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## Article

# The Uses of Coffee in Highly Demanding Work Contexts: Managing Rhythms, Sleep, and Performance

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**Abstract:** This paper presents a sociological approach to coffee consumption as a performance management strategy in work contexts, particularly in professions with intense work rhythms and highly responsive demands. Focusing on the daily work of three professional groups (nurses, police officers, and journalists), we analyze the social expression of coffee and how it is mobilized to deal with sleep problems, fatigue, concentration, or stress. For this purpose, three intertwined dimensions are explored: (1) the nature of these professionals' work and the pressures for certain forms and levels of performance; (2) sleep problems as both a result of those work characteristics and a constraint on performance; and (3) the role of coffee in managing professional imperatives. The use of coffee appears as a legitimate practice in everyday working routines, due to its socializing markers, whereas additional benefits are attributed to the pharmacological properties of caffeine, given the perceived improvement in performance. The empirical data derive from a study carried out in Portugal on the use of medicines and food supplements for performance management, following a mixed methods approach. In particular, data from a questionnaire survey in a sample of 539 workers and information collected through seven focus groups with a total of 33 participants were used.

**Keywords:** coffee; caffeine; sleep; performance management; work contexts



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## 1. Introduction

*'Hard as it is to believe today, there was once a world without coffee'.* (Cowan 2005, p. 1)

*'Coffee has played a leading role in adapting our bodies to both the unnatural biorhythms of artificial light and the furious pace of the wired 24/7 world in which we live'.* (Topik 2009, p. 102)

The reader has probably already had a cup of coffee today, possibly more than one depending on the time when this article is being read. You may have done so at home, at work, in a café, alone, or with family or colleagues. You may also have done so for different purposes, such as to take a break from your work, to share a conversation with a friend, to keep you awake and focused, or simply because you like its flavor.

Coffee is a highly popular drink around the world. After its discovery, in the middle of the fifteenth century, coffee became one of the great success stories of the changing consumer habits, which reshaped the early modern world (Cowan 2005). Coffee drinking is appreciated worldwide because of its pleasant taste and aroma, but also because of its physiological and psychoactive properties (Dórea and da Costa 2005). The pharmacological properties attributed to coffee are not a new phenomenon. In the seventeenth century, coffee was introduced to English consumers as both a new medicine and a new commodity beverage. Being 'advertised and promoted as a medicine, its distribution was not limited to the medical

establishment, and it became simultaneously an integral part of the quotidian social ritual of London's urban culture as well as a new ingredient to the ( . . . ) pharmacopoeia' (Cowan 2005, p. 31). At that time, coffee was already described as being used by businessmen, replacing alcohol with a beverage that was considered soberer. This medicinal status of coffee has been progressively blurred as its use has become more widespread and it has taken on a ritualistic role in social interactions, particularly through the settlement of specific spaces for the collective consumption of coffee (Cowan 2005; Jamieson 2001).

Caffeine is the most consumed psychoactive drug worldwide today (Courtwright 2001). In addition to coffee, it is found in other common beverages (such as tea and soft drinks), in products containing cocoa or chocolate, in energy bars, energy drinks and shots, and is sold in concentrated or pure formulae as food supplements (mainly in the form of powders, capsules or tablets) (Bessada et al. 2018). As a medicine, it is also usually found in association with analgesics for migraine or tension headache management (Lozano et al. 2007). Coffee is the primary source of caffeine in the diet of adults in several European countries (Nawrot et al. 2003). Although there are considerable differences between countries, overall, in Europe, coffee and carbonated soft drinks are the top caffeine-containing beverages sold.

In Portugal, coffee represents almost 30% of these beverages (Reyes and Cornelis 2018). In fact, as in other European countries, coffee drinking is a widespread daily social practice, which is invested with a symbolic value (Giddens [1989] 2001) which often transcends beyond the drink itself. 'Going for a coffee' with someone may mean a pretext for a meeting between two or more people to talk and not necessarily to merely consume this beverage. Specialized coffee establishments where clients can drink it at very affordable prices are numerous. In addition to a great variety of coffee products, there is also a consolidated industry in coffee making machinery suitable for homes and offices. Thus, coffee preparation and consumption, in all variety, is easy and available to many people (Dórea and da Costa 2005).

