Health	Mion, G., Libert, N., & Journois, D.	Web of Science	Burnout-associated factors in anesthesia and intensive care medicine. 2009 survey of the French Society of anesthesiology and intensive care. <i>Ann Fr Anesth Reanim</i> , 32(3), 175–188. doi:10.1016/j.anfr.2012.12.004	2013	France	1603	Cross-cut Logistic Regression	Anesthetists	Burnout
	Rath, K. S., Huffman, L. B., Phillips, G. S., Carpenter, K. M., & Fowler, J. M.	Web of Science	Burnout and associated factors among members of the Society of Gynecologic Oncology. <i>American Journal of Obstetric Gynecology</i> , 213(6). doi:10.1016/j.ajog.2015.07.036	2015	United States	369	Cross-cut	Gynecological oncologists	Burnout and personal, work and psychosocial factors.
	Yoon, J. H., & Jeung, D.	MEDLINE	Does High Emotional Demand with Low Job Control Relate to Suicidal Ideation among Service and Sales Workers in Korea?. <i>Journal of Korean Medical Science</i> , 31(7), 1042–1048. doi:10.3346/jkms.2016.31.7.1042	2016	South Korea	1195	Cross-cut Regression Analysis	Salespersons	Emotional demand, job control and suicide
	Considine, R., Tynan, R., James, C., Wiggers, J., Lewin, T., Inder, K., Kelly, B.	MEDLINE	The Contribution of Individual, Social and Work Characteristics to Employee Mental Health in a Coal Mining Industry Population. <i>PLoS One</i> , 12(1), e0168445. doi:10.1371/journal.pone.0168445	2017	Australia	1457	Cross-cut Regression Analysis	Miners	Work characteristics and mental health

## Job satisfaction/dissatisfaction

In the category "Job satisfaction," seven articles were assigned that indicated job satisfaction/dissatisfaction as the main outcome. Research on the subject was also carried out in different countries. Studies carried out in France with a sample of 4825 workers, through a telephone interview in which questions were asked on the work conditions, reported job satisfaction, psychological demands and mental workload, physical demands, decision and work hours, the workers reported strong dissatisfaction in relation to unhealthy work conditions, and also reported a higher frequency of tobacco addiction, potential alcohol addiction and perceived stress (Peretti-Watel, Constance, Seror, & Beck, 2009).

Among the articles analyzed, some specific studies found negative results regarding the association between the dimensions of work and alcohol use, even if job satisfaction was not objectively investigated. In a longitudinal health study in the United States with 2,902 workers, for example, the association between stress and alcohol misuse was investigated among currently employed elderly, indicated by the imbalance between stress and satisfaction. High work stress combined with high job satisfaction and low job stress combined with low job satisfaction were also associated with a lesser degree of depressive symptoms. Tension at work was not related to moderate or heavy consumption though (Mezuk, Bohnert, Ratliff, & Zivin, 2011).

For university workers, two studies were found that explored the correlation between the variables. Berger, Sedivy, Cisler, & Dilley (2008) tested a model of mediation of stressors in the work environment, job satisfaction and consumption status of administrative support workers and maintenance staff of a large urban public university. Specifically, decreased job satisfaction has been examined as a mediator by which stressors may be linked to problems of alcoholism. Individual social vulnerabilities were also examined as predictors of employee misuse. Although the results did not support the role of job satisfaction by associating the stressors of the work environment with the problem of alcohol consumption, other variables of interest in the study were significantly and directly associated with the problematic consumption status (Berger et al., 2008).

Still with respect to university workers, Lindfelt, Ip, & Barnett (2015) analyzed the professional satisfaction, lifestyle and levels of stress at a pharmacy college in the USA, using questions about the academic institution of the interviewees and the tenure status, lifestyle traits, job satisfaction, work-life balance, neurological and psychiatric diagnoses, use of illicit drugs, alcohol, and tobacco. Lower levels of satisfaction were found when there was a perception of poor balance between life and work, as well as levels of stress compared to the general population (Linfelt et al., 2015).

