Abstract This paper presents the main results of a study developed in a Graduate Program from 2016 to 2018 with all workers from the Intra-Hospital Commission for Donating Organs and Tissues for Transplants of a Public Tertiary Hospital, in which the general proposal was to analyze the organization and the work process of this team, investigating mental strain in the workers involved. This qualitative exploratory research in Occupational Health focused on Work-Related Mental Health. The material selected for the study was retrieved by bibliographic survey, participant observation, social questionnaire, and semi-directed individual interview. It was subjected to thematic content analysis and referred to the theoretical category of mental strain. The organization and work process analysis evidenced that workers are subject to biomechanical, biological, and mental health accident risks. This condition characterizes the wear process of these workers, in particular the mental strain, which can lead to health loss. Nevertheless, workers are emotionally connected to work, which can be a source of sublimation, providing pleasure and satisfaction.

Key words Occupational health, Mental health, Tissue and organ procurement
Introduction

This paper presents the main results of a survey (2018) carried out with workers of the Intra-Hospital Committee for Donation of Organs and Tissues for Transplants (CIHDOTT), with the general proposal to analyze the work organization and process to investigate whether the workers involved suffered a mental strain.

We aim to collaborate with discussions in Work-Related Mental Health (WRMH), a unique field of studies that recognizes the work-related health-disease process in its psychic dimension from the perspective of the Occupational Health (OH). Therefore, it refers to the persistent mental health problems in connection with work, the manifestation of distress, the relationship between subject and precarious work and, necessarily, the studies encompass the pathogenic impacts of job loss. The interdisciplinary perspective is essential for a complete knowledge of WRMH and a valuable reference for critical analyses that can contribute to advances in creating public policies for prevention in the workplace and occupational health care practice.

Substandard work is one of the effects of the social and global structural work precariousness. According to Antunes, this trend has been designed since the 1970s, with the advancement of the productive restructuring of capital and the globalization of financial markets. It expanded since 2008, with the emergence of the new phase of the structural crisis of capital.

This framework outlined a ‘new work morphology’ to characterize the ‘substandard work’ resulting from the destructive logic of the ‘outsourcing’, and ‘informality’, and ‘flexibility’ work tripod imposed by informational and digital capitalism, the so-called 4.0 industry, which, in the early 21st century, improved its domination machinery and triggered this process, transforming productive restructuring into a permanent process. This unfolding resulted in work’s heterogeneity, liquefied and without precise contours, but with the common feature of a homogenized tendency towards visible precariousness in subcontracting, outsourcing, and intermittent work.

Work organization (WO) is a crucial conceptual idea in Occupational Health. On the one hand, it is the division of tasks, which refers to their distribution and content, the prescribed operating mode, directly affecting the issue of boredom and motivation at work. On the other hand, the division of men, which refers to interpersonal relationships at work (coworkers and management), relates to issues of hierarchy and power linked to aspects of domination, submission, and servitude at work.

The second term appears as a necessary complement to the first, considering that management establishes a technical organization of work and operating modes and must verify the implementation (actual work) per the design (prescribed work). Thus, the ‘division of men’ plays an important role in analyzing psychopathological processes, given that there is a disparity between the prescribed work (formal WO) and the concrete reality of the work implementation (informal WO). Unexpected situations such as breakdowns and accidents can prevent a task from being carried out exactly as prescribed. Dejours emphasizes that “working is filling the gap between what is prescribed and what is real”, a path followed that must be invented and discovered by the worker at all times, which implies the involvement of the personality as a response to a task delimited by pressures.

Work organization encompasses the forms of evaluation, control over work, thus defining work conditions. Some work organization forms attack the worker’s mental functioning and others favorable to occupational health. Thus, knowing the work process of a given group of workers can detect the wear pattern’s main loads and general features.

In donation and transplantation, research has been carried out to investigate the psychic loads to which health professionals are exposed, related to the object of work – that is, human beings who suffer, feel pain, and die; the relationship with stressful and pressure situations; and the organization of work laden with routines, bureaucracies, controlled supervision and lack of autonomy.