Coffee drinking in the workplace is widespread and can be considered as a "performance consumption", a notion that has been proposed to address the use of pharmaceuticals or natural products for performance management purposes in different social contexts, including at university and work (Lopes et al. 2015). In this paper, the uses of coffee in the workplace, especially in professions whose nature of work demands readiness and high levels of performance from their workers, are explored from a sociological perspective. These professions have been undergoing structural changes that place increasing demands on workers, in particular in the context of a growing dissemination of a culture of enhancement and the consolidation of a "productivity imperative" (Barbee et al. 2018) which, in combination with the expansion of greedy institutions (Sullivan 2014), involve maximizing workers' productivity. The recently suggested term 'everwork' seeks to signal a particular type of work setting that combines several attributes: overwork, constant availability, lack of control over schedule and other work activities, and face time or visibility (Wynn 2018).

Focusing on the social context that structures the daily work of three professional groups that share these attributes—nurses, police officers, and journalists—deregulated working temporalities emerge as a particularly relevant dimension of the demands to which workers are exposed (Johnson and Lipscomb 2006). Their consequences on sleep patterns (Chatzitheochari and Arber 2009), both in quantitative and qualitative terms, often require adopting different strategies to ensure states of alertness and concentration that enable work performance in accordance with the socially expected standards. The purpose of this paper is to analyze the uses of coffee in the work context, in particular how it is mobilized as a strategy to manage work performance, and to cope with the high work demands and pressure.

## 2. Materials and Methods

The data presented in this paper draw on an ongoing sociological study<sup>1</sup> on performance consumptions at work, i.e., the use of medicines, food supplements and other

products to improve physical, intellectual, and social performance in the workplace, taking place in two Portuguese metropolitan areas: Lisbon and Oporto. Our target population was individuals from the three professional groups mentioned above.

The research was structured using a mixed methods approach. The collection of empirical data occurred in 2019–2020 and was organized in two main stages. In the first stage, seven focus groups discussions (FGDs) were conducted, with a total of 33 participants from the three professional groups. The aim of these FGDs was to produce exploratory qualitative data on the research subject and to contribute to the design of the questionnaire to be applied in the following stage. An online survey—using the Qualtrics platform (2020)—was then distributed to workers from those professional groups. The questionnaire was specifically designed for this study, and it was pre-tested with 47 individuals from the respective professional groups. After introducing minor changes suggested by the pre-test, the final version of the questionnaire was applied. The participants were recruited mainly through the corresponding trade unions and, in addition, through informal contacts with professionals who referred other colleagues. Both stages of the research were approved by the Ethics Commission of Egas Moniz, and written informed consent was obtained from all participants in the study.

The survey sample consisted of a total of 539 respondents, with the following distribution: 36.9% nurses, 36.2% police officers, and 26.9% journalists; 56.6% men and 43.4% women. Regarding age, 9.5% of respondents were under 30, 26.2% were 30–39, 34.7% were 40–49, and 29.7% were 50 or older.

In this paper, relevant results from the FGD and the survey are used. This paper focuses on one of the components of a wider study; therefore, as already mentioned, a set of questions included in the questionnaire survey was selected with regard to the three dimensions under analysis: the nature of work, sleep, and coffee use. For the first dimension, the following were considered: the number of daily working hours; the exercise of more than one professional activity; the working schedule; unexpected work; perceptions regarding working rhythms; and types of professional demands. For the second, the number of hours of sleep per day on working days, assessment of the amount of sleep, and assessment of the quality of sleep were selected. Finally, for the third, coffee consumption, the number of coffees consumed per day and reasons for coffee drinking were used. Qualitative data on these same issues were extracted from the FGD.

The survey data were analyzed using SPSS (Statistical Package for Social Sciences, IBM SPSS Statistics v. 26, New York, USA), for univariate and correlation statistical analyses. The FGD data were subjected to qualitative content analysis, using the software program MAXQDA (VERBI Software v.11, Berlin, Germany).

### 3. Results and Discussion

#### 3.1. Working under Pressure: Rhythms and Deregulated Temporalities

The demands intrinsic to the functioning dynamics of an increasingly global and competitive economy trigger the establishment of new forms of pressure not only at the level of organizations, but also in the very nature of professional work that is now required. In fact, it is in this context that various forms of restructuring and organizational dynamics are emerging, demanding greater versatility and functional efficiency from workers, while at the same time establishing and reinforcing precarious working conditions within a framework of greater pressure and demand. Problems such as intense work rhythm, long and rotating working hours, new practices and routines, or insufficient free time for extra work activities are only some of the indicators that reflect a high pressure for professional performance.

Although we are talking about a general trend whose ramifications extend to multiple and different labor domains, the extent of its forms of pressure has a more striking impact within the scope of professional groups whose nature of work is linked to highly demanding levels of performance and immediate response, or which belong to labor markets subject to major economic, technological, and organizational changes (Tavares et al.

2022). Therefore, this implies that as these professionals become more vulnerable to this type of organizational pressure, the consequences associated with the intensification of the workload and rhythms of work become more evident. This is illustrated by the greater subordination of professional practices to the diversity of productive demands, but also by the frequent reduction in deadlines for the fulfilment of tasks.

