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BURNOUT IN THE : CAUSES, IMPACTS AND INNOVATIVE APPROACHES TO PREVENTION AND TREATMENT

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Abstract: Burnout is a psychological condition characterized by emotional, physical, and mental exhaustion, with causes and risk factors varying across sectors. The research highlights the importance of multidimensional approaches, including the use of technologies like virtual reality and mobile apps, as well as in-person strategies like meditation and breathing exercises. Personalizing intervention programs and providing social support are key to managing burnout effectively. Psychological therapies such as CBT and ACT are effective, and physical activity also contributes to recovery. The implementation of organizational policies is crucial to prevent burnout and promote mental health.

Keywords: Burnout; workplace; treatment.

INTRODUCTION

Burnout is a psychological disorder characterized by emotional exhaustion, depersonalization and reduced personal fulfillment, with profound effects on the mental and physical health of the professionals who face it. Although the term was coined by Freudenberger in the 1970s, burnout has gained notoriety in recent decades, especially with the increase in work demands in various sectors (MASLACH; LEITER, 2016). Burnout syndrome not only affects the individual health of workers, but also compromises productivity and organizational well-being, representing a growing challenge for employers and human resources managers.

The definition of burnout has been widely discussed in the scientific literature and is understood as a gradual process of emotional, physical and psychological exhaustion due to excessive and prolonged stress at work (MASCCELLI et al., 2020). It is mainly characterized by emotional exhaustion, cynicism and a sense of ineffectiveness or incompetence at work. The impact of this condition is not just limited to the individual's exhaustion, but is reflected

in the dynamics of the environment, affecting interaction between colleagues and team performance (MASLACH et al., 2001). It is therefore crucial to understand the and factors that contribute to the development of burnout, as well as prevention and treatment strategies to mitigate its adverse effects.

Burnout is often associated with various risk factors that vary according to the sector. Among the main causes are adverse working conditions, such as high task demands, lack of control over work and the absence of adequate rewards (GUALDI et al., 2019). Sectors such as healthcare, education and construction have a higher prevalence of burnout, due to the constant pressure, emotional responsibility and high physical and mental workload. For example, healthcare professionals, especially doctors and nurses, are exposed to stressful working conditions, such as long working hours and emergency situations, contributes significantly to the development of burnout (LAI et al., 2024). In addition, individual factors such as personality traits, level of resilience and previous experiences of stress also play an important role in the development of this condition.

The impact of burnout on the mental and physical health of professionals has been widely documented. Studies show that burnout can lead to psychological disorders such as anxiety, depression and insomnia, as well as physical illnesses such as hypertension, cardiovascular disease and musculoskeletal problems (DAHLQUIST et al., 2020). Emotional exhaustion, a central feature of burnout, compromises the individual's ability to cope with daily demands, increasing the risk of serious illness in the long term. In , burnout can weaken the immune system, making professionals more vulnerable to infections (KOOPMANS et al., 2021). These effects damage not only individual health, but also impact the worker's ability to perform their duties properly, which results decreased efficiency and quality of work.

Burnout also has significant consequences for organizational performance. The presence of burnout in a team can lead to increased turnover higher absenteeism and lower productivity (MASLACH et al., 2001). Professionals affected by burnout often more likely to make mistakes, which can compromise the quality of services provided, especially in critical areas such as health and education. Organizations also face high costs associated with treating sick professionals and the need to recruit and train new employees (KRISTENSEN et al., 2022). Thus, the prevention and management of burnout are essential issues for the long-term sustainability organizations.

Faced with the growing impact of burnout, innovative approaches have been developed to mitigate its effects. Technology, in particular, has emerged as a useful tool in the management of occupational stress. Interventions such as the use of virtual reality integrated with biofeedback sensors have shown promising results in the treatment of burnout, providing an immersive approach to relaxation and emotional regulation (SMIRNOVA et al., 2024). In addition, mobile apps focused on improving mental health have been shown to be effective, especially among professionals facing high demands, such as junior doctors. These apps offer strategies to reduce stress, promote self-care and increase emotional resilience (LAI et al., 2024).

