

CRÍTICA REVOLUCIONÁRIA

Revolutionary Criticism

Crit Revolucionária, 2024; 4:E006

Original article

https://doi.org/10.14295/2764-4979-RC_CR.2024.v4.36

A CRITICAL LOOK AT SLEEP HEALTH

Guilherme Luiz FERNANDES



Federal University of São Paulo – UNIFESP, Department of Psychobiology. São Paulo, SP, Brazil.

Correspondence: Guilherme Luiz Fernandes guilhermelf7@gmail.com

Received: 18 Jul 2023 Revised: 02 Sep 2023 Approved: 14 Oct 2024

Funding: CNPq #141445/2021-1 and Capes Code 001

https://doi.org/10.14295/2764-49792RC_CR.v4.36

Copyright: Open access article, under the terms of the Creative Commons License (CC BY-NC), which allows copying and redistributing, remixing, transforming and creating from the work, as long as it is non-commercial. The attribution of due credit is mandatory.



Abstract

Epidemiological research shows that the last decades have been marked by a high prevalence of sleep disorders and problems, such as inadequate sleep duration, insomnia, and excessive daytime sleepiness. However, the strategies employed to combat this "epidemic" were largely ineffective, especially in a population context. It is hypothesized that one of the main measures designed to contain this crisis, sleep hygiene, does not take into account the historical, social, political and economic mediations that affect and determine sleeping behavior. This essay seeks to rescue, through narrative review, important stages in the development of the capitalist mode of production and its effects on the insertion of sleep in society. Finally, a dialogue on the

concept of health is proposed that takes into account the dynamics that generate conflicts, which consequently worsen the population's sleep.

Keywords: Sleep; Sleep health; Working hours; Neoliberalism.

UMA VISÃO CRÍTICA DA SAÚDE DO SONO Resumo: Pesquisas epidemiológicas mostram que as últimas décadas foram marcadas por prevalência elevada de distúrbios e problemas de sono, como a duração inadequada de sono, insônia e sonolência excessiva diurna. Entretanto, as estratégias empregadas para o combate dessa “epidemia” foram largamente ineficazes, especialmente em um âmbito populacional. Levanta-se a hipótese que uma das principais medidas elaboradas para conter essa crise, a higiene do sono, não leva em conta as mediações históricas, sociais, políticas e econômicas que incidem e determinam o comportamento de dormir. Esse ensaio busca resgatar, por meio de revisão narrativa, etapas importantes no desenvolvimento do modo de produção capitalista e seus efeitos na inserção do sono na sociedade. Por fim, propõe-se um diálogo de conceito de saúde que leve em consideração as dinâmicas que geram os conflitos, que por consequência, pioram o sono da população. Descritores: Sono; Saúde do sono; Jornada de trabalho; Neoliberalismo.	UNA VISIÓN CRÍTICA DE LA SALUD DEL SUEÑO Resumen: La investigación epidemiológica muestra que las últimas décadas han estado marcadas por una alta prevalencia de trastornos y problemas del sueño, como sueño de duración inadecuada, insomnio y somnolencia diurna excesiva. Sin embargo, las estrategias empleadas para combatir esta “epidemia” fueron en gran medida ineficaces, especialmente a nivel de la población. Se plantea la hipótesis de que una de las principales medidas diseñadas para contener esta crisis, la higiene del sueño no tiene en cuenta las mediaciones históricas, sociales, políticas y económicas que afectan y determinan el comportamiento del sueño. Este ensayo busca rescatar, a través de una revisión narrativa, algunas etapas importantes en el desarrollo del modo de producción capitalista y sus efectos en la inserción del sueño en la sociedad. Finalmente, se propone un diálogo sobre el concepto de salud que tenga en cuenta las dinámicas que generan conflictos, que, en consecuencia, empeoran el sueño de la población. Descriptor: Sueño; Salud del sueño; Jornada laboral; Neoliberalismo.
--	---

INTRODUCTION

Since 1980, population-based epidemiological surveys have identified a high prevalence of poor-quality sleep, complaints and sleep disorders. Among the coping strategies elaborated, the notion of sleep hygiene was conceived, with evidence-based recommendations that inform conducts and behaviors so that individuals incorporate practices for healthier sleep. Despite the constant review and improvement of these recommendations, there is no relevant impact of sleep hygiene on the prevention or reduction of the prevalence of sleep disorders and problems. The hypothesis is developed here that this is due to a biologizing and individual-centered view of sleep health, regardless of the socio-historical location that sleep currently presents. Research on the use of time¹ shows that sleep duration is a function of the duration of wakefulness, which is eminently dedicated to work. Ideologies and material needs, in the neoliberal moment of capitalism, undermine the rest time of the working class, and consequently, the time to sleep. The configuration of these elements in Brazil, a country of dependent capitalism and with a strong presence of precarious work, carries out complex mediations with the individual's sleeping time.

Marx² described that the process of consolidation and expansion of capital overcame geographical, technical, and cultural barriers, including the blurring of the boundaries between day and night work. Furthermore, the intense expropriation of absolute surplus value characteristic of this period of consolidation of capitalism not only highlighted the limits of human sleep, but also the relationship between the class struggle, working hours and hours of rest. The trend of continuous expansion of capital developed in a new stage with the crisis of capitalism in the 1970s–80s, configuring the so-called "24/7 society"³ and establishing new forms, including ideological ones, of subjugating sleep and rest time to work time.

The objective of this essay is to draw an overview of the historical-social development of sleeping behavior in Western societies, especially from the nineteenth century onwards, combining biomedical research and Marxist studies, in order to build a critical and radical alternative to sleep health.