Methodologically sound studies are needed to help us understand the positive aspects of the relationship among the profession, the work environment, and health habits. In addition to correlations of job satisfaction and alcohol use, some authors explored other variables direct or indirectly related with the latter. In relation to stress,

studies were carried out in which job satisfaction and alcohol use were analyzed (Moore, Sikora, Grunberg, & Greenberg, 2007; Peltzer, Shisana, Zuma, Van Wyk, & Zungu-Dirwayi, 2015) and the results vary according to the sample. Studies in Lithuania stated that work control, low social support, fatal events, low physical activity, overweight, obesity, mental distress, job dissatisfaction, and poor sense of consistency were associated with negative health assessment among nurses (Malinauskiene, Leisyte, Romualdas, & Kirtiklyte, 2011).

The authors Nelson et al. (2015) found a relationship between the severity of psychiatric disorders and greater job dissatisfaction. The greater burden of psychiatric symptoms has been associated with lower responses on performance and job satisfaction, consistent with other research showing reduced work performance among individuals with more severe psychiatric symptoms.

Although satisfaction is not taken as the main variable, there are several studies that explore component items, and this appears associated with the demand for work, stress, distress, and burnout. Frone (2008, 2009), for example, conducted two studies with substantial samples in the United States to identify the impact of work characteristics on alcohol use. The first study, with a sample of 2,790 workers, involved a broad cross-sectional study on health and safety in the workplace, which explored the relations of stressors (overload and insecurity at work) with the use of alcohol and illicit drugs. The main objective was to investigate the importance of the temporal context (before, during the day and after work) in the assessment of substance use compared to context-free evaluations. The results supported only the relationship of work stressors with alcohol and illicit drug use before work, during the workday, and after work only in a temporal window.

## **Substance use and work**

In this category, 13 articles reported on the use of alcohol and other drugs in the workplace. The study themes varied, as drugs use was investigated in relation to the work climate, permissive norms, psychiatric diseases, among others. Regarding substance use, it is noticed that alcohol corresponds to a large part of the articles found. In total, ten (77%) articles mentioned the use of alcohol in the workplace, and only three (23%) mentioned other psychoactive substances.

Also in France, in another time window and with a sample of 13,241 workers interviewed by telephone, the associations between short-term employment, physical and psychological occupational demands and job dissatisfaction on the one hand and alcohol abuse (using the Audit-C) and daily smoking on the other were evaluated among French men and women in different age groups. Through the results of the regression analyses, the authors concluded that alcohol abuse affected 20.4% of men and 7.5% of women. Their patterns of association with occupational factors varied according to gender and age. Job dissatisfaction was the main factor among young men (adjusted odds ratio for alcohol abuse and smoking: 1.71 and 2.02), while short-term employment

was the main factor among young women (1.69 and 1.58), this pattern is reversed in older generations. This is equivalent to saying that workers with short-term employment and high occupational demands are subject to a higher risk of alcohol and tobacco abuse with high gender and age disparities (Legleye, Baumann, Peretti-Watel, Beck, & Chau, 2011).

When analyzing the variables in a longitudinal study, however, the results of a comprehensive set of cross-sectional and prospective analyses, in the main sample as well as in specific subgroups, provided little support for the proposed theoretical model. Thus, while job demands and job control were related to alcohol consumption, they seem to have little direct, indirect, and conditional impact on alcohol use over a two-year period (FRONE, 2008).

In his second study in the United States, then, involving 2,051 employees who did not engage in alcohol and drug use, the author explored the multidimensional relationships of the permissive mood for substance use (substance availability, descriptive standards in the workplace and legal standards in the workplace) to perceive safety in the workplace, the tension and morale of employees among those who do not use alcohol or drugs at work. The results showed that the three dimensions of the drug use climate in the workplace were negatively related with the safety in the workplace, positively related to job tension and negatively related to the employees' morale. These results suggest that a permissive climate for drug use at work may be more relevant for most employees who do not consume alcohol and drugs at work (Frone, 2009).

Frone's models were used in another recent survey. Nielsen et al. (2015), in a prospective study to investigate job demands as predictors of psychological distress and alcohol consumption, rested on Frone's conceptual framework for a moderate model of mediation on alcohol use and work demands. The results reported that the job demands had an indirect transversal association with alcohol use through psychological distress and this association was moderated by work control. The analysis of prospective data in the global sample did not provide evidence of direct, indirect or moderate relationships between job demands and alcohol use two years later (Nielsen et al., 2015).

The influence was also found in a random sample of 569 operational workers from nine different facilities of one of Israel's largest manufacturing companies. The results of regression analyses partially confirmed previous findings reported in North America, with an increased rate of substance use among those perceiving more permissive drinking standards, the supervisor's lesser ability to deal with substance use problems, increased exposure to work risks, and lower levels of peer interactions (Biron, Bamberger, & Noyman, 2011).