Although technological approaches are valuable, face-to-face strategies also play a key role in managing burnout. Techniques such as meditation and deep breathing have been widely applied in occupational intervention programs, with positive results in reducing stress levels and improving the quality of professional life (BHARDWAJ et al., 2023). These techniques not only promote relaxation, but also help restore emotional balance, allowing professionals to deal more effectively with the challenges of everyday life. In addition, social

and cultural support plays a crucial role in the effectiveness of interventions. Adapting strategies to the cultural and organizational needs of each work context increases adherence and the positive results of stress management practices (OKEREKE et al., 2023).

Another important aspect is the personalization of interventions. The management of burnout must be adapted to the specific work context of each professional group. For example, in high-pressure sectors such as emergency medicine, the implementation of personalized and contextually relevant tools can be particularly effective. App-based interventions that meet the needs of professionals from

These personalized approaches have been shown to be effective in reducing stress and improving general well-being (MONFRIES et al., 2023). These personalized approaches are fundamental to the success of interventions combat burnout.

Co-creating intervention programs with the workers themselves has also proven to be an effective strategy for dealing with burnout. Studies show that the active collaboration of workers in planning interventions increases the adherence and effectiveness of the programs (CEDSTRAND et al., 2022). This participatory approach strengthens the role of professionals, which contributes to building solutions that meet their needs more effectively.

Multidimensional approaches, such as mindfulness, have also stood out in the management of burnout. Programs that include mindfulness practices have shown benefits not only psychologically, but also physiologically, such as reducing stress levels and improving biological markers such as salivary immunoglobulin A (MARTÍNEZ-BOR RÁS et al., 2022). These practices are effective because they integrate physical and psychological aspects, allowing professionals to develop

emotional regulation and mindfulness skills. Mindfulness has proven to be a valuable approach for professionals in various fields, helping reduce stress and promote well-being.

In addition to psychological approaches and relaxation techniques, physical activity has also been identified as an important strategy for preventing and managing burnout. Studies show that structured physical activity programs in the workplace can significantly reduce stress levels and improve workers' quality of life (GINOUX et al., 2019). Regular exercise not only contributes to physical health, but also plays a crucial role in relieving stress, promoting mental well-being and preventing burnout.

Implementing organizational policies aimed preventing and managing burnout is essential for creating healthy work environments. Organizations that adopt wellbeing policies, offer psychological support and promote a culture of caring for employees show a lower incidence of burnout and greater job satisfaction (KRISTENSEN et al., 2022). These policies should include everything from the adoption of preventative practices, such as regular breaks and flexible working hours, to psychosocial support at critical moments.

Emotional support, especially through clinical supervision, is also fundamental in the management of burnout, especially in high-pressure professions, such as the health. Group clinical supervision has shown benefits by promoting a safe space for professionals to share their experiences and seek emotional support (CATLING et al., 2022). This strengthens the support network within the organization, as well as providing a space for continuous professional development.

Finally, burnout is a complex phenomenon, influenced by individual, organizational and social factors, which requires a comprehensive and integrated approach. Professionals in various fields, especially those exposed to

high levels of stress, face significant challenges that affect their health and performance. Effective interventions, whether technological, psychological or physical, must be adapted to the needs each work context and co-created with workers in order promote a healthier and more productive work environment. Coping burnout is therefore a strategic issue both for the individual health of professionals and for organizational success.

The aim of this paper is to analyze the phenomenon of burnout in the professional context, exploring its causes, risk factors, impacts on the mental and physical health of professionals, and the effectiveness of different prevention and treatment strategies, including technological approaches, psychological therapies and occupational interventions, aimed at improving well-being of workers and increasing organizational productivity.

METHODS

The search for scientific articles was out using the National Library of Medicine (PubMed) database. The descriptors were “*Burnout; workplace; treatment.*” using the Boolean operator “AND” between the respective words. The categories were: clinical trial and randomized clinical trial. The studies were selected from publications between 2014 and 2024, using articles in English and Portuguese as inclusion criteria. Exclusion criteria were articles that added other pathologies to the central theme, disconnected from the proposed subject. The academic papers were reviewed using the following steps, in the following order: defining the topic; establishing the study categories; proposing inclusion and exclusion criteria; checking and then analyzing the publications; organizing the information; and presenting the data.