DEVELOPMENT

SLEEP HEALTH OVERVIEW

The relevance of the so-called "health behaviors" has been widely highlighted since the 2000s, based on the accumulation of evidence that points to the influence of behaviors such as physical activity, diet, and the use of tobacco and alcohol on mortality.⁴ In this context, the emerging literature on sleep has also established a relationship between the act of sleeping, mortality^{5,6} and health in general.⁶ From the point of view of public health, there is another fundamental aspect in the relationship between health and sleep, which consists of the high prevalence rates of sleep disorders and problems,^{7,8} in addition to a significant burden of disease^{9,10} for the population. Specifically with regard to mortality, sleep duration outside the recommended range (meta-analyses include studies with a follow-up of one to 30 years) resulted in a 10 to 23% increased risk of overall mortality.^{5,6} Among the consequences for general health, it is possible to list an increase in the risk of *type 2 diabetes mellitus*, cardiovascular events, obesity and hypertension, among others.⁶

It is possible to see that, currently, a significant portion of the world's population is affected by sleep disorders or problems.¹¹ Among sleep problems, we can list poor sleep quality, short or long duration of sleep (since both are associated with negative health outcomes), complaints or symptoms such as excessive daytime sleepiness, snoring, light sleep, among others. The most common sleep disorders include obstructive sleep apnea (OSA) and chronic insomnia.^{12,13}

The perception that people sleep less and less in modern society has motivated a series of investigations, in order to clarify the dimension of the problem, its impacts on health and physiological mechanisms. The development of the research also collected data on the negative effects of long sleep duration, showing that there is an ideal total sleep time for each individual, neither restricted nor excessive. Despite the variability in the literature on the thresholds of short or long duration of sleep, a significant part of the specialized corpus, including Brazilian studies, considers the duration of less than six hours as short, and as the long duration more than eight hours. Epidemiological surveys in different countries found prevalences of short sleep duration of 30%¹⁴ in the United

States of America, 11.6% in Iran¹⁵ and 35.9% in France.¹⁶ A study conducted in São Paulo evaluated the objectively^a measured sleep duration, and found rates of 27.2% for short sleep duration and 6.3% of individuals slept more than eight hours, indicating that approximately one third of the city's population had a sleep duration outside the recommended range.¹⁷

Among the complaints, symptoms and sleep problems, two stand out, excessive daytime sleepiness and poor sleep quality. Excessive daytime sleepiness can be defined as the inability to stay alert during daytime wakefulness, resulting in sleep attacks or naps that cannot be resisted.¹⁸ Although its analysis varies significantly depending on the methodology used, the prevalence of excessive daytime sleepiness ranges from 2.5 to 33%.¹⁹ This symptom may or may not be related to a sleep disorder, and is associated with decreased psychomotor performance, academic and work performance, as well as a higher risk of work and traffic accidents.^{19,20} Poor sleep quality is a broad term that encompasses a series of problems such as non-restorative sleep, tiredness upon waking, difficulty sleeping and excessive awakenings, symptoms often aggregated in questionnaires such as the Pittsburgh Sleep Quality Index.²¹ A recent national study conducted in Brazil with 2,635 people observed that 65.5% of participants reported poor sleep quality.²²

Regarding sleep disorders, the Epidemiological Study of Sleep, conducted in the city of São Paulo in 2007, observed a prevalence of 32.4% for OSD¹² and 15% for chronic insomnia.¹³ It is estimated that approximately 936 million individuals suffer from OSA worldwide,¹⁰ while about 10% of the population suffers from chronic insomnia.²³ It is worth noting that OSA is associated with the development of excessive sleepiness, increased risk of cardiovascular and metabolic events, while chronic insomnia may be related to anxiety, depression, and cardiovascular consequences.²³ In view of the data presented, we can understand the global dimension of this public health problem, since it affects millions of people in several countries.

^a Actigraphs, a type of accelerometer, were used to infer the sleep duration of the individuals. Therefore, this study is a more accurate picture of the concrete sleep situation in the population studied, especially in comparison with the use of questionnaires, which introduce a significant bias due to self-reported sleep duration.

COUNTERPOINTS OF OTHER SOCIETIES AND OTHER TIMES

The panorama of the prevalence of sleep problems and disorders is serious, and its global characteristic gives the prospect of being an inescapable phenomenon. However, the prioritization of wakefulness over sleepiness, especially so that one can work, consume, or have leisure and rest time, is a historically localized form. Studies in human groups far from the capitalist system, in space and time, demonstrate some important differences in relation to sleep.

Sleep duration has currently been a subject of controversy in the field of sleep epidemiology, especially in terms of the hypothesis that there has been a decrease in this parameter due to modern life (defined in various ways, such as the daily life of industrial societies, diffusion and use of electric light, television and electronic devices). For this reason, research with different methodologies and experimental designs was carried out, including the investigation of isolated or partially integrated peoples, which present interesting results for the present analysis.

A study published in 2015 looked at three ethnicities in Tanzania, Bolivia, and Namibia²⁴ living primarily as hunter-gatherers. Through the use of actigraphs, a sleep duration similar (approximately 6–7h) was found to studies carried out in urban environments and a strong synchrony of bedtime and wake-up times with the fluctuation of environmental temperature was observed, with awakening coinciding with sunrise. In fact, seasonal variation in sleep duration was found between winter and summer. However, the most surprising finding was the lack of a word for insomnia in the groups investigated. In addition, the prevalence of chronic insomnia, after the concept was explained, was approximately 1.5 to 2.5%.²⁴ Other studies have evaluated the use of electric light, which is often blamed for late hours or decreased sleep duration. A study of the Qom ethnic group in Argentina compared hunter-gatherer communities with and without access to electricity.²⁵ The result was that individuals belonging to the community with access to electric light had shorter sleep duration (approximately 40 minutes less) compared to those exposed only to natural light. This decrease was associated with the community's later bedtime with electricity.²⁵ Similar data were found in another study with Melanesian horticulturists.²⁶ These results show that the sleep pattern in these

communities is strongly synchronized with nature, and that sleep disorders affect a much smaller proportion of these populations, compared to industrial societies. The diffuse use of electric light can be a detrimental factor to sleep.