Substance use in relation to performance (Gay, Houdoyer, & Rouzaud, 2008), working climate and psychological health conditions, such as stress, depression and suicidal ideas, were also analyzed. In Finland, it was investigated whether the team's working climate was associated with depressive disorders, anxiety, use of alcohol, and subsequent antidepressant medication in a random sample of employees. The results

showed that the poor team climate at work was significantly associated with depressive disorders, but not with disorders of alcohol use.

Other variables that are also taken as possible are the specific dimensions of work, particularly the working climate, work tension, team relationship, and substance use for performance improvement. Malinauskiene et al. (2011) and Moore et al. (2007) found that the disrespectful treatment showed the strongest relationship with all measures of alcohol and consistent with previous research, but found no strong association between stress at work and alcohol use.

Specificities in professional groups of mining activities were also investigated regarding levels of psychological distress, and positive results were found for the association among satisfaction, work characteristics and alcohol use (Considine et al., 2017). The levels of psychological distress within this sample were significantly higher compared to a sample of Australian employees. The following factors contributed to levels of psychological distress: lower social networks; past history of depression, anxiety, or drug/alcohol problems; high recent alcohol use; role of managers and a set of job characteristics (level of satisfaction, financial factors and job insecurity, perception of less support in the workplace for people with mental health problems) (Considine et al., 2017).

A similar result in which the characteristics of the work are not associated with alcohol use was also found in Spain in a cross-sectional study of 8,736 employees over the age of 18 about working hours (morning, afternoon, night, part-time, shift work) and smoking and drinking habits, also considering job satisfaction. Although moderate alcohol consumption was found in 54.8% of workers and excessive consumption in 1.5%, most moderate and heavy drinkers worked part-time, but no work dimension was significantly associated with alcohol consumption (Garcia-Diaz, Fernandez-Made, Aria, & Lana, 2015).

Research on the relationship between alcohol use and job satisfaction was also conducted in studies with retirees and professionals considered veterans, who demonstrated that work is associated with high depressive symptoms in contrast to research results involving younger workers. It should be noted, however, that work stress was not related to alcohol misuse (Mezuk et al., 2011). Another part of this research is focused on a group of security professionals such as firefighters, police officers and guards. The results of the investigations evaluated hazardous alcohol use among these groups of professionals (Nelson et al., 2015; Mehrazmay, Karambakhsh, Salesi, Heydari, & Ahmadi, 2015; Yun & Lee, 2015).

## Work and Health

In this category, six studies were allocated that discussed the relationship between the work environment and health. In relation to the analyzed studies, the health theme is predominantly related to mental health at work. Regarding the outcome variables, three studies (28.57%) directly cited the theme "Burnout" related to other

mental health issues, while other studies varied as to the theme of depression, anxiety, suicide, stress, among others. Burnout seems to be a common problem in health professionals and is associated with personal and workload indicators, and especially job satisfaction, the intention to change jobs, alcohol use, tobacco use and medication (Rath, Huffman, Phillips, Carpenter, & Fowler, 2015, Rosta & Aasland, 2013; Soler et al., 2008). Research involving these groups stands out, as interventions aimed at improving the quality of life, treatment of depression or alcohol abuse may have an impact on burnout (Rath et al., 2015). A similar study conducted in Jamaica, however, where the current status and practices of health maintenance among physicians and nurses regarding alcohol use were not considered a coping strategy for the Burnout (Lindo, LaGrenade, McCaw-Binns, & Eldemire-Shearer, 2009).

Mental health is also assessed in the context of manifestation of suicidal ideas, and low labor control in men can play a crucial role in developing suicidal ideas among sales and service workers in Korea (Yoon & Jeung, 2016). The authors Malinauskiene et al. (2011) also confess that the emotional exhaustion and depersonalization domains of the Burnout were strongly associated with alcohol abuse or dependence.