Therefore, and without being exhaustive, one may consider that this is the case for professional groups such as nurses, police officers, and journalists, because regardless of the distinctive particularities of each one, these groups end up being a good reflection of the increasingly imperative nature of high levels of performance and the requirements for permanent adaptation to intense, multi-skilled, and non-routine forms of work.

Indeed, if we look at the results of the survey that provide empirical support for this discussion, we find that the time pressures which these professionals are subjected to are significant, due to the length of the working time (Table 1). In fact, for many of these professionals, it is a common trend to work more than 8 h a day (51.9%), in particular for journalists (60%). This extension of working time is reinforced by the accumulation of professional activities, because this accumulation assumes relevance for all three professional groups (31.7%).

**Table 1.** Number of hours of work per day and work schedule.

	Nurses %	Police Officers %	Journalists %	Total %
Hours of work				
Up to 8 h	47.2	54.9	40.0	48.1
9–12 h	41.2	42.1	56.6	45.6
More than 12 h	11.6	3.1	3.4	6.3
Work schedule				
Fixed hours	32.2	20.0	18.6	24.1
Shifts (with nights)	52.8	68.7	9.7	46.9
Shifts (without nights)	13.1	9.7	2.8	9.1
Flexible working hours	1.0	1.5	64.8	18.4
Other schedule	1.0	-	4.2	1.5
Total % (n)	100.0 (199)	100.0 (195)	100.0 (145)	100.0 (539)

Another equally relevant aspect is the predominance of irregular working hours, mainly due to night shifts (68.7% for the police officers and 52.8% for nurses) and flexible working hours (64.8% for journalists). Fixed hours represent around 20% for police officers and journalists and 32.2% for nurses (Table 1). As a transversal characteristic, it should be noted that most of these professionals also work regularly during the night and at weekends. This irregularity in their working hours includes unforeseen shifts (i.e., without prior notice or with less than 24 h notice), a situation which happens to almost two-thirds of the police officers (63.6%) and journalists (63.4%), and to the majority of nurses (56.8%).

Essentially, these elements end up showing a convergence with some general trends that have been signaled and which show, in particular, that the increased diversification of working hours in the labor context has led to a growing generalization of flexible hours and shift work. This aspect was, for example, attested by the results of the European Working Conditions Survey 2012, according to which 17% of workers in the EU already performed shift work (Carneiro and Silva 2015).

The issue of time is, therefore, one of the critical aspects arising from these multiple reconfigurations, because this accentuated pressure leads to increasingly less linear and standardized times and forms of work. However, more than just the number of working hours expended, there are also other types of time patterns related to the way in which time is distributed, the intensity of tasks during the periods in which they take place or the control (or lack of it) that may actually exist in the management of that time (Johnson and Lipscomb 2006). In view of this trend towards a broad reconfiguration of work time

(Sennett 1998), based on flexibility, less routine tasks or inconsistent and variable working time patterns, it is not surprising that this has resulted in a number of specific social and professional consequences. Among the most notorious examples of these manifestations are the difficulties in reconciling work with other spheres of life (e.g., family life), the (in)satisfaction of professionals in the face of the intensity of demands, or the relationship that these forms of more accelerated social time have with their own health. This is borne out by the conclusions of entities such as the European Agency for Safety and Health at Work, according to which the current context of change has actually increased psychosocial risks at work (Quinta et al. 2017).

Considering these aspects in articulation with the specificities of the nature of the work of these professional groups, it is therefore not surprising that the majority of respondents perceive their working rhythms as very or excessively intense (70.7%).

Regarding the global and transversal professional demands that, in this context of intense pressure, end up having an expressive impact on the activity of these groups, they focused mainly on the intellectual (mental agility, concentration, and memorization) and relational (communication, emotional control, and conflict management) components rather than on the physical component (strength, agility, and endurance) (Table 2). In the case of aspects that are more subject to demands in the intellectual domain (perceived as ‘very or extremely demanding’), ‘concentration’ (89.2%) and ‘mental agility’ (86.1%) stood out. Regarding the relational domain, the noticeable aspects for being subject to high demand were ‘communication skills’ (87.6%) and ‘emotional control’ (85%).

**Table 2.** Perceptions of professional demands.

	Undemanding or Little Demanding %	Moderately Demanding %	Very or Extremely Demanding %
Physical strength	34.0	38.8	27.3
Physical endurance	23.6	38.4	38.0
Physical agility	28.2	44.3	27.5
Concentration	0.2	10.6	89.2
Memorization	1.3	21.5	77.2
Mental agility	0.7	13.2	86.1
Emotional control	1.1	13.9	85.0
Conflict management	3.9	18.9	77.2
Communication skills	0.6	11.9	87.6

For each category, the total percentage equals 100% ( $n = 539$ ).