At this point, we emphasize the concept of wear, in which Seligmann-Silva, based on Asa Cristina Laurell, states that “wear is seen as a product of an unequal correlation of powers imposed on work and workers, triggering forces that influence the biopsychosocial health-disease process” (p. 135); correlation of forces in which the worker is a loser and his health reflects these actual or potential losses.

Based on this framework, Seligmann-Silva developed the concept of mental strain that can be characterized in three levels: 1) organic wear: related to clinical conditions in which there was brain damage, for example, by a work accident or contact with neurotoxic substances; 2) functional wear: related to variations in malaise, such as fatigue; and 3) exhaustion of subjectivity: when the
worker’s identity is affected through the attack on values and character and includes losses whose experience leads to mental strain. The author emphasizes that sociopolitical and economic determinations intervene in the relationships between the health-disease process and the work process, which characterize “dominated work situations”. The disadvantage leads the worker’s body and psychic potentials (intelligence and feelings that are realized interactively) to be consumed by the work process, resulting in wear that will be more severe, as the workload and precarious work situation become more significant.

The life and death dichotomy in the daily lives of organ and tissue donation workers generates conflicts, difficulties, and workloads to which they are exposed. Studies indicate that nursing professionals show a significant degree of anxiety, sadness, and anguish, which reveals the need for psychological support. Several aspects studied show the illness of these workers, among which the following stand out: expression of contradictory concepts on the meaning of death; workers claiming to be in favor of donation, but who are unsure as to whether they will be donors; the enormous distress reported when they are with a donor’s family; lack of recognition in the donation and transplantation process, and service standardization; lack of support and structure necessary for process excellence; the attempt to self-preserve by trying not to expose their human vulnerabilities in the face of a donation and transplantation process13,14.

Brazil’s national organ transplant program, the most prominent public transplant program globally, has fair organ allocation logistics free of any social/cultural privilege. The National Transplant System (SNT) created by Law No. 9434/1997 is a central body of the Ministry of Health, whose organization and legislation were improved and regulated.

Thus, the system of donation, uptake, and transplantation of organs and tissues occurs in a standardized way in any part of the Brazilian territory to avoid any harm or irregularities. Therefore, similarity prevails throughout the system. The hospital studied is part of this structure, taking on the role of a transplanting hospital and a supplier of organs and tissues. The CIHDOTTs are committees within hospitals responsible for the active search for potential donors and the organization of the entire donation and fundraising process in the intra-hospital environment15,16.

In this context, the motivation for this research was the concern with the mental health of workers involved in donating organs and tissues for transplants. How is work at CIHDOTT organized? Is there mental strain among these workers?

**Methods**

This exploratory, qualitative research was conducted in a Tertiary Public Hospital in the Triângulo Mineiro region, Minas Gerais, Brazil, with workers from the CIHDOTT, a multidisciplinary team18,19.

The work procedure was divided into three steps to obtain the material to be examined: 1) bibliographic survey: carried out from 2006 to 2017 in the SciELO, LILACS, MEDLINE, CAPES Portal, USP Theses, and Dissertations databases, with the following descriptors combined: psychological stress; mental strain; distress; mental health; occupational health; professional exhaustion; healthcare professional; procurement of tissues and organs; workload; transplants; brain death; directed tissue donation; organ/tissue transplantation; death. We identified five books, five theses, 11 dissertations, and 54 papers, from which we selected five books, two theses, three dissertations, and 11 papers, as they met the inclusion criteria according to the research objectives; 2) participant observation: ‘descriptive observation’19 carried out in the workplace, using the field record (daily) as an instrument, especially on the environment, work process, and conditions, to make an approximation with the production process of these workers; and 3) application of a social questionnaire and semi-structured individual interview.

Following Resolution Nº 466/2012/CNS, which regulates human research, the proposal was sent to the Research Ethics Committee, and the subjects were only observed and interviewed after the project had been approved by the CEP and participants signed the Informed Consent Term.