Historian Robert Ekirch, in his book *"At Day's Close"* chapter 12 - *"Sleep We Have Lost"*, explores a sleep dynamic in Europe between the thirteenth and eighteenth centuries.²⁷ Elaborating a historical study based on criminal and judicial testimonies, literary and medical works of the time, prayers and religious meditations, among other sources, Ekirch observed an organization of sleep in two periods of approximately 4 hours separated by a period of wakefulness. Between the first and second sleep, individuals did or did not perform a series of activities, such as housework, prayers, sexual relations, contemplating their lives or simply going back to sleep. This way of sleeping, along with other practices such as the oracular interpretation of dreams, began to be forgotten or transformed throughout the nineteenth century.²⁷ In this sense, it is understood that behavior has an important social and learned aspect and not simply inherent or solely biological, however essential it may be, as is the case with sleep. Understanding the economic and social mediations that affect health behaviors is essential for us to promote them effectively.

The rescue made in the paragraphs above aimed to question the naturalness and scale with which today's society suffers from sleep problems and disorders. What has been experienced is not inherent to the human being. In view of this evidence, the next question would probably be, "Is modern life equivalent to or conducive to the emergence of an epidemic of bad sleepers?" We will deal with that below.

WORKING TIME, SLEEPING TIME

Research on the use of time brings a privileged perspective to the analysis of its allocation in the daily lives of individuals. By aggregating data from the *American Time Use Survey* from 2003 to 2005, totaling 47,731 participants, Basner (2007)¹ demonstrated that, in the American population, sleep time is exchanged mainly for work.¹ Specifically, it was demonstrated that short sleepers (separated into groups according to sleep duration, from 7.5 h to 4.5 h of sleep) had increasing regression coefficients in relation to the outcome work time, and long sleepers (from 9.5 hours to >11.5 hours of sleep) had

inversely proportional coefficients for work time, configuring a strong and linear relationship between the time allocated to sleep and work. In second and third place, the activities that took up the most sleep time were commutes (work-home trips) and socialization/entertainment.¹ In other words, individuals who slept little did so because of their work, and the reverse was also true. The synchrony between sleep and work contrasts with the synchrony with the environmental cues observed in the hunter-gatherer groups. In view of the dialectical relationship between wakefulness-work and sleep-rest, elements of the process of transformation of the insertion of sleep in everyday life can be verified in the works and historical-dialectical materialist method of Marx and Engels.^{2,28}

The subjugation of sleep to work could be accomplished through processes such as the proletarianization of individuals, catalyzed by the privatization of the means of production, and the expansionist tendency of capital to remove or circumvent any and all obstacles to its reproduction, as well as to absorb as much living labor as possible in order to maximize the expropriation of surplus labor and generate the greatest possible value.

The first element concerns the process of privatization of the means of production. In England, it took the form of enclosures and private ownership of the nascent industries.²⁹ In parallel with the increase in demand for textile goods on the basis of innovations in the techniques of manufacture of these products in the second half of the eighteenth century, the English rural population was gradually expropriated, by means of Acts of Parliament, of the means of production of their livelihood, of small property and of communal lands. The result of this process was a contingent of individuals leaving the countryside and heading to the cities with only their labor power as a means of survival.³⁰ The sale of labor power as the only means of survival, inserted in the capitalist mode of production, in practice causes one to dispense, either by perceived need, or by forced coercion of the employer, from other human needs, including sleep.

In Volume I of *Capital*, chapter "The Working Day," Marx³⁰ described the organization of work in factories and the length of the working day in them.² The propertied bourgeoisie, at the moment of consolidation of the capitalist mode of production, took to the last limits the human capacity to keep working in order to generate the greatest possible value. In order for fixed capital, the machines, to maximize the value

generated in the production process, it was necessary to absorb the greatest possible amount of surplus labor, from the purchase of the labor power of the proletariat. In this way, the rate of absolute surplus value expropriated, at this moment of capitalism, made up an important part of the generation of value then observed. Concretely, extremely long working hours were observed, of 12, 14 hours or up to the physical limit of each worker. Under these conditions, obviously the time of rest, and consequently the time to sleep, was the minimum allowed by the capitalist. In the logic of maximizing the absorption of living labor, ways were developed to circumvent the physiological need to sleep, as it is a natural and insurmountable barrier to the extraction of surplus value from individuals. In the midst of the organization of work in the factories, these strategies took the form of very long working hours, blurring the boundaries between day and night, and the system of rotation, the embryo of contemporary shift work.³⁰ The relay system consisted of two sets of workers who were employed alternately, one set working during the day and the other during the night, which allowed production to continue almost uninterruptedly. Before it was regulated, this system imposed an intense overload of work on proletarians, including children, in the name of "reducing the costs of production".³⁰⁽²³⁶⁾ It is known that shift work triggers a series of damages to sleep and general health,³¹ thus constituting another form of damage to sleep health.

The development of industrial and rural capitalism in nineteenth-century England introduced a new discipline and temporal organization of labor, which was no longer a function of the task to be performed, as was the case even in the previously dominant manufactures, but of the time of the clock and the machine,³² increasingly identified with the temporality of the bourgeoisie. Agrarian work, in the artisans' manufactures and workshops, whose workers still owned the means of production, followed its own logic oriented mainly to the task to be performed, configuring a certain irregularity in the distribution of work in the day and week. Weavers and urban artisans, for example, maintained the custom of Holy Monday, a day on which they did not work or were used for other related functions such as receiving material or repairing equipment. For these workers, the tasks were mainly concentrated between Wednesdays and Saturdays, which varied during the year, due to the demand for work or mixed occupations (e.g., weaver/English farmer).³² This irregularity aroused the attack of the bourgeoisie, which

took forms such as factory codes of conduct, the imposition of the rhythm of the machines on the worker and an impressive number of texts lamenting the "indolence", "idleness" and the "loss of time" resulting from the inconstant rhythms. The constant running of machines was the very antithesis of the irregular pattern of craftsmen, and liberal thinkers rationalized this constancy as an instrument for imposing punctuality and regular rhythm on proletarians.³² The new organization imposed strict schedules for the beginning and end of the daily workday, prohibition or fine for any idleness or interruption of work, eventual rewards for punctuality, discipline imposed by factory directors and supervisors. In appearance, their aims were to combat the supposed indolence and laziness of the workers (aims that were not new at the time), but in essence to increase the rate of absolute surplus value. This can be observed in the widely documented theft of time,^{30,32} carried out by factory directors through the tampering of clocks, as well as small cumulative thefts of break time, entry and exit times.