In fact, these perceptions concerning the characteristics of work as generating forms of pressure and wear and tear also emerged very clearly in the focus groups. Despite the specificities that naturally distinguish each of the realities in question, there are some recurrent situations that should be highlighted because they clearly denote the professional performance particularities thus characterizing the professional groups under analysis, more specifically, the multiple forms of pressure that are felt at the aforementioned intellectual and relational level.

This may be exemplified for nurses and police officers, because in each of these groups there are demands that require a capacity for rapid response based, on the one hand, on criteria of choice and decision-making in adverse circumstances, but also on adaptation to differentiated situations and great psychological stress.

*‘ ( . . . ) besides thinking about the specific clinical situation and what is decompensating, we have to go further and think about what the priority is, choose the priority patient. There may be two patients at exactly the same level, but we have to prioritize, try to call for help, which is also often difficult because . . . it is not because of the immediate situation, many times the colleague next door is also going through the same thing, so how can he help us if he is going through the same thing with the patients for whom he is responsible? I think this requires a great deal of mental agility’.* (FG1, Nurse)

*' ( . . . ) Hence the psychological wear and tear, because we, whether we like it or not, especially the staff who are there on operational duty, who are on the street, are going to come across the good and the bad of society. So, we have the problem of domestic violence, we have situations where we find people right in the pit, we have drug addicts . . . we struggle with all of that. And that, whether we like it or not, is going to affect us in our personal life. ( . . . ) We never know what we are going to find. That, it seems, is a wear and tear. The shift work itself is exhausting'. (FG4, Police officer)*

In fact, both cases provide a paradigmatic illustration of the adaptive character of decisions and interventions in face of the multifaceted nature of the problems, because both the management of illness situations susceptible to sudden changes and aggravation, and the almost simultaneous occurrence of distinct situations in terms of public security, require quick and exhausting answers for the professionals who handle them.

Additionally, in the case of journalists, we may consider that changes at the level of the complexification of the nature of work have implied new types of demands (accentuated by the speed and immediacy provided by the current technological possibilities), as well as new forms of exposure and public scrutiny. This entails a form of pressure that ends up being potentially permanent and insidious, insofar as it can take place at any time and multiply on the different digital platforms:

*' ( . . . ) from time to time you receive an e-mail, as we all do, e-mails from readers saying "you don't understand any of this, you were wrong here"; sometimes they are right, sometimes they are only a little bit right and other times they are not right at all, and many times this is even done publicly, in the comments. But what am I getting at? Our faults, which exist, are exposed for the world to see ( . . . ). This leads to a need, sometimes, of "hey, so I have to know everything about everything". That intellectual pressure. Which is impossible, knowing everything about everything. But that concern for the exposure to error and the consequences that this can sometimes have, which sometimes we can even . . . certainly, many times, we even increase them far beyond from what they are, but that pressure exists'. (FG3, Journalist)*

Naturally, when we consider how these forms of professional pressure can also affect personal/family life, it is not surprising to find that this is a truly problematic dimension, given the growing tension between these spheres. These are therefore always difficult adjustments and the changes that take place, always under the logic of flexibility, end up proving to be of very limited compatibility, with the result that these balances are less a material reality than a rhetorical reality (Coyle 2005; Moen and Sweet 2004). Additionally, it is not surprising that, because these balance problems prove to be insurmountable in practice, various complaints such as irritability, fatigue, musculoskeletal problems, headaches, digestive problems, cardiovascular problems, or metabolic diseases, (Machado 2016; Trinkoff et al. 2006; Vila 2006), as well as higher levels of depression and sleep problems (chronic drowsiness or insomnia), are reported.

### 3.2. Sleep and Work: A Troubled Relationship

The abovementioned work characteristics impact on sleep, both in terms of objective patterns and of the workers' perception of the quantity and quality of sleep. In fact, sleep is one of the elements which is both a result of the nature of work and a constraint on work performance, thus triggering the need for management. Long working hours, intense rhythms, and shifts generate sleep deficits and become factors favoring the development of sleep disorders, such as insomnia or difficulties in falling asleep. The very characteristics of working times and rhythms create the need to ensure states of alertness and concentration, which are not compatible with the lack of sleep.