The material selected for the study was submitted to thematic content analysis operationalized in three stages: 1) pre-analysis: we raised the initial hypothesis that how the CIHDOTT work process is organized leads to mental exhaustion of workers, and we established four thematic axes: working hours; work conditions, organization, and process; interpersonal relationship; distress and pleasure at work; 2) material exploration: reading in dialogue with theory, elaborating essays by themes; 3) processing the results: the themes
written were referred to the research objectives and initial hypothesis, through interpretive analysis and referred to the theoretical category of mental exhaustion and placed in dialogue with Occupational Health, WRMH, and Sociology authors.

Results and discussion

The sample selected for this research consisted of females aged 29-39 years, with more than five years of health experience with training in nursing, social assistance, and medicine, considering that the studied CIHDOTT is a multidisciplinary team composed of these professional categories.

Working hours

The analysis of CIHDOTT’s working hours identified remunerated extra shifts, both with physical presence and home office modes, for periods in which the sector is unable to cover with the working hours; attend to the schedule when it was impossible to cover with shifts, without remuneration, to ensure sector operations; use of private means (own telephone) to keep the service running, a current work characteristic that invades the worker’s personal life, extending the working hours, in which the worker continues to be part of the process voluntarily in home office mode, in uncovered schedule periods, also without remuneration; work on different shifts by the same worker, one of substandard work forms, found in the CIHDOTT, which leads to worker’s overload and poor health.

*I can’t switch myself off. Since I joined CIHDOTT, I wake up and sleep with my cell phone on [...] because I always imagine that something might happen (Camille). If you address a family at the end of your shift, you have to continue the entire process [...] it usually exceeds working hours. It is common (Valeria).

We can observe that the “social role” of the donation ends up imposing a burden on workers, who know that if they do not stay at work beyond their hours, the donation will not be carried out and feel that they will need to double-up efforts to achieve their goal, which is to save lives:

*If I was working three times a week in the afternoon, I didn’t schedule anything anymore in those three days. I was available. [...] I had to prepare myself this way, [...] always that burden of responsibility, like: if I can’t, there won’t be a donation. [...] I can’t be absent. I can’t get sick (Rogéria).

Seligmann-Silva21,22 shows that work has a temporal structure with different aspects: working hours, distribution into day and night periods, and the organization of shifts; time-off distribution; breaks; flexibility or strict prescription of rhythms. The author emphasizes that research relates to global weariness situations expressed in premature aging, such as shift work, as observed in our research, in which workers work both day and night, corresponding to 7-year additional aging in a lifetime under this regimen. In night work, Rosa et al.23 argue that the adverse effects of sleep restriction can generate fatigue, reduced motor and cognitive performance, and altered metabolic, hormonal, and immunological activities. Thus, workers who extend their working hours without rest between shifts show a declining performance at certain times of the day or night, representing a risk of work accidents that can lead to errors in work processes.

Furthermore, during the COVID-19 pandemic, workers continued under the same regime. In other words, they are not working remotely, considering that the activities developed in the CIHDOTT are essential services. Moronte24 describes this group as “Workers in Times of War”, as they cannot remain secluded in their homes to protect their health, exposing themselves to dangerous situations and sometimes working in unsafe conditions. The need for occupational exposure causes fear and insecurity, and maintaining these conditions leads to exhaustion, with conditions that can generate distress and illness. This exhaustion can advance towards continuous distress that becomes part of daily life, which can lead to a reckless state of “distressed normality”9 that can trigger work-related mental disorders.

Gaulejac25 affirms that management becomes a “technology of power, between capital and labor” (p. 27) exercised by the ideal of quality achieved through excellence, commitment, success, performance, and progress. The objective is to get employees to adhere to the company (in this case, a hospital), whose principle that production cannot stop (24 hours – CIHDOTT) overcomes the needs and human condition boundaries of these workers, leading to prolonged working hours, accelerated pace and increased pressure and responsibilities, which can evolve to work overload and mental strain.

Work conditions, organization, and process

CIHDOTT’s work process is organized into three workflows: 1) donation in cases of death
with arrested heart; 2) donation in cases of brain death; and 3) administrative tasks, besides other activities such as training on the subject of donation and brain death protocol promoted to most sectors of the hospital during the year. The first flow occurs in five stages: active search for potential donors, death notification, donor validation, family interview, and corneal donation. Parallel to the work process related to the corneal donation flow is the process related to the flow of donation of multiple organs and tissues, which are of brain death cases and occurs in seven stages: active search for potential donors; identification of the potential donor; brain death protocol; donor validation; family interview; multiple organs and tissue donation; and body capture and release to the family. The workers considered the family interview as an extremely tense stage of the work process.