RESULTS

By combining the descriptors used, a total of 1,475 papers were obtained from the PubMed database. Using the inclusion criterion: articles published in the last 10 years (2014-2024), resulted in a total of 899 articles. Next, clinical trials, randomized controlled trials or journal articles were added as inclusion criteria, giving a total of 50 articles. Articles in Portuguese or English were selected, resulting 48 articles and then the free full text option was added, totaling 28 articles. After reading the abstracts, those that did not fit the topic or were duplicated were excluded, totaling 20 articles, as shown in Figure 1.

DISCUSSION

The occurrence of burnout among professionals from various fields in the is a topic that has attracted the attention of researchers due to its implications for mental health and organizational performance. Recent studies highlight innovative approaches, such as the use of virtual reality technologies integrated with biofeedback sensors, which aim to mitigate the effects of work-related stress. This strategy has shown potential for improving emotional response in high-stress scenarios, as pointed out by SMIRNOVA et al. (2024), highlighting ReViSide as a promising intervention tackling burnout in employees.

In the field of health, specifically among junior doctors, mobile applications aimed at improving mental health have proven to be effective. A study conducted by LAI et al. (2024) showed that such tools not only reduce stress levels, but also promote self-care skills. This technological approach is particularly relevant in contexts where time is a scarce resource, enabling quick and effective access evidence-based interventions.

In addition to digital solutions, face-to-face programs have also had a positive impact. The use of meditation and breathing techni-

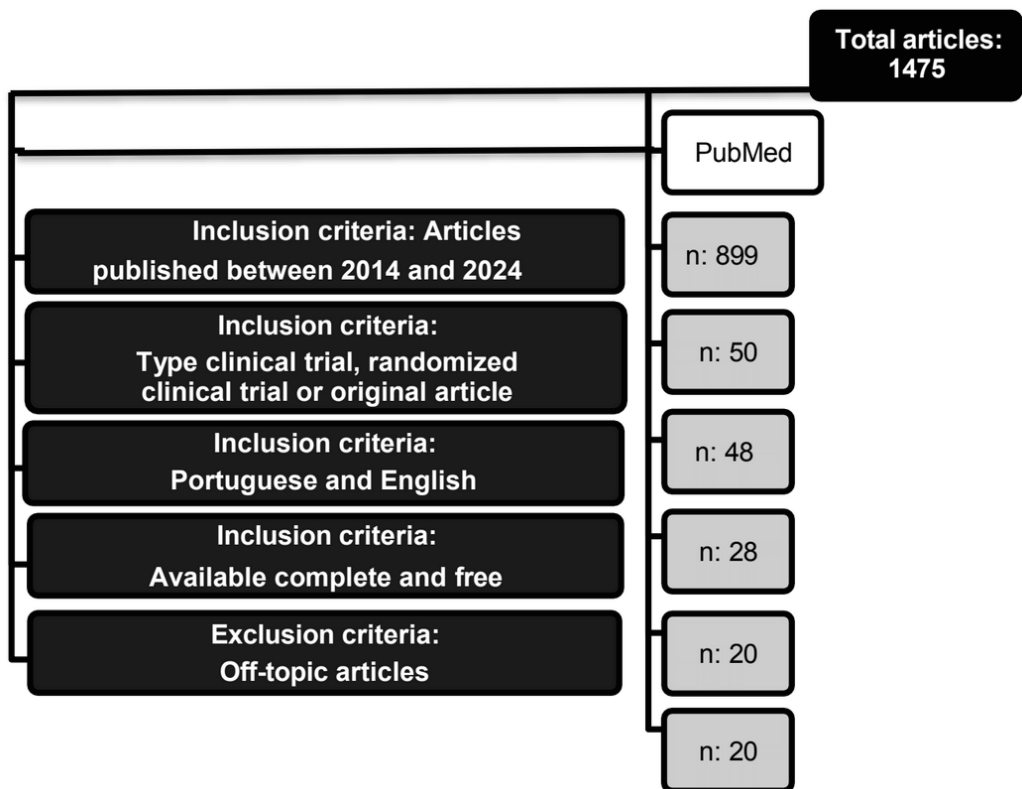


FIGURE 1: Flowchart for identifying articles in PubMed.