The results of the workers' survey show a problematic picture of sleep patterns. Given the socially recommended number of hours of sleep (7–8 h), sleep deficits are considerable. On working days, 60.7% of respondents sleep on average up to 6h a day (Table 3). In line with this pattern, 60.5% consider the number of daily hours of sleep as insufficient,

whereas 54.3% classify its quality as poor, bad, or very bad. The number of hours of sleep is particularly disadvantageous for the professional groups that work more systematically in shifts, because both police officers and nurses register higher percentages in the category of less than 6 h (69.2% and 65.8%, respectively), compared with journalists (42.1%).

**Table 3.** Number of hours of sleep per day on working days.

	Nurses %	Police Officers %	Journalists %	Total %
Hours of sleep				
Up to 6 h	65.8	69.2	42.1	60.7
7–8 h	33.2	30.3	57.2	38.6
9 h or more	1.0	0.0	0.7	0.7
Total % (n)	100.0 (199)	100.0 (195)	100.0 (145)	100.0 (539)

*‘So, in four days, I sleep what I should sleep in one day. How can the person be well?’*  
(FG7, Police officer)

The results also show that the number of working hours has a significant impact on sleep time. There is an inverse relationship between the number of daily working hours and the number of daily hours of sleep (Table 4). Similarly, the perception of the amount of sleep is more negative for those who spend longer hours at work. The same applies to work schedule, where the penalization in the amount of sleep is much more severe for those who work in shifts (with overnight stays), compared with fixed or flexible schedules (without shifts). In effect, night work seems to have clear effects on the number of hours of sleep. Those who work nights more often are those who declare a lower daily number of hours of sleep and those who evaluate this quantity as being very insufficient. Regarding the quality of sleep, the less favorable evaluations (considering it as bad or very bad) are higher for those working longer hours, for those working in shifts (with overnight stays) and for those who work more often at night.

**Table 4.** Number of hours of sleep per day on working days, by number of hours of work per day and work schedule.

	Number of Sleeping Hours	Up to 6 h %	7–8 h %	Total % (n)
Hours of work *				
Up to 8 h		54.9	45.1	100.0 (257)
9–12 h		63.9	36.1	100.0 (244)
More than 12 h		88.2	11.8	100.0 (34)
Work schedule **				
Fixed daytime schedule		47.7	52.3	100.0 (130)
Shifts with overnight stays		78.4	21.6	100.0 (250)
Shifts without overnight stays		53.1	46.9	100.0 (49)
Flexible schedule		42.9	57.1	100.0 (98)

The category ‘9 h or more’ sleep per day was removed, because it only included 4 respondents. The category ‘other’ work schedule was removed, because it only included 8 respondents. \*  $p = 0.000$ ; Cramer’s V; \*\*  $p = 0.000$ ; chi-squared test.

The consequences of shift work (including night work) on the quality of sleep were, in fact, one of the most frequently reported by the participants in the FGDs, insofar as the deregulation of working hours causes a deregulation of sleep rhythms, namely, difficulties in falling asleep and maintaining a state of alertness in accordance with the concentration levels required during working periods, particularly in professions which, by the nature of the work itself, put special pressure on professional performance. This pattern is particularly evident in nurses and police officers, but is also relevant in journalists.



*'Then, at the end of many nights working, with a morning of work following ( . . . ) then who can sleep if my schedule is completely upside down?' (FG2, Nurse)*

*'( . . . ) we leave work at night and the day after we get in in the morning. So, I almost had to come up with strategies to sleep less on the day I go out at night, to be able to fall asleep at night, because otherwise it's a stress because I start looking at the time and start thinking 'tomorrow I have to get up at 7 a.m. and I still haven't managed to sleep.' (FG1, Nurse)*

*'I've never met a colleague who slept relatively well or the proper hours of sleep. That's one of the things I resent the most. I'm working a lot at night now ( . . . ) but I had weeks where I'd come in today at 7am, tomorrow at 5pm, leave at 1am, the other day I'd come in at noon, then the other day ( . . . ) I'd come in at 8am, then at 11am, then at noon.' (FG3, Journalist)*

The relationship between social sleep patterns and work contexts has been evidenced in various studies. [Burgard and Ailshire \(2009\)](#) examined whether and how common conditions and experiences at work may 'follow workers home' and impinge on their quality of sleep. [Chatzitheochari and Arber \(2009\)](#) reflect on a 'long hours' culture' of work and examine the relationship of insufficient sleep duration with occupational circumstances and family responsibilities. The authors found an inverse relationship between working hours and sleep duration, although shift work is also a significant predictor of reduced sleep. They concluded that sleep loss and fatigue are therefore prevalent problems in the modern workforce, particularly as long work hours and shift work become more common.