It is clear that so many abuses by the capitalists have elicited resistance and struggle on the part of the proletariat. The Marxian analysis of Factory Acts^{30(part 6)} throughout the nineteenth century is a concrete case of how the working day changes as a function of the class struggle, understood as the efforts of both the bourgeoisie and the working class to impose their interests by increasing or limiting the workload. Resistance took the form of agitations, protests, and demands to the English Parliament. Although the first Factory Laws were enacted before 1833,²⁵ they were largely ineffective. From the Law of 1833, some regulations began to be imposed. Initially circumscribed to specific industries (cotton and wool, for example), it regulated the length of the working day, the working day and the break time, but on the other hand, it "created the need" to use the relay system for child labor so as not to regulate the adult workload. Due to the organization of the workers, as well as the struggle between fractions of the bourgeoisie (industrial and rural), other laws were enacted in 1844 (regulating women's working hours) and 1847 (the Ten Hour Law, child and female labor, repealed in 1850). Faced with great workers' unrest in response to the annulment of the Ten Hours' Law, Marx states that the subsequent Law of August 5, 1850 was of a conciliatory nature between classes, extending the regulations to all industrial sectors and ending the system of child relays, but increased the workload of women and adolescents to 10 and a half hours.³⁰

In reviewing the work *The Condition of the Working Class in England in 1885*,²⁸ Engels notes that part of the abuses committed by the English bourgeoisie has ceased. The mercantile, financial, and industrial expansion experienced by the bourgeoisie in the 1850s–60s of the nineteenth century leveraged the growth of a fraction of the industrial bourgeoisie to new heights. In this way, in order to leverage itself even more against other fractions of the less affluent bourgeoisie and accelerate the concentration of capital, this fraction of capitalists began to extinguish or reduce the grossest abuses made against a part of the industrial proletariat such as excruciating working hours for children and debt bondage (the *truck system*), in addition to support for *Factory Acts*, resulting in a slightly less exhausting working day for this fraction of the proletariat.²⁸ With a new critical mass of workers in the same industry, the industrial bourgeoisie sees a profitability in granting a longer rest time, favoring the effectiveness of the individual worker. The apparent change in attitude of the industrial capitalists, in addition to being useful against lesser competitors, promoted the appeasement of the working class. By making certain concessions, the factory no longer wasted time due to claims or strikes, for example.²⁸ Therefore, the length of the working day varies not only because of the workers' struggle, but also because of the efforts of the bourgeoisie that may be interested in increasing or decreasing the workload.

Other examples of class struggle include the struggle for the eight-hour workday, with the slogan 8-8-8 (eight hours labour, eight hours recreation, eight hours rest, present since Richard Owen's 1817 experience in New Lanark) and the 1917 General Strike in Brazil. Although it is not possible to distinguish rest time from sleep time in the context discussed, we can safely say that the working day, and consequently, the period of rest and sleep, also vary as a function of the class struggle. Also noteworthy is the character of continuous expansion of capital, inserting factory work at night and testing the physical limits of workers. The achievement of a fair working day, in addition to the direct benefits of having more time for oneself, would be the limitation of the time sold to the capitalist and the time of which the worker owns and disposes of it in the way that suits him. This imposition circumscribed limits to capitalist expropriation and allowed the worker to direct his energies to other activities such as organization and political action.³⁰(note 201)

Ideologically^{b,33(60)} it is possible to observe the tendency to relegate to sleep an undesirable characteristic, laziness or even femininity. Discourses that have diminished sleep, in different ways, have proliferated since the seventeenth century and extend over time. Sleep as an obstacle to reason and knowledge can be observed in rationalist writings, such as Hume's *Treatise on Human Nature* (1739).⁽¹²⁾ The *topos* of sleep as an expression of laziness was reinforced in works such as *The Poor Man's Family Book* (1674),³² Benjamin Franklin's *Poor Richard's Almanack* (1741),³⁴ among others, and subsequently repeated to exhaustion by the bourgeois class and its ideologues. Even the scientific understanding of sleep, until the advent of modern sleep science, described sleep as a passive state, of absence of brain activity, implying a physiological inferiority to this state.³¹ The tendency to masculinize wakefulness is widely observed in the United States of America, and was explored in the book "Dangerously Sleepy: overworked Americans and the cult of manly wakefulness", by Alan Derickson, in 2014.³⁴ This ideological operation elevated individuals such as Thomas Edison and Benjamin Franklin to the rank of role models, among other attributes, due to their almost superhuman dedication to work and a remarkable disdain for sleep, both organized in an iron and efficient discipline. The result of this dedication were the "feats" that these individuals built while still alive, establishing immense networks of business, inventions and personal prosperity. This model is followed by individuals from different sectors of the economy, of which Derickson³⁴ highlights technology workers, coaches, lawyers, entrepreneurs, among others. In this ideological framework, it is a reason for manly pride to have the necessary vigor to work for hours on end without needing to sleep. The counterpart, of sleep and rest, was represented as weak, feminine.³⁴

It sought to demonstrate that the inferiorization of sleeping behavior and its subjugation to working time was strongly associated with the development and consolidation of the capitalist mode of production, its fundamental characteristics, social relations and ideological elements linked to it. However, it is possible to observe that the current situation shows qualitative differences to the panorama presented, especially in

^b The concept of ideology used in this essay is in line with Couto,²⁹⁽⁶⁰⁾: "teleological activities whose objective is to influence and guide the mental universe of other individuals, serving as a starting point for conceptual thinking".²⁹⁽⁶⁰⁾

what is called "24/7 society".³ The study of this concept leads us to the analysis of the structural crisis of capitalism in the 1970s–80s and its reaction, neoliberalism, in which we can locate some of these qualitative changes in the relationship between capital, labor and sleep.

