Possible risk factors involved in psychological and emotional stress and depression among forensic medicine workers

Possíveis fatores de risco que influenciam no estresse psíquico-emocional e depressão de profissionais envolvidos na prática da medicina legal

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ABSTRACT | Introduction: Different forms of rationalization are introduced through work, which result from economic, political, and social changes that increase the need for labor force. Within this context, there are institutions that neglect the effects of poor work environments on workers’ health, such as the development of work-related mental and psychological disorders. Objectives: To understand what it means to work as an official expert at a forensic medicine institute and investigate occupational and workplace factors that may contribute to emotional and psychological stress and/or depression. Methods: We conducted an exploratory, qualitative study at a forensic medicine institute of a Brazilian capital city. Data were collected using semi-structured interviews with study participants, which were selected according to inclusion and exclusion criteria. Results: Occupational factors, including physical organization and psychological demand, may generate or contribute to the development of psychological and emotional stress and/or depression in forensic medicine workers. Working conditions are related to the quality and quantitative performance of the worker and influence whether worker productivity meets the demands of those using the services provided by the institute. Conclusions: This study revealed the reality of those working at a forensic medicine institute and identified possible factors that may cause emotional instability, psychological and emotional stress, and/or depression. We identified the need for changes in the workplace and the creation of social policies focused on mental health to minimize occupational illness. Keywords | forensic medicine; depression; mental disorders; ergonomics.

RESUMO | Introdução: Através do trabalho, são introduzidas diferentes formas de racionalização, resultantes de mudanças econômicas, políticas e sociais que intensificam a necessidade de mão de obra. Nesse contexto, surgem instituições que ignoram os efeitos da má qualidade de serviço sobre a saúde do trabalhador, como o desenvolvimento de distúrbios mentais e psicológicos causados pelo ambiente de trabalho. Objetivos: Compreender o significado de atuar como perito oficial em um instituto médico-legal, investigar os fatores laborais e analisar a forma organizativa do ambiente que possam ser geradores ou concorrentes ao estresse psíquico-emocional e/ou depressão. Métodos: Foi realizada uma pesquisa exploratória com abordagem qualitativa em um instituto médico-legal de uma capital brasileira. Os dados foram levantados por entrevistas semiestruturadas aos profissionais selecionados a partir dos critérios de inclusão e exclusão. Resultados: Fatores laborais, incluindo a organização física e os de demanda psicológica, podem gerar ou concorrer para o desenvolvimento do estresse psíquico-emocional e/ou depressão em profissionais atuantes na medicina legal. As condições ambientais são relacionadas à qualidade e ao desempenho quantitativo do profissional, gerando produtividade em tempo hábil à população usuária do instituto. Conclusões: A pesquisa possibilitou conhecer a realidade dos profissionais atuantes nos setores de um instituto médico-legal, elencar possíveis fatores capazes de causar instabilidade emocional, estresse psíquico-emocional e/ou depressão e indicar a necessidade de um redirecionamento da estrutura e da criação de políticas sociais e de cunho psicológico para minimizar o adoecimento profissional. Palavras-chave | medicina legal; depressão; transtorno mental; ergonomia.
INTRODUCTION

Work is considered an agent of transformation that provides means for people’s survival and fulfillment. Different types of rationalization are introduced through work, resulting from economic, political, and social changes that increase the need for labor force. Within this context, there are institutions that ignore the effects of poor working conditions on workers’ health, resulting in the so-called “sick workplace syndrome.” These institutions are intertwined with Brazilian government services. Within the organizational field of the public sector, there is a difficulty in coordinating work quality with the workplace, the physical and psychological conditions of the workers, and the recognition of their position before society. In this setting, the experience of workers dealing with unhealthy working conditions are investigated, such as forensic experts, dentists, and assistants.

When faced with conflicting situations, workers may develop psychological and mental disorders triggered by the workplace. Occupational stress in particular may be directly caused by daily work activities and impact productivity, job satisfaction, and health, triggering symptoms of behavioral and mental disorders.

This study aimed to discuss the working conditions experienced by forensic experts at a forensic medicine institute (FMI) in a Brazilian capital city and associate them with possible behavioral and mental health outcomes. To this end, we aimed to understand the structural organization of the FMI as a public body and the implication and association of daily work activities as possible triggers for psychological and emotional disorders and depression.