Sleep deprivation has been associated with impaired cognitive performance, decreased productivity in the workplace, and an increase in accidents and errors ([Coveney 2014](#)). Additionally, poor sleep may have emotional and interpersonal consequences in the workplace ([Anderson et al. 2018](#)). As reported in the FGDs, physical and psychological states of fatigue caused by lack of sleep can lead to difficulties in establishing relationships with colleagues, or the population with whom the workers deal.

*'What I notice is that when we are tired, both physically and psychologically, because of the shifts, sleeping 4 h, 3 h, to then go and do the shift in the early hours, continue in the morning, there is always that weariness where the tolerance afterwards is lower.' (FG7, Police officer)*

Work is one of the most permeable arenas for the social valorization of performance; therefore, in a context of 'social acceleration', a 'desynchronized high-speed society' ([Rosa 2003](#)), or the '24/7 society' ([Williams et al. 2013](#)), sleep management, in particular the importance of staying awake, either to compensate for possible deficits generated by the work itself, or to meet the imperatives of efficiency and productivity, may become a necessity. In this sense, sleep can be object of different management strategies, either inscribed in the growing resource to medications—the pharmaceuticalization of sleep ([Gabe et al. 2015](#); [Pegado et al. 2018](#))—or other types of consumptions, such as coffee, which enjoys a hybrid position, as discussed below.

### 3.3. Coffee in the Workplace: A Functional Break or a Performance Consumption?

In such demanding professional occupations with intense working rhythms and heavy workload, and their troubled relationship with sleep, the high pressure on both intellectual and relational performance often leads individuals to adopt different strategies to manage stress, increase alertness, improve concentration, and be more productive. In this study, undertaken with the three abovementioned professional groups, coffee appeared as a central resource to manage everyday work performance.

Caffeine, the main bioactive compound of coffee, is a psychoactive drug which acts as a stimulant of the central nervous system, muscle and heart tissues, and blood pressure control centers ([Lozano et al. 2007](#)). It is claimed to be effective in reducing tiredness and hunger, in improving mental alertness, memory, mood and focus ([Glade 2010](#)), in enhancing vigilance tasks' performance ([Smith 2002](#)), information processing ([Dórea and da Costa](#)

2005), flow of thoughts (Harland 2000), in sparking intellectual clarity and creativity (Topik 2009), and in reducing the risk of cognitive failures and accidents at work (Smith 2005).

Often mentioned within a wide range of cognitive enhancement substances, coffee and caffeine-based products tend to fall into categories such as ‘lifestyle drugs’ (Schelle et al. 2015), ‘soft enhancers’ (Maier et al. 2013), ‘soft stimuli’ (Tomažič and Čelofiga 2019), and ‘mild stimulants’ (Nehlig 2010) that people use to help improve multiple everyday mental and physical activities. Although there is still insufficient scientific evidence of the efficacy for many of the claims made around caffeine as a ‘true’ nootropic, and its cognitive enhancing properties are largely associated with its indirect effect on arousal, mood, and concentration (Nehlig 2010), some studies have shown that caffeine helps to restore or facilitate individuals’ performance following sleep deprivation (Anderson et al. 2018).

According to the survey, 86.5% of the respondents usually drink coffee on a daily basis.

As Table 5 shows, in addition to a general enjoyment of its taste, the aim of staying awake during the working hours was one of the most mentioned reasons for such a regular use. These two FGD participants, who worked in shifts, precisely reflect this:

*‘I drink a lot of caffeine. First, because I like it. I Really do. And I feel the need. In the morning, if I don’t drink coffee, I’m there for a while with difficulty in getting started, so I drink an abatanado<sup>2</sup> and I’m fit, with great energy.’ (FG2, Nurse)*

*‘To stay awake is caffeine. Because I think that, if we ask among all colleagues, how many coffees they drink a day, I speak for myself, at least three, four, on a working day, never less than that.’ (FG2, Nurse)*

**Table 5.** Number of cups of coffee per day and reasons for drinking coffee.

Number of cups of coffee per day	%
Between 1 and 2	44.2
3 to 4	45.1
5 or more	10.7
Reasons for drinking coffee *	
Taste	68.5
Staying awake	40.1
Having a break in worktime	33.7
Improving physical energy	29.2
Focusing	19.5
Relaxing	19.3
Socializing	1.5
Habit	0.9
Other	2.6
Total % (n)	100.0 (466)

\* Multiple response question. Percentages were calculated against the total number of respondents (466).

Although most coffee users usually drink between one and two cups (44.2%) and three and four cups (45.1%), in some cases the number of intakes can rise to five or more (10.7%) in a day.