NEOLIBERALISM AND SOCIETY 24/7

The structural crisis of capitalism observed in the 1970s and 1980s engendered a series of reactions to counterbalance the downward trend in profits, including new ideological apparatuses, behavioral control, dismantling of social welfare systems and, of fundamental importance for sleep, the 24/7 society.³

The neoliberal strategies to confront the structural crisis consisted, among other actions, in increasing the rate of exploitation of the working class. In this way, there was the dismantling of labor rights and the social welfare systems of the post-war period, attacks on wages, privatizations, and job insecurity.³⁵ These changes were even accompanied by an increase in working hours in at least some countries such as the USA, the United Kingdom and Australia³⁶ (this is not necessarily the case in Brazil, in which, in 1988,³⁷ a constitutional limit of 44 hours was instituted, subsequently reducing the working day in comparison with the previous period).³⁷ Concretely, the exploitation of the working class takes the form of the flexibilization of work and the intensification of functions, in a logic of financialization of time. In neoliberalism, we can find a new stage in the imposition of the discipline of machines on living labor, called "bioregulation" by Teresa Brennan in *"Globalization and its Terrors"*, 2003.³⁶ The reduction of wages, the threat of constant unemployment and the flexibility of working conditions makes the cost of living for the worker excessive. Because of this, there is an increase in the need to sacrifice more and more human needs – bioregulation – processed and convenient food becomes the rule, physical and mental health ignored or quickly treated with some medication, less and less time for rest and sleep (or poorer quality sleep), all imposed by the individual himself due to his material needs.³⁶ Also, living in places farther from the workplace or the city center becomes a growing reality among workers due to the lower purchasing power and gentrification of cities, increasing commuting time, another factor that consumes rest time.³⁶

With the entry into the market of new mass media technologies in the 1970s and 1990s, such as VHS, the personal computer, video games, and, at a later time, the Internet and smart devices, the so-called attention economy was taking shape.³ Technology and media companies increasingly compete for the attention of individuals, as this in itself can generate value for these industries (e.g., Ibope, number of clicks/interactions, time spent on social networks, and exposure to advertising). This results not only in the ubiquity of electronic devices in our lives, and therefore of the companies that manufacture these devices, but also in the establishment of almost uninterrupted interaction and consumption platforms. Just rescue the product catalog of technology companies – home assistants (Alexa, Google Nest), *smartphones*, social networks, payment platforms, entertainment and applications of all kinds of functionality. There is no mastery of life and sociability, with the notable exception of sleep^c, which is not attempted to be transformed into a product. It is worth noting that the excessive use of electronic devices is considered a risk factor for the development of sleep problems.²² Therefore, we have in the attention economy, especially in its digital form and **inserted in the capitalist mode of production**, another competitor with sleep time.

Neoliberalism also took advantage of ideological mechanisms to capture the subjectivity of individuals. The imperative of the individual as a "full-time economic agent"³⁽⁷¹⁾ in the face of precarious work and falling wages, has foisted on workers mechanisms of self-regulation and control. Among these mechanisms, we can list "proactivity", "competitiveness", and "productivity", which act 24/7 on the behavior of individuals, characterizing the so-called "society of control".³⁽⁷¹⁾ It is noteworthy that the ideological mechanisms of sleep inferiorization and disciplinarization present in previous historical moments have not disappeared, but rather operate in parallel with the novelties. Voluntary sleep deprivation as a quality of vigor and masculinity, having gone out of fashion in the post-war period, is once again exalted in the context of neoliberalism,³⁴ for example. The argument about the relationship between sleep and control of material life,

^c In the sense that it is not yet necessary to pay to sleep, or to pay to do something while sleeping. On the other hand, sleep is continuously eroded by other products and services around it, such as hypnotic and sleep-promoting drugs, supplements such as melatonin, wearable devices and their applications to measure sleep outside the clinical environment, the medical industry, the recent "sleep tourism", among others.

made by Hale and Hale³⁸ can be useful to deepen the discussion of the ideological effects mentioned. In this article, it is argued that sleeping behavior is performed as a function of the activities performed during wakefulness, such as working, studying and socializing, but mainly according to the individual's relationship with these activities. Therefore, if a person is able to control these activities autonomously, according to his or her own interest, he or she is also able to sleep better: "Evidence shows that people who have greater control of their lives are those who sleep more optimally"^{d. 38(363)} Based on this concept, we can understand that inadequate sleep duration, for example, can emerge from situations that reduce individuals' control over their materiality. On the other hand, ideological mediations can also produce effects on sleep by changing the individual's relationship with the tasks and activities of wakefulness.