Source: Authors (2024)

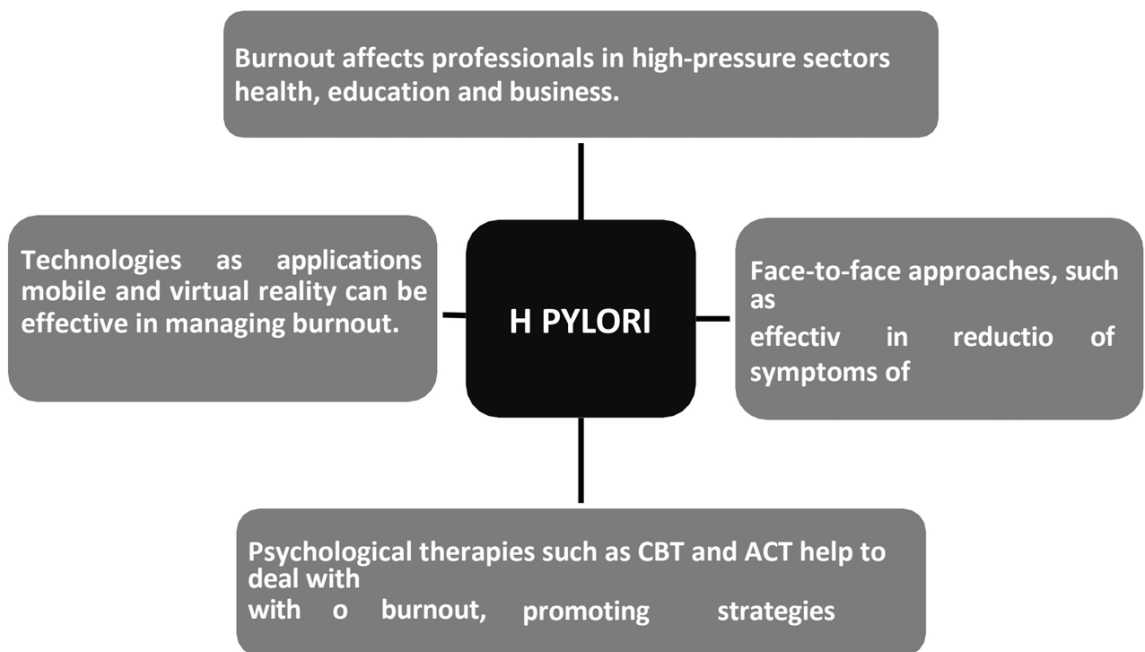


FIGURE 2: Summary of the most frequently found results according to the articles analyzed.

Source: Authors (2024)

ques in a hospital in India was evaluated by BHARDWAJ et al. (2023), who reported a significant reduction in burnout levels and an improvement in quality of working life. These results reinforce the importance of integrating mind-body practices into occupational health programs, adapting them to cultural and organizational needs.

In sectors such as , where conflict between work and family is commonly reported, strategies to manage these challenges have been analyzed. OKEREKE et al. (2023) explored interventions based on philosophy and coping, highlighting the relevance of integrated support that takes into account both work and family demands. This holistic perspective contributes to an expanded view of burnout management in industries characterized by high physical and emotional demands.

In the field of emergency medicine, MONFRIES et al. (2023) investigated an app aimed at reducing burnout in emergency professionals. The intervention, based on a randomized pilot trial, proved effective reducing stress and improving general well-being. This demonstrates the importance of customized tools for specific work contexts, aligning technology and mental health.