The division and operationalization of tasks, particularly the discrepancy between the prescribed work (task) and the actual work (activity performed), show the experience of precariousness, one of the effects of neoliberalism on workers’ health, experienced as mental exhaustion and corroded subjectivity. Current studies show that neoliberalism is a global normative logic. This system has expanded its influence globally, extending the logic of capital to all social relationships and spheres of life. It is established by forces and powers that support each other at the national and international level, forming a coalition that plays a political role on a global scale and defines new subjectivation modes. In this sense, it is not reduced to an economic system or to practices that define contemporary capitalism in its globalized characteristic, but a way of life that as such comprises a grammar of recognition and a policy for suffering so that one can extract more production and more enjoyment from their distress.

The analysis of the conditions, organization, and work process of the CIHDOTT team showed that the worker is exposed to the following health hazards:

1) biomechanical: prolonged standing, long distance covered, adoption of inappropriate postures, which can cause pain, back problems, and physical injuries;
2) accidents: falls from own height and stairs, which can lead to bodily injuries;
3) biological: viruses, bacteria, parasites, protozoa, fungi, and bacilli typical of the hospital environment, and transporting the organ or tissue for transplantation, which can generate infectious-contagious diseases;
4) mental health-related: derived from the organization of work such as excessive working hours (especially unpaid extra shifts, mainly in the distance mode, which exploit workers and invade their private lives) and inadequate staff sizing, which interfere in the work process, particularly, in the operational mode of tasks, affecting the rhythm and workload and generating overload and pressure. Also, we highlight the conflicting daily life related to the life-death axiom, especially in interpersonal relationships with families and experiencing situations that generate fear and permanent alertness. This problem and the daily constraints and humiliating situations in the relationships with the teams inside and outside the hospital, the flaws in the donation logistics, such as the lack of physical and material structure, can cause psychological distress, irritability, anxiety, anguish, guilt, feeling of helplessness, insomnia, fatigue, behavioral changes, and mental disorders. This picture characterizes the process of workers’ wear, in particular, mental strain.

**Interpersonal relationship**

A good relationship in the team is linked to the joint work objective: making a donation and helping people. Companionship and affection, an illustration of cooperation was shown, according to Dejours, a form of subjective mobilization that arises from the collective will of individuals to work together and jointly overcome the contradictions that arise from the essence of the organization of work and that do not work without structured trust relationships by respecting the work rules, assuming a technical and social commitment: cooperating and living together are inseparable.

The respondents reported that one must have an adequate profile to work at CIHDOTT, in which the worker is sensitive, empathetic, willing to be involved in the process, and who likes the outcome, which is transplant completion. They also reported the need to be constantly available, “constantly committed to work”, as natural, which reveals the power and managerial ideology in these relationships. Being always available becomes an intrinsic feature of the organ and tissue transplant worker. It is the ‘freely consented submission’ pointed out by Gaulejac, moving from body control to psychic mobilization at the company’s service, in this case, the hospital.

The interpersonal relationship of the CIHDOTT team with the other hospital sectors is not so good. Some sectors articulate well while
others do not. Some hinder the progress of the work process because they do not understand or do not know the current donation process and, thus, do not realize its importance to the institution and society, besides professionals averse to donation. Notwithstanding this, the team seeks to relate harmoniously with all hospital sectors.

Several difficulties are found regarding the interpersonal relationship with the external team, the Organ Procurement Organization (OPO): delay in the supply of organs, change of logistics without timely reporting, lack of support for actions and standardized conduct, and the primary obstacle, which is that the OPO does not work on a 24/7 scale, contrary to Ordinance No 2600/200916.

In order to improve CIHDOTT’s relationship with the hospital sectors and the OPO, we propose adopting an “Organ and tissue donation policy” to standardize actions related to the donation process to prevent the interference of personal opinions such as ‘being against organ donation’.