According to Jonathan Crary,³ in his book *"24/7: Late Capitalism and the Ends of Sleep"*, the 24/7 society means a society in which there is the possibility of selling labor power, consuming products, services and advertising at any time of the day, at any time of the week in an uninterrupted manner. It also implies uninterrupted and simultaneous connectivity, parallel to the homogenization of the experience that this connectivity is based on. It is related to a constant novelty, there is always a new device or technique to be learned, but which hardly deeply questions the structures and mechanisms of control in force. The phrase 24/7 represents the arbitrary erasure—but not extinction—of human rhythms, including the sleep-wake cycle, and planetary rhythms such as day and night. This characteristic of homogenization of time and rhythms is intimately linked to the consolidation of the "constant continuity"³⁽⁶⁵⁾ of the process of capital circulation, as Crary states when he rescued Marx's *Grundrisse*. In this way,

[...] if circulation was an essential process of capital, it was due to the "constant continuity of the process." In effect, Marx is postulating that 24/7 temporalities are essential for the functioning of capital.³⁽⁶⁵⁾

CRITICISM OF THE CONCEPT OF SLEEP HYGIENE

From the elements discussed, we can build a critical view of the academic practice of sleep medicine and biology in relation to sleep hygiene, which is one of the main tools

^d Optimal sleep means adequate sleep duration free from sleep problems or disturbances.

used to combat the high prevalence of sleep problems. Before making the criticism, it should be noted that the biomedical literature demonstrates the positive impact of behavioral adjustments on sleep health. Sleep hygiene consists of education on good practices related to sleep, such as avoiding the use of electronic devices; caffeine; tobacco; heavy meals; physical exercise and alcohol close to bedtime, establish a regular bedtime and wake up, avoid stress when going to bed, among other recommendations.³⁹ Thus, sleep hygiene can be an effective measure to promote good sleep quality. However, even the biomedical literature recognizes that the impact of this measure in the context of public health is limited and the epidemiological evidence is inconsistent.³⁹ It is argued that one of the reasons for this is the limitation that the very concept of health used entails (as will be discussed below), in addition to the individualizing framework on which these recommendations are based, dispensing with the socioeconomic and historical mediations that affect health behaviors.

In this context, the situation of Brazilian sleep health is aggravated by the absence of public health structures and programs that pay attention to this essential dimension of health. A systematic review conducted in 2020⁴⁰ did not find any evidence of the economic impact of the treatment of sleep disorders by the Unified Health System (SUS) in Brazil, primarily due to the lack of studies addressing the topic. Even more worrying was the finding of the lack of incorporation of treatments for the main sleep disorders into the SUS, whether they were drug or not.⁴⁰ Therefore, in Brazil, sleep health care is provided exclusively by the private health network, with isolated actions organized by medical and academic institutions to promote the population's awareness of sleep and sleep hygiene. This makes it difficult, in practice, to develop strategies to combat the high prevalence of sleep disorders and problems.

The notion of health used by sleep medicine is similar to that used by the World Health Organization,⁴¹ which understands it in a static way, being a state of physical, mental and social well-being, which has specific limitations in relation to sleep health. The generalization of poor sleep quality is interconnected with the relations of capitalist production, its phases of development and the political and economic measures that its agents conduct to ensure the reproduction of capital and its social relations. Here we have a concrete example of the need to use a concept of health that takes into account

the socio-historical mediations that produce conflicts. In this way, a dialogue is established with the concept of health advanced by Ferrara.⁴² An alternative definition of health was developed in the book "*Teoría Social y Salud*",⁴² which incorporates the need to overcome the conflicts that generate the health-disease processes, becoming a necessarily dynamic and dialectical definition:

On the contrary, it is necessary to find the linguistic references that encompass the dynamic sense of health-infirmity, which comprehend health as an incessant search for society, as a constant appeal to the solution of conflicts that plant existence. [...] It is not the conflict that defines the pathological, but that it is the block of conflicts and the impossibility of resolving this conflict, physical, mental or social, which certifies the idea of illness.⁴²⁽¹⁰⁾

The application of this concept to the issue of sleep health brings immediate understandings: the generalization of inadequate sleep is a pathology due to the inability, both of individuals and of current collective health, to attack the conflict that generates so many sleep problems. In situations of increased absolute surplus value, there is the direct counterpart of less rest and sleep time. In the case of intensification and precariousness of working conditions, as observed in neoliberal strategies to face the structural crisis of capitalism, the excessive distress, worsening of mental health and resulting psychiatric symptoms exhausts the worker and can worsen the quality of sleep. Furthermore, ideologies play an important role in instilling in individuals' mechanisms for self-regulation of work and consumption time, relegating sleep to the background, or even sacrificing sleeping behavior to meet the need for greater productivity.

Ferrara⁴² also emphasizes the historical and social dimension of health. The transition to modern society, in the field of sleep health, is often taken in an apparently neutral way by triangulating the origins of the social alteration of sleep in processes such as industrialization, diffusion of electric light and shift work.⁴¹ However, these developments do not occur in isolation and are not, in themselves, responsible for the sleep problems of workers. It is necessary to consider the historical location of capitalism and the role of the social relations of capital as the generators of conflict, since these, in their interaction with the elements of electric light, work discipline, entrepreneurship, etc., are what generated the problems and sleep disorders on a large scale. On the other hand, action is central to overcoming this situation. As previously exposed, the time allocated

to work and rest has a strong determination for the class struggle; Therefore, there is a concrete horizon of action to establish a fair working day and ample possibility of rest and sleep for the working class. Finally, Ferrara's concept of health,⁴² with its socio-historical dimensions, presents several mediations that escape the scope of the individual and individualism. For this reason, it amplifies the field of possibilities and action to improve sleep health, in contrast to sleep hygiene, which is an eminently individual measure. Therefore, it is argued that the concept of health coined by Ferrara⁴² enables a wider and more effective range of actions to promote sleep health.

FINAL CONSIDERATIONS

The present essay sought to rescue and synthesize important elements for a Marxist understanding of sleeping behavior and, mainly, of the high prevalence of sleep disorders and poor quality in today's society. The abnormal situation that sleeping occupies socially, and the role of the development of capitalist social relations and production, in their moments of consolidation and structural crisis, were highlighted as causal factors of the generalized worsening of sleep health. In addition, a critique of the concept of sleep hygiene as the main intervention was constructed, based on the concept of health as a possibility of action against the conflicts that generate the health-disease processes.