## Discussion

Although studies have found evidence that certain workplace conditions in companies may serve as risk factors for alcohol and illicit drug use, little is known about the generalization of these findings to companies in other countries. The results of the articles are diverse, as it depends on the work profile of the sample and there are other confounding variables besides job satisfaction. For the mediator model proposed by Frone, this difference can be explained by two inherent and important limitations in the simple cause-effect model, which makes it difficult to understand how work factors influence alcohol use. It is also likely that employees who do not have certain resources or who have certain vulnerabilities will use alcohol to cope with work stressors. For example, while some studies have reported direct relationships between high levels of job demand and increased alcohol consumption, it is possible that this association depends on moderating factors such as personality, coping styles, religious views, work control, social support or function ambiguity (Nielsen et al. 2015).

A large part of the studies is directed towards activities considered to have high emotional demands. Based on Herzberg's Motivational theory, one of the ways to influence motivating factors intrinsic to one's work, that is, satisfaction with the job content, is the possibility of new learning, feedback about one's performance, work scheduling ability, resource control, personal accountability, and singularity, that is, the work should possess unique qualities and characteristics (Robbins, 2009). Few studies investigate satisfaction with factors in bureaucratic or public services and alcohol consumption.

Reviewing recent research brings out new theoretical implications that draw attention to future research. The work is questioned from the perspective that, hypotheti-

cally, it is linked to illness and unhealthy habits, and the reflection of this perspective is that, in this window, no studies were found in which job satisfaction can be identified as a protective or coping factor for consumption risk and addiction, or that dissatisfaction may be a risk factor. These different results are supported by the fact that there are few longitudinal studies, not allowing positive and significant relationships of cause and effect. What is important is that several robustness checks and sensitivity analyses have demonstrated that the findings cannot be fully explained by omitted variables, reverse causality or wear in the sample.

In a survey of workers who attended health services, substance use for work in the past month, socio-occupational characteristics and levels of stress and job satisfaction, the use of licit and illicit substances for performance-enhancing behavior at work are frequent and cause repeated and varied consumption. One of the risks could be a passage to addictive behavior. Many of these workers who drink excessively may be absent from the workforce though (Mezuk et al., 2011). Studies with university professionals were found in only two articles. It is evident that opportunities remain for correlation analyses with new samples, due to the specificities of each type of work and each country. There are few studies with the profile of workers from educational institutions, particularities of public service and the career.

Several fields of science have looked at the variable job satisfaction under sociological, business, organizational, health and psychological perspectives. The focus on this dimension of work is due to several reasons: the first one is due to the fact that the subject is relevant for students interested in the subjective evaluation of work conditions (e.g., characteristics of employment). Second, because job satisfaction is relevant to managers and researchers interested in organizational outcomes, such as organizational commitment, absenteeism, sabotage, turnover or intentions to quit work. Thirdly, it is assumed that this variable entails important implications, being it is a multidisciplinary and eternal construction that encompasses all professions, works, and contexts (Spagnoli, 2012).

Despite recognizing the impossibility of a theoretical model that encompasses the range of variables involved in alcohol use, given the relevance of the topic and the fact that Brazilian publications linking the variables were not located in this systematic review, there are opportunities to search for more comprehensive models as, despite knowing that wages, work hours, autonomy given to employees, organizational structure and communication between employees and managers can affect job satisfaction (Anne S., 2014), there are few studies that permit generalizations on the subject. To solve these gaps, there is a need for studies in which satisfaction is defined as a specific conceptual construct, dissociated from burnout, stress, and depression. Despite being evaluated, the latter was not elucidated conceptually in the articles analyzed. The opportunity to use specific instruments converges to this conclusion and, as Mezuk et al. (2011) propose, an alternative analysis in future research would be to explore the cognitive influence.

## Final considerations

The contribution of this article is that it permits reflections on the extent to which work, more precisely job satisfaction is a mediator of hazardous alcohol use and life habits. The results found reaffirm the need to explore the theme in order to outline individual intervention actions and strategies and also in the context of work, as mental health is essential for complete wellbeing. As with all articles reviewed, this one also has limitations, considering that the literature review presupposes temporal windows on the proposed research constructs, at the risk of not covering relevant previous studies, and there is a restriction of the language to Portuguese, English, and Spanish, excluding other articles that could cover these discussions, besides the limitation of the search to three bases.

When analyzing if there are correlations between the variable job satisfaction and alcohol use, it is noticed that, among the articles, there is a range of other variables that intermediate this relationship, but there is still a need to define the concept of job satisfaction, which composes this variable, and then dimension it in a standardized manner, allowing more complex evaluations. Understanding evidence about the extent of mental health problems and associated characteristics within a population of employees is needed to inform appropriate and personalized mental health programs.

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