## Distress and pleasure at work

The constant contact with the sick, injured, seriously injured, and dead people imposes on the health worker some activities that cover pleasant or not so pleasant tasks, which require a constant routine of adjustments and adaptations of defensive strategies for the performance of their tasks that generate anguish, suffering, pain, and sadness29,30 when dealing with death. We should recall that, according to Dejours31, defensive strategies are collectively constructed and organized; they operate as ‘work rules’ and appear as a protection for workers when the organization of work comes into conflict with the psychic functioning of these subjects, preventing the emergence of pathogenic distress.

Such a situation reveals the human condition of finitude, of the psyche’s helplessness in the face of increasing drive flow, which, sometimes, the subject cannot address, and a traumatic situation, a psychopathological state may be installed. When in the presence of death, the workers’ discourse reveals the feeling of helplessness, around which the fates suffered by the drive flow gravitate, in the context of the inevitable game of forces between cultural demands and drive renunciation, such as loneliness, impotence, discouragement, loss, threats to bodily integrity, characterizing expressions of malaise in the field of work7,32,33.

According to research32,33, the family interview is one of the most complex steps in the donation process and involves ethical, legal, and emotional aspects. Each family has its values and beliefs, and, therefore, no specific script is available. The worker must be prepared to clarify doubts and face different situations and feelings, and this is one of the most stressful moments detected in the organization of the work process as a source of distress for the CIHDOTT members. The place to interview the family was essential, revealing the subjective aspect of this space that interferes with the reception and approach of the family because it generates anxious expectation when seen as inappropriate by the worker, emerging as a mental strain factor.

The uncertainty of the family’s decision also causes distress. The possibility of donation is a family right guaranteed by the donation team. On the one hand, the cheering for the “yes” for the authorization and acceptance of multiple organs and tissues donation. On the other hand, the possibility of the family’s “no”, which leads to the workers’ frustration with the non-donation, is sometimes experienced as a failure to fulfill their tasks, generating anxiety, sadness, guilt, and impotence:

> It’s already so difficult to have a donor [...] and then when I have one, I lose him? I try hard to do whatever is in my power to achieve it [...] Furthermore, I exert this pressure on myself. Then I experience anxiety once more [...] Was I able to show my empathy to the family? [...] I think we are anxious for the yes, the donation (Rogéria).

A bond with the family is established during the family interview, a commitment regarding the time to release the body, or even regarding the use of donated organs. However, the possible complications during the logistics of organ distribution can delay the start of body uptake and release to the family, which ends up increasing the waiting time and the donor family’s anxiety, and, consequently, the anxious expectation of the donation team, which carries the responsibility of completing this process so as not to disappoint this family.

Other situations related to the organization and the work process were the distressing and sometimes humiliating experiences for the workers: concern about the availability of exams to complete the brain death protocol; insufficient available structure and functions not agreed upon in the institution that end up being carried out as a “favor” to conclude the process; lack of commitment from professionals; and the hospital workers’ lack of knowledge of the process.
Some distress experiences can also result from working overtime, which invades the private life of workers who relinquish their personal life to monitor donation processes outside working hours, night shifts without coverage so as not to lose a donation. This setting illustrates current work flexibilization as a basis for illness [4,5,25,34].

We have to rely on the understanding of the husband, children, and sometimes even commemorative dates [...] we abandon our family in favor of being here helping others, with this objective (Valeria).

As Dejours emphasizes, the psyche is not directly affected; first, the worker’s body, disciplined and docile, is victimized, given over to the difficulties inherent to work activities. An amorphous, defenseless, exploited, weakened body lacking its protective contour is created: the psyche. The author argues that labor relationships in organizations dispossess workers of their subjectivity, excluding the subject, which makes men the victims of their work. The CIHDOTT workers complain of general tiredness, exhaustion, nervous tension. They cannot ‘disengage’ from work, which in the context of the material selected for analysis configures functional wear, related to variations in malaise such as fatigue:

Exhaustion for me is being very tired. I feel mentally fatigued [...] for example: this capture has to end soon so I can relax [...] and think about other things. Because at that moment, my mind was thinking all the time like a broken record. It comes and goes, [...] I’ve already done that. I’ve talked to the doctors and with the teams involved [...]. There are many details that, because of one thing, the whole process can go wrong, [...] like, please end soon because I need to rest my head (Rogéria).