Future research, when analyzing the profoundly complex situation in Brazil, should consider the possibility of producing specific data on the use of time, in addition to the number of hours worked or slept per week. It is necessary to know the patterns of rest and, inserted in this, the patterns of sleep in the general population, including their stratification in relation to the material and work situation of the proletariat. There is also a lack of data on how the Brazilian population values and inserts sleep in their daily lives. Due to the limited space of this essay, the issues of gender and race, urbanization and its concentration of sounds, lights and machines, intermediate factors such as social support networks, family dynamics, quality of the household, ideological elements such as scientific management, entrepreneurship and *Toyotism* were not explored, despite being extremely relevant to the topic discussed.

Practical action to build a possibility of overcoming widespread poor sleep quality goes through the achievement of labor rights and better living conditions for the working class. Not only claiming such agendas as an obligation of the State, but also as a revolutionary perspective – organizing the working class to do so. Another point of action is the insertion of sleep health care by public health, mainly to disseminate the already proven treatments for sleep disorders. This insertion can expand the possibility of health professionals being able to act concretely by demystifying neoliberal ideologies of sacrifice and inferiority of sleep, questioning the equation between sleep and laziness or the need to renounce sleep. Karl Marx pointed out that the achievement of a fair working day has the double benefit of longer rest time, but also a period of the day from which the worker gives it the utility that best suits him, outside the control of the capitalist, including for sleeping. Keeping this in mind, sleeping well is on the revolutionary horizon.

AUTHORIAL CONTRIBUTION

GLF performed the conceptualization, investigation, methodology, writing of the original manuscript, writing – review and editing.

REFERENCES

1. Basner M, Fomberstein KM, Razavi FM, Banks S, William JH, Rosa RR, et al. American time use survey: sleep time and its relationship to waking activities. *Sleep*, 2007 Sep;30(9):1085-95. <https://doi.org/10.1093/sleep/30.9.1085>.
2. Marx K. *O capital: crítica da economia política*. Boitempo: São Paulo; 2013. O processo de produção do capital (Lv. 1).
3. Crary J. *24/7: late capitalism and the ends of sleep*. London: Verso; 2014.
4. Mokdad AH. Actual causes of death in the United States, 2000. *JAMA*. 2004;291(10):1238-45. <https://doi.org/10.1001/jama.291.10.1238>.
5. Grandner MA, Hale L, Moore M, Patel NP. Mortality associated with short sleep duration: the evidence, the possible mechanisms, and the future. *Sleep Med Rev*. 2010;14(3):191-203. <https://doi.org/10.1016/j.smrv.2009.07.006>.
6. Itani O, Jike M, Watanabe N, Kaneita Y. Short sleep duration and health outcomes: a systematic review, meta-analysis, and meta-regression. *Sleep Med*. 2017;32:246-56. <https://doi.org/10.1016/j.sleep.2016.08.006>.
7. Stranges S, Tigbe W, Gómez-Olivé FX, Thorogood M, Kandala N-B. Sleep problems: an emerging global epidemic?: findings from the INDEPTH WHO-

SAGE study among more than 40,000 older adults from 8 countries across Africa and Asia. *Sleep*. 2012;35(8):1173-81. <https://doi.org/10.5665/sleep.2012>.

8. Amiri S. Sleep quality and sleep-related issues in industrial workers: a global meta-analysis. *Int J Occup Saf Ergon*. 2023;29(1):154-67. <https://doi.org/10.1080/10803548.2021.2024376>.
9. Lubetkin EI, Jia H. Burden of disease due to sleep duration and sleep problems in the elderly. *Sleep Health*. 2018;4(2):182-7. <https://doi.org/10.1016/j.sleh.2017.11.007>.
10. Benjafield AV, Ayas NT, Eastwood PR, Heinzer R, Ip MSM, Morrell MJ, et al. Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis. *Lancet Respir Med*. 2019;7(8):687-98. [https://doi.org/10.1016/S2213-2600\(19\)30198-5](https://doi.org/10.1016/S2213-2600(19)30198-5).
11. Lim DC, Najafi A, Afifi L, Bassetti C, Buysse DJ, Han F, et al. The need to promote sleep health in public health agendas across the globe. *Lancet Public Health* 2023;8(10):e820-6. [https://doi.org/10.1016/S2468-2667\(23\)00182-2](https://doi.org/10.1016/S2468-2667(23)00182-2).
12. Tufik S, Santos-Silva R, Taddei JA, Bittencourt LR. Obstructive sleep apnea syndrome in the Sao Paulo epidemiologic sleep study. *Sleep Med*. 2010;11(5):441-6. <https://doi.org/10.1016/j.sleep.2009.10.005>.
13. Castro LS, Poyares D, Leger D, Bittencourt L, Tufik S. Objective prevalence of insomnia in the São Paulo, Brazil epidemiologic sleep study. *Ann Neurol*. 2013 Oct;74(4):537-46. <https://doi.org/10.1002/ana.23945>.
14. Centers for Disease Control and Prevention. Short sleep duration among workers: United States, 2010. *MMWR Morb Mortal Wkly Rep*. 2012;61(16):281-5.
15. Najafi A, Akbarpour S, Najafi F, Safari-Faramani R, Sadeghniiat-Haghighi K, Aghajani F, et al. Prevalence of short and long sleep duration: Ravansar NonCommunicable Disease (RaNCD) cohort study. *BMC Public Health*. 2022;22(1):1631. <https://doi.org/10.1186/s12889-022-14061-4>.
16. Leger D, Richard JB, Collin O, Sauvet F, Faraut B. Napping and weekend catchup sleep do not fully compensate for high rates of sleep debt and short sleep at a population level (in a representative nationwide sample of 12,637 adults). *Sleep Med*. 2020;74:278-88. <https://doi.org/10.1016/j.sleep.2020.05.030>.
17. Santos RB, Giatti S, Aiello AN, Silva WA, Parise BK, Cunha LF, et al. Self-reported versus actigraphy-assessed sleep duration in the ELSA-Brasil study: analysis of the short/long sleep duration reclassification. *Sleep Breath*. 2022;26(3):1437-45. <https://doi.org/10.1007/s11325-021-02489-8>.
18. American Academy of Sleep Medicine. International classification of sleep disorders. Darien, IL: AASM; 2014.