METHODS

This qualitative, cross-sectional study was conducted at an FMI in a city in the state of Paraná, Brazil, more specifically at the pathology and necropsy laboratory departments. It should be noted that the study site was in the process of moving and the data collection period occurred 6 months after the workers had moved from another building. The study was conducted in the second half of 2018 and was approved by an ethics committee (consolidated opinion no. 2.453.329).

Data were collected using semi-structured and audio-recorded interviews with medical examiners, forensic dentists, and autopsy assistants. The research instrument consisted of semi-open questions, which allowed participants to express themselves freely. To preserve anonymity, the participants were identified by codes (D1, D2...D14). Data collection was conducted in the workplace, in a private room, to avoid external interference from the environment or other people and to prioritize participant’s privacy and comfort.

The information obtained underwent thematic content analysis, as proposed by Minayo, in which the study follows a cycle based on three phases: 1) “exploratory phase,” in which the study objective, methodology, and project are more thoroughly developed; “field research,” which consists of collecting information on the theory under investigation; and “data processing”, in which the data are organized, classified, and analyzed by inference and interpretation.

RESULTS

The final survey was conducted with FMI employees using a questionnaire with sociodemographic data, followed by the research questions. The study sample consisted of 14 forensic experts, which accounted for all forensic experts in the FMI.

Most workers (57%) were aged > 50 years; 9 (65%) were male; 5 (36%) had a weekly workload of 20 hours; and 11 (79%) had been working at the FMI for 20-30 years. Regarding level of education, all participants had completed higher education. The second stage of content analysis consisted of analyzing the information collected and grouping it into categories to elucidate the research question.

CATEGORY 1 - WHAT IT MEANS TO WORK AS A FORENSIC EXPERT

Based on the interviews, participants think their job is of great importance, relevance, and responsibility for crime solving, as they search for evidence and facts
that may implicate or incriminate someone. They also reported that the job is not light nor clean, given that it requires attention, dedication, and a sense of justice when using professional rigor to search for evidence during examinations. The responsibility for the full extent of the work conducted in the FMI and its consequences was also highlighted.

CATEGORY 2 – PERCEPTIONS OF WORK RELATIONSHIPS AND WORK ENVIRONMENT

In this category, participants compared the physical structure of the former building, where they worked until the second half of 2017, with the new building, where they started working in the first half of 2018. They mentioned the importance of an adequate physical structure for the performance of their function. Even though work continues to be unhealthy, the current workplace has lower risks of contamination.

The previous workplace exposed workers to unhealthy conditions, such as organic material accumulating in floor cracks and proliferation of insects and other urban pests (e.g., rats, cockroaches, and scorpions), which further highlights the precarious structure of the previous workplace. The lack of basic supplies for conducting examinations was also mentioned, such as protective equipment when examining a body and a working radioscopy machine, as well as inadequate furniture and ergonomic equipment for filling reports and handling and moving bodies during autopsies.

In the cold room, I would have to remove 80 bodies, one from the top of the other, without body bags or something else separating each body. The machine would break down and stop refrigerating. There was no equipment to help, I had to do everything by myself. I had to throw my clothes away and take three or four showers before going home. This is the type of thing I would like to forget. (D12)

In the FMI, occupational activities are conducted in teams, and each worker plays a fundamental role in the development of forensic work. According to some employees, these relationships are built within a network that can complement the activities developed in different sectors in favor of social work for the population.

However, there were reports of disagreements between forensic assistants and medical examiners who work in the FMI or those who work in other places and request referral of a body to the FMI. Forensic assistants believe this issue is associated with medical training in medical schools and attempts of referring bodies to the FMI whose cause of death does not require inquiry or forensic investigation.

Employees associate these situations with feelings of anxiety and somatization that are triggered before their shifts due to their emotional state and the difficulty of communicating with some colleagues.

I worked with someone who mistreated everyone during shifts. It got to a point that, the day before my shift, I would have diarrhea, nausea, and headaches. It was terrifying. I would start crying. (D4)

My doctor requested a leave of absence from the morgue several times, but it was always denied, until I took matters into my own hands. I had access to knives, axes, and saws and, one day, I threatened the medical examiner. I had reached my breaking point. I was removed from my duties. I currently work as a driver and have been on psychiatric treatment for 12 years. (D10)

Conversely, participants claim that the work environment is shaped according to professional conduct, such as productivity, psychological state, and behavioral influences. Finally, working under unhealthy conditions is considered stressful because, in addition to risks of contamination, workers have to deal with death, the family members of those who died, and the police.