When tiredness accumulates over time, it does not end with daily sleep, which causes sleep pattern changes, irritability, discouragement, several pains, appetite loss, affecting mood and sociability, leading to “chronic fatigue” or “pathological fatigue”, as emphasized by Seligmann-Silva[22]. However, in order to eliminate or minimize mental strain factors, if there is no work replanning, workers may have pathological fatigue and this situation can lead to “psychic wear, understood as deformation”, in sayings by Seligmann-Silva, in which identity will be increasingly affected (according to the concept of ‘identity in process’ by Peter Berger and Thomas Luckmann) by an attack on the dignity and ‘the corrosion of character’ (conception by Richard Sennett), and the shaking of ‘psychosomatic economics’ (Pierre Marty’s notion), leading to the subjectivity’s wear, the third level of mental strain.

Despite the experiences of displeasure and distress, they feel pleasure, joy, happiness, and gratitude, considering that CIHDOTT’s work makes sense, they like what they do. Work is the end achieved, resulting from much studying, professional training, and a life of self-denial. There is an affective connection with work, which makes it a source of drive satisfaction, sublimation, a higher drive destination, and fundamental to mental health, as Freud warned us[33]. In this sense, the importance of work is highlighted as an instrument that men have created to address their helplessness and live in society[7,22,33].

Motivation is the result of our work. It is knowing about the people who will benefit from it, receive organs, and have a quality of life. That’s the main motivation. And I like what I do (Valéria).

Pleasure and satisfaction at work are experienced when a family is received and guided with a successful donation. Therefore, it is about participating and being part of a process that has changed or will change a person’s life, and thus, there will be some contribution to society. The result of the donation process, the transplant, is what most motivates the team. Thus, the workers experience recognition, which transforms work distress into pleasure and fulfillment, besides being fundamental for constructing the identity and cooperation.

The above results are corroborated by the evidence by Lima et al[14] that workers dealing with organ donation realize that their work is highly dignified since they are doing good to others, promoting life. The authors believe that workers feel essential in this process, as they provide the donor with a dignified death, and for the family, information and comfort, besides being able to collaborate with society.

Final considerations

The analysis of the organization and work process at CIHDOTT showed that the worker is exposed to risks of biomechanical and biological accidents and mental health risks, which characterizes the process of workers’ strain, in particular, functional wear – fatigue, confirming our hypothesis that the way the work process of CIHDOTT is organized leads to mental strain – considering that the system of donation, capture, and transplantation of organs and tissues occurs in a standardized way in the Brazilian territory. The entire work process described in the CIHDOTT of the hospital studied is
similar to the rest of the country. Thus, this study outlines a pattern of wear, collaborating with the prevention of risks of health problems for workers in this category, reestablishing health promotion and protection, in particular, mental health.

In the face of all the problems presented, it is necessary to reorganize the work process at CIHDOTT to eliminate or minimize the risks of injuries arising from the work conditions, organization, and process. Work replanning improves the worker’s health conditions and the entire quality of the process and the final product.

Among the suggested replanning proposals are adequate staff sizing for full-time work, with the expansion of the sector’s staff, and hiring an administrative assistant to solve administrative issues; the construction of a flow of notification of hospital deaths to CIHDOTT, avoiding continuous active search; availability of complementary exams for diagnosing brain death daily; real-time communication between teams (external and CIHDOTT); streamline the supply of organs and prepare the necessary funding logistics; establish monthly CIHDOTT meetings to discuss worked cases, detect critical points, and even identify signs of illness among workers.

The results of this research come to arouse the urgent need for government agencies to establish Occupational Health strategies in order to provide the teams involved in the entire process of donation, capture, and transplantation of organs and tissues, with more adequate conditions in the face of this reality they routinely experience: death and life. In current times of a persistent global trend towards structural work precariousness, outsourcing, and flexibilization as the basis of illness, how can we recover our emancipation, in the Habermasian sense?
Collaborations

The two authors participated in the work design, data analysis and interpretation, paper writing, and the discussion of results and final considerations.

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