

Entry

Human Resources' Burnout

Olga Alexandra Chinita Pirrolas ^{1,*} and Pedro Miguel Alves Ribeiro Correia ^{2,3,*}

¹ Institute of Social and Political Sciences, University of Lisbon, 1649-004 Lisbon, Portugal

² Faculty of Law, University of Coimbra, 3000-295 Coimbra, Portugal

³ University of Coimbra Institute for Legal Research (UCILeR), Trinity College, 3000-018 Coimbra, Portugal

* Correspondence: olgaalexandrap@gmail.com (O.A.C.P.); pcorreia@fd.uc.pt (P.M.A.R.C.)

Definition: The reality of the occurrence of burnout in human resources has been increasingly recognised as a result of today's transforming and competitive society, which exerts a very high level of stress and anxiety on workers, generating a notorious problem in the field of human resource management. Problems related to symptoms of exhaustion, mental weakness, personal devaluation, inability to solve professional problems, restlessness, and eating disorders. These problems manifest themselves in terms of personality, triggering feelings of threat, panic, nervousness, or suicide. Such disorders pose a