19. Pérez-Carbonell L, Mignot E, Leschziner G, Dauvilliers Y. Understanding and approaching excessive daytime sleepiness. *Lancet*. 2022;400(10357):1033-46. [https://doi.org/10.1016/S0140-6736\(22\)01018-2](https://doi.org/10.1016/S0140-6736(22)01018-2).
20. Bioulac S, Micoulaud-Franchi JA, Arnaud M, Sagaspe P, Moore N, Salvo F, et al. Risk of motor vehicle accidents related to sleepiness at the wheel: a systematic review and meta-analysis. *Sleep*. 2017;40(10). <https://doi.org/10.1093/sleep/zsx134>. Erratum in: *Sleep*. 2018;41(7). <https://doi.org/10.1093/sleep/zsy075>. PMID: 28958002.
21. Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh sleep quality index: A new instrument for psychiatric practice and research. *Psychiatry Res*. 1989;28(2):193-213. [https://doi.org/10.1016/0165-1781\(89\)90047-4](https://doi.org/10.1016/0165-1781(89)90047-4).
22. Drager LF, Pachito DV, Morihisa R, Carvalho P, Lobão A, Poyares D. Sleep quality in the Brazilian general population: a cross-sectional study. *Sleep Epidemiol*. 2022;2:100020. <https://doi.org/10.1016/j.sleepe.2022.100020>.
23. Morin CM, Jarrin DC. Epidemiology of insomnia: prevalence, course, risk factors, and public health burden. *Sleep Med Clin*. 2022;17(2):173-91. <https://doi.org/10.1016/j.jsmc.2022.03.003>.
24. Yetish G, Kaplan H, Gurven M, Wood B, Pontzer H, Manger PR, et al. Natural Sleep and its seasonal variations in three pre-industrial societies. *Curr Biol*. 2015;25(21):2862-8. <https://doi.org/10.1016/j.cub.2015.09.046>.
25. Iglesia HO, Fernández-Duque E, Golombek DA, Lanza N, Duffy JF, Czeisler CA, Vaseghnia CR. Access to electric light is associated with shorter sleep duration in a traditionally Hunter-Gatherer Community. *J Biol Rhythms*. 2015;30(4):342-50. <https://doi.org/10.1177/0748730415590702>.
26. Smit AN, Broesch T, Siegel JM, Mistlberger RE. Sleep timing and duration in indigenous villages with and without electric lighting on Tanna Island, Vanuatu. *Sci Rep*. 2019 Nov 21;9(1):17278. <https://doi.org/10.1038/s41598-019-53635-y>.
27. Ekirch AR. *At day's close: night in times past*. New York: Norton; 2005. *Sleep we have lost: rhythms and revelations*; p. 300-24.
28. Engels F. *A situação da classe trabalhadora na Inglaterra: segundo as observações do autor e fontes autênticas*. São Paulo: Boitempo Editorial; 2008. p. 345-58.
29. Hobsbawm EJ. *Da revolução industrial inglesa ao imperialismo*. 5a ed. Forense Universitária: Rio de Janeiro; 2000.
30. Marx K. *O capital: crítica da economia política*. São Paulo: Boitempo; 2013. *A jornada de trabalho*. p. 221-58.

31. Drake CL, Wright Jr. K. Shift work, shift-work disorder, and jet lag. In: Kryger MH, Roth T, Goldstein CA, Dement WC, editors. Principles and practice of sleep medicine. Philadelphia: Saunders/Elsevier; 2011. p. 784-98.
32. Thompson EP, Eichenberg R. Costumes em comum. São Paulo: Companhia das Letras; 2005. Tempo, disciplina de trabalho e o capitalismo industrial. p. 267-304.
33. Couto H. O enjambrado: a precariedade estrutural e o novo padrão de reprodução social brasileiro. Porto Alegre: Nova Práxis Editorial; 2020.
34. Derickson A. Dangerously sleepy: overworked Americans and the cult of manly wakefulness. Philadelphia: University of Pennsylvania Press; 2014. Sleep is for sissies: elite males as paragons of wakefulness. p. 1-26.
35. Mendes Á. A saúde pública brasileira no contexto da crise do Estado ou do capitalismo?. Saude Soc. 2015;24(suppl 1):66-81. <https://doi.org/10.1590/S0104-12902015S01006>.
36. Brennan T. Globalization and its terrors: Daily life in the west. London: Routledge; 2003. Daily life in the West. p. 19-32.
37. Gonzaga GM, Menezes Filho NA, Camargo JM. Os efeitos da redução da jornada de trabalho de 48 para 44 horas semanais em 1988. Rev Bras Econ. 2003;57(2):369-400. <https://doi.org/10.1590/S0034-71402003000200003>.
38. Hale B, Hale L. Is justice good for your sleep?: (And therefore, good for your health?). Soc Theory Health. 2009;7:354-70. <https://doi.org/10.1057/sth.2009.15>.
39. Irish LA, Kline CE, Gunn HE, Buysse DJ, Hall MH. The role of sleep hygiene in promoting public health: a review of empirical evidence. Sleep Med Rev. 2015;22:23-36. <https://doi.org/10.1016/j.smr.2014.10.001>.
40. Finkelstein B, Guerra LDS. Impacto econômico das políticas e ações públicas relacionadas aos distúrbios do sono no Brasil. J Manag Prim Health Care. 2020;12(spe):e010. <https://doi.org/10.14295/jmphc.v12.1088>.
41. Walsh JK, Dement WC, Dinges DF. Sleep medicine, public policy, and public health. In: Kryger MH, Roth T, Goldstein CA, Dement WC, editors. Principles and practice of sleep medicine. Philadelphia: Saunders/Elsevier; 2011. p. 716-24.
42. Ferrara FA. Teoría social y salud. Buenos Aires: Catálogos Editora; 1985. Conceptualización del campo de la salud. p. 9-19.