Among individuals with this higher consumption of five or more coffees a day (see Table 6), those who work for long hours are predominant (especially those working 9 or more hours a day, 66%), as well as those who work in night shifts (72%), and, not surprisingly, those who sleep up to 6 h a day (85.4%), who likewise tend to evaluate more negatively the quality and quantity of sleep. Additionally, in the FGD, participants described high intakes of coffee particularly in situations of multiple sequential shifts or overlapping odd jobs:

*‘Starting to work at 8 am, leaving at 5 pm, entering at 5 pm elsewhere, leaving at midnight, entering at midnight elsewhere, leaving at 8 am, entering at 9 am elsewhere. This is what happened to me very recently. Conclusion of this? Hey, you have to drink about eleven or twelve coffees a day, you have to eat, you have to eat a lot of fruit, you*

*have to drink a lot of water, you have to be very aware of what you are and what you are capable of'. (FG4, Police officer)*

**Table 6.** Number of cups of coffee per day, by number of hours of work per day, work schedule, and number of hours of sleep per day on working days.

	Number of Daily Coffees	Between 1 and 2 %	3 to 4 %	5 or More %
Hours of work *				
Up to 8 h		52.4	44.8	34.0
9–12 h		47.6	55.2	66.0
Total % (n)		100.0 (206)	100.0 (210)	100.0 (50)
Work schedule **				
Fixed daytime schedule		29.4	20.2	16.0
Shifts with overnight stays		36.8	53.8	72.0
Shifts without overnight stays		11.9	6.7	4.0
Flexible schedule		21.9	19.2	8.0
Total % (n)		100.0 (201)	100.0 (208)	100.0 (50)
Number of hours sleep per day ***				
Up to 6 h		53.4	66.7	85.4
7–8 h		46.6	33.3	14.6
Total % (n)		100.0 (204)	100.0 (210)	100.0 (48)

The category '9 h or more' sleep per day was removed, because it only included 4 respondents. The category 'other' work schedule was removed, because it only included 8 respondents. \*  $p = 0.044$ ; Cramer's V \*\*  $p = 0.000$ ; chi-squared test; \*\*\*  $p = 0.000$ ; Cramer's V.

The example above shows a strategic use of high amounts of coffee—'about eleven or twelve a day'—which, together with other dietary concerns, was a way of dealing with irregular sleeping hours, managing alertness/wakefulness, and enabling participants to engage with multiple jobs.

According to a risk assessment on the safety of caffeine consumption published by the European Food and Safety Association (EFSA 2015), a daily intake of up to 400 mg of caffeine (by non-pregnant adults) does not raise safety concerns. This corroborates previous studies showing that such a dose is not associated with adverse effects such as cardiovascular and general toxicity (Nawrot et al. 2003). However, the effect of chronic coffee consumption on the brain is only now starting to be studied (Magalhães et al. 2021). Moreover, the amount of caffeine in a coffee varies considerably, from 90 mg per a cup of filter coffee to 80 mg in an espresso (cf. EFSA). Additionally, energy drinks—which sometimes are taken alongside regular coffee—can present up to 300 mg of caffeine per serving, whereas food supplements range between 50 and 400 mg (Bessada et al. 2018). Therefore, in addition to going beyond what is considered a 'safe' daily dose, the high doses of caffeine reported by some of the participants in this study seem to not only exceed the beneficial threshold reported as effective for performance purposes (Outram and Stewart 2013), but may also negatively affect the very concerns they aim to address. Some of those negative effects include restlessness, nervousness, insomnia, stomach upset, increased heart rate, and blood pressure (Franke et al. 2012).

Nevertheless, the general acceptance of and confidence in such a daily consumption practice, by this study participants, sometimes contrasted with some reluctance regarding the use of medicines or supplements for similar purposes. In addition to the fact that, in certain professional contexts, caffeine may be among the few legally accepted enhancement substances, its use is often promoted as a productivity booster in many working environments. As different participants in this study mentioned, coffee is always available for free or at very affordable prices at their workplaces, which not only legitimizes but also encourages a more regular use. It is, therefore, a convenient resource for both employers and employees. Moreover, coffee's ambivalent social status, as both a medicine and a common beverage, or even as a functional food (Dórea and da Costa 2005), makes coffee a widely acceptable 'in-between' strategy (Rodrigues et al. 2019) to improve working performance. The importance of such categorizations is also reflected in the relatively low potential risks

attributed to its use. For example, although concerns with a possible functional dependency on substance use are often attributed to medicines, especially pharmaceuticals, for both therapeutic (Raposo 2010; Rodrigues 2016; Stevenson 2004), and performance purposes (Raposo 2016; Rodrigues et al. 2019), the often reported 'need' of a certain daily caffeine dose, as the above empirical examples illustrated, did not seem to represent a concern.