In the context of the impact of burnout on mental health, some studies point to the need for more integrated organizational policies, which are not limited to one-off interventions, but which address the organizational culture as a whole. The research by ALMEIDA et al. (2022), for example, suggests that continuous worker support programs, which involve both preventive measures and support actions during stress crises, can result in a substantial reduction in the impact of burnout. These policies should also include regular training on stress management, enabling employees to develop emotional resilience that lasts over the long term.

Another promising area is the use of psychosocial support interventions, as demonstrated in a study by LIMA et al. (2021), who explored the effect of cognitive-behavioral therapy (CBT) adapted to a group model in corporate environments. The application of CBT in the workplace, especially with a focus on aspects such as restructuring negative thoughts and building coping strategies, proved effective in reducing not only burnout, but also other associated conditions such as anxiety and depression. This approach can be highly beneficial, particularly in high-pressure environments such as emergency units and hospitals.

Programs co-created with workers also emerge as effective alternatives. CEDSTRAND et al. (2022) evaluated an occupational intervention aimed at stress and psychosocial conditions in the construction sector. The study revealed that the active collaboration of workers in the planning of actions increases the adherence and effectiveness of interventions, reinforcing the importance of the protagonism of professionals.

Mindfulness in the workplace is another widely researched approach. MARTÍNEZ-BORRÁS et al. (2022) conducted a pilot study that showed positive changes in biological markers such as salivary immunoglobulin A, as well as a reduction in stress and burnout. This multidimensional approach highlights the physiological and psychological benefits of mindfulness programs, making them a valuable alternative for various sectors.

Acceptance and commitment therapy (ACT) was analyzed in a study with health professionals in the United Kingdom. PRUDENZI et al. (2022) observed a significant reduction in psychological distress after the intervention. This method, which is based on acceptance of difficult experiences and orientation towards personal values, stands out as an effective strategy for managing burnout.

For obstetric nursing professionals, group clinical supervision was evaluated by CATLING et al. (2022). The study showed that this approach promotes emotional support and professional development, significantly reducing burnout. The discussion highlights the relevance of creating safe spaces for sharing and collective learning among health professionals.

Finally, studies that address physical activity in the workplace, such as that by GINOUX et al. (2019), suggest that structured programs to prevent burnout can also improve the vigor of participants. These initiatives reinforce the importance of including physical activity as part of occupational health strategies, promoting physical and mental well-being in an integrated way.

CONCLUSION

Burnout is a growing phenomenon that affects professionals in various fields, compromising their mental and physical health and their organizational performance. Early identification of signs of burnout is essential to mitigate its impacts, with the implementation of prevention and management strategies in the . Analysis of the causes and risk factors reveals that burnout is not limited to a specific sector, but is a cross-cutting condition, with significant prevalence in high-pressure areas such as health, education and companies with intense demands. Technological interventions, such as mobile apps and virtual reality, offer new ways of managing stress in the workpla-

ce, providing tools for emotional recovery. On the other hand, face-to-face approaches, such as meditation and breathing techniques, have been shown to be effective in reducing the symptoms of burnout when integrated into a regular self-care routine. The personalization of intervention programs, taking into account the specificities of the work environment and the individual needs of professionals, is a crucial point for the success of preventive actions. Social support, both in the organizational context and in external networks, also plays a fundamental role in coping with burnout, standing out as an emotional support strategy. Models of co-creation of intervention programs, involving the workers themselves in the process, have shown positive results in terms of adherence and effectiveness. In terms of therapeutic approach, psychological therapies such as Cognitive-Behavioral Therapy (CBT) and Acceptance and Commitment Therapy (ACT) have been effective in treating burnout, helping professionals to cope with the pressure and establish new coping mechanisms. In addition, physical activity, by promoting physical and emotional well-being, is an important ally in the prevention and treatment of burnout. The implementation of organizational policies that prioritize mental health care for professionals is essential to reduce the incidence and impact of this condition. Innovations in the treatment of burnout, with a focus on technological approaches and holistic practices, present new possibilities for managing stress in the workplace, allowing for more efficient and accessible management.

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