CATEGORY 3 – OCCUPATIONAL FACTORS ASSOCIATED WITH PSYCHOLOGICAL AND EMOTIONAL CONSEQUENCES AND DEPRESSION

Despite being in a new physical environment, workers reported issues that are inherent to the working conditions of the previous building, which provoke
different feelings. Regarding the workplace, there are gaps in relation to the well-being of workers, such as the use of obsolete and inappropriate equipment in the morgue and a lack of essential items, such as a decontamination room and appropriate clothing for activities outside the FMI.

Worker shortage is considered one of the biggest problems among participants, who feel overworked. Consequently, basic needs such as eating and adhering to the recommended sleeping hours are neglected. Thus, other activities that are essential to the FMI, such as those of academic, scientific, and legal nature, are not developed due to the excessive workload.

Some jobs that are no longer a part of the FMI, such as social work, are considered indispensable. According to participants, social work is essential for body identification and to obtain social information and reports from family members. It has been mentioned as a gap in the service:

The burial of unidentified bodies increased by approximately 10% after social work was excluded from the FMI. Which means three more bodies per month that are not identified. It may not seem like much, but when you consider that there are three desperate mothers, fathers, or siblings looking for their loved ones, it is a lot. (D1)

As a result, work overload was mentioned as responsible for worker shortage due to health reasons and changes in work and personal life. These changes were considered essential to prevent the development of psychiatric disorders:

Due to the lack of employees, I have had to work 72 hours straight. I felt my personality was changing; I was getting more aggressive and impatient. I lost 24 pounds in 1 month. I sought psychological help and started working again. I realized the issue was excessive working hours. (D12)

The own nature of forensic medicine is considered a significant source of frustration for employees. Because it is associated with Law, forensic medicine is not as involved with the cure of patients as traditional medicine. This type of work, which is related to different types of violence, creates a sad and aggressive work environment, given that death and the harm that was caused cannot be prevented, especially in more vulnerable populations. Participants also stated that they try not to get emotionally involved with the stories told by victims or their family members when writing technical reports. However, considering that these stories are essential to understanding the case and making proper judgments, this is not always possible.

In this sense, participants noticed behavioral changes regarding several situations witnessed at work, such as the death of a young man close to a relative’s age and the amputation of a limb due to an accident. As a result, many employees cannot separate their professional life from their personal life and develop feelings of excessive caution to prevent similar events from happening in their lives:

I have felt depressed having to deal with the death of teenagers close to my son’s age. To see a dead body very similar to a loved one and cry. I had to hide so no one would see me crying. I have dealt with this silently my whole life. I have worked here for 25 years, and no one has ever cared about how we feel. (D1)

I get very distressed when dealing with children because I see my own children in them. Abuse, death, neglect. When I come home and see my children playing, I know that another mother was not so lucky. It was extremely overwhelming. (D9)

Dilemmas related to work ethics were also highlighted regarding the acceptance of death by family members of the victims. Acceptance of death, lack of bureaucratic clarity, and working in dangerous places are situations that require workers to act beyond their technical training. Although the instinct to help is natural, these situations may affect their psychological state:

You arrive at the scene and the family is crying and won’t let you remove the body. You have to hug and console them so they will let you remove the body.
We have to psychologically bond with them before removing the body. (D2)

I would respond to incidents in dangerous locations and, while I was there, the police were exchanging shots with the criminals. It was extremely stressful. (D2)

The media were mentioned as a channel through which people judge the reports from forensic medical examination, morgue, and pathology department. Society and the media expect the medical examiner to achieve the same conclusions as the preliminary reports, even if it goes against the forensic evidence of who committed the crime. As a result, medical examiners believe that the FMI should release a statement for the media and law enforcement supporting the workers, medical reports, and victims.

I have felt threatened by superiors who did not agree with my report. But the biggest pressure is from the media. When the report is not in accordance with what the media or society expect, we are immediately judged as if we are doing something illegal. It is very emotionally draining. (D5)

I think the FMI should stand its ground. We get a lot of requests from judges, prosecutors, and police officers that are not related to our forensic work. And if we refuse, they may charge us with obstruction. (D5)

When considering the responsibilities that come with the job, participants reported the development of emotional and psychic disorders, as well as depression, associated with daily adversities and a lack of clinical support:

I have been treating anxiety for the 25 years that I have worked here, as well as depression at three different times. All episodes were considered work-related. With psychiatric treatment and psychotherapy, I have managed to overcome it. (D5)