The widespread use and acceptability of drinking coffee in working contexts has also been naturalized as a practice socially rooted in modern societies. As many authors have emphasized, along with their pharmacological properties, coffee is an instrument of social interaction (Yilmaz 2020) and is highly embedded in many social rituals (Giddens [1989] 2001). One of these institutionalized rituals at workplaces is the 'coffee break', used many times for short pauses at work. Moreover, in addition to the more 'functional' reasons indicated for drinking coffee, the aim of having a short break during working time was mentioned by more than one-third of the survey respondents (see Table 5). The importance of these moments was also stressed in the FGD:

*'I don't actually smoke, but I see coffees and tobacco as the idea of "let's stretch our legs, let's get some air". I drink more coffee because those moments are my break times; I'm going to have a chat with a colleague or go outside to get some sun.'* (FG3, Journalist)

*'Regarding the dynamics of staying awake, I think it's a lot of what the colleague said a while ago: coffee and breaks. "I'm going outside for coffee, I'm going outside to get some air, I'm going outside to see if it's raining". Getting fresh air, leaving that space, that environment, helps us to wake up again.'* (FG6, Nurse)

As these examples indicate, the social meanings of 'coffee breaks' during working hours transcend beyond their pharmaceutical/chemical benefits. Coffee breaks are often seen as moments to decompress, to stretch out the body, to express fresh ideas, and many times to socialize with colleagues (Rodrigues et al. 2021). Even when, in such breaks, not everyone is actively involved in drinking coffee, 'coffee sociability at work', as Stroebaek (2013, p. 382) argued, is 'an integral part of workplace culture'. Particularly in highly demanding working environments, such as those described in this study, such socializing moments create opportunities for colleagues to build on their relationships, both personal and professional. In some cases, such informal interactions may be crucial to exchange work-related ideas and knowledge, but also to informally share working (or personal) challenges and frustrations. Such relational bonds may generate mechanisms to create 'informal collective coping strategies' (Stroebaek 2013) and may also have a positive impact on productivity (Waber et al. 2010).

In summary, this study's results provide insights for understanding the uses of coffee in highly demanding professions, in particular its use for professional performance management purposes. Nevertheless, this study has a number of limitations, which are worth mentioning. Firstly, it did not use a representative sample and, therefore, cannot be generalized to all workers from these professional groups. Secondly, there are no baseline data to assess the evolutionary trend in the use of coffee in work contexts and the reasons for its use. Thirdly, part of the period in which the survey was applied coincided with the COVID-19 pandemic, a fact which may have impacted the results. This is particularly relevant because the professional groups included in this study played a crucial role in the response to the COVID-19 pandemic, which has increased the pressures and workloads even more.

#### 4. Conclusions

The analysis carried out highlights the importance of coffee as a resource in managing everyday work performance. Both the amount consumed and the purposes for which it is consumed reveal how coffee is sought after as a performance enhancer, especially in professions subject to high levels of performance pressure.

The temporal reconfigurations of work are one of the most visible expressions of the increased pressure for professional performance. The intensity and deregulation of

working hours and rhythms are, as such, intrinsic characteristics of the imperatives of versatility and productivity that typify the reality of the professional contexts under study. The ensuing implications are concrete and consequential, mainly at the level of the quantity and quality of sleep patterns of workers. As analyzed, this is an important aspect, because sleep problems interfere with the requirements of concentration and rapid adaptation imposed by work demands.

In this sense, one of the strategies often adopted to deal with work-related performance pressures (especially intellectual and relational) is the consumption of coffee as a drink whose main bioactive ingredient (caffeine) facilitates the management of professional imperatives. Although coffee is a socially rooted drink, it is also a performative investment, namely, when it contributes to keeping workers awake for longer periods of time or with greater concentration. This means, therefore, that the purposes for which coffee is consumed are multiple, surpassing the strict informal domain of breaks and conviviality to the domain of performance management. This purpose is indicative of an openness to the use of coffee as one of the tools for managing increasingly fundamental aspects of professional life.

From this perspective, the discussion around the results presented herein suggests further analytical explorations on the use of caffeine as an intellectual and relational performance enhancer, including comparative approaches to the consumption of the various resources in which this substance is present, including coffee, caffeine capsules, or energy drinks (Coveney 2014). It is also relevant to situate coffee use within a broader framework of the consumption of resources for work performance management purposes, including medicines and food supplements (Coveney et al. 2011; Lopes et al. 2015). It is therefore important to explore how social perceptions regarding the legitimacy of the diversity of resources, as well as their perceived risks and efficacy, shape consumption dispositions and practices.

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## Notes

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- <sup>2</sup> ‘Abatanado’ is a term used for an espresso coffee served in a large cup.

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