Thus, medical and psychological support for forensic workers is considered extremely important and essential to guarantee psychological and emotional well-being. Participants argued that an expert who spends time and is familiar with the workplace should be available during working hours and should conduct periodic evaluations:

There is no psychological support. They should conduct frequent evaluations and provide treatment. The nature of this work is very ungrateful. (D5)

Monitoring by a health professional who interviews workers and can notice depressive symptoms, the anguish we face by dealing with the horrors of our job, is essential. (D1)

DISCUSSION

Workplace safety is essential for the well-being and health of the working population, given that appropriate ergonomic measures, such as safety and cleanliness, promote higher rates of productivity and economic development. Providing workplace safety results in positive behavioral mechanisms, such as valuing the worker’s role in the company and promoting feelings of social responsibility and harmony.

In the setting of forensic institutes, working with human suffering and death is considered a challenge for health care workers, who are trained to prevent these processes and cure patients. Most medical schools use a biomedical teaching model that does not address the psychosocial aspects of the profession.

Frequent contact with stiff bodies marked by social experiences may be overwhelming for these workers, who may experience feelings of indignation. In addition, similarities to certain family members are often identified, such as age, physiognomy, occupation, or hobbies, making the workers further project their feelings on the fateful events. Consequently, questions are raised about the ethical and religious values of the purpose of life and human beings.
Forensic workers recognize their proximity to death once they are faced with the finitude of human life. Thus, we should consider the psychological pressure these workers endure by being emotionally and psychologically involved with their daily work. Ethical dilemmas related to personal experiences generate conflicts between values and beliefs that differ according to family structure, religious beliefs, and acceptance of death. In this context, suffering is a trigger for stress and psychological and emotional disorders that lead to absence from work, burnout, and psychiatric diseases, thus mental health care is essential.

The process of illness may occur due to a dissociation in the person’s own perception of identity as a worker and to pressures originating from workplace organization. In this case, suffering is related to a rigid structure of the work process that prevents psychic discharge, causing physical and mental illness.

Work-related mental and behavioral disorders are clinical conditions determined by the characteristics of the work environment or the tasks performed that promote the process of illness. They are also characterized by changes in thoughts, emotions, and psychic functioning, which can affect the person, the family, and the community. Thus, these disorders have a multifactorial origin and may be linked to different individual or social aspects.

Mood disorders are common, with depressive disorders being the most prevalent. Depression is one of the leading causes of disability in the world. Approximately 450 million people suffer from some form of mental or behavioral disorder, and 25% of the population will suffer from a disorder at some point in life. In this setting, psychosocial intervention is essential to meet the psychological demands of workers. Considering the sadness, pain, and loss to which morgue workers are exposed, the presence of psychological support is necessary to reduce these feelings.

Evaluating the work environment in important to identify possible risk factors. These demands include physical aspects, such as furniture, lighting, temperature, noise and vibrations, and monotonous and repetitive tasks, as well as cognitive aspects, such as memory, attention, affective relationships, motivation and professional satisfaction, fast-paced work, excessive hours, and no breaks. Workers are forced to adapt to these reversible factors to ensure the quality and productivity required by their job, which may make them ill.

In this sense, spaces for interprofessional communication where workers can share hardships and make suggestions that could improve the workplace should be provided in addition to psychological support. The creation of awareness groups and groups for sharing experiences is thus essential for the development of new ideas, instruments, and guidelines for support in daily routine. This would allow the development of support strategies that meet the psychological and physical demands of the job.

**CONCLUSIONS**

This study revealed the reality of those working at an FMI and identified factors that may cause emotional instability. Some factors are considered inherent to forensic medicine, such as vulnerability, violent deaths, and internal conflicts, and others include the influence of the media and law enforcement on forensic reports. Thus, the presence of risk factors for mental disorders indicates the need to change workplace organization and create social policies focused on mental health to minimize illness and ensure occupational well-being.

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**Author contributions**

KMG and AMG were responsible for study conceptualization, data curation, formal analysis, investigation, methodology, project administration, visualization, and writing – original draft. FMP was responsible for study conceptualization, data curation, formal analysis, methodology, supervision, validation, and writing – review & editing. RMMG was responsible for investigation, resources, and writing – review & editing. AASGN was responsible for study conceptualization, formal analysis, resources, and writing – review & editing. MRRCS was responsible for validation, resources, and writing – review & editing. All authors have read and approved the final version submitted and take public responsibility for all aspects of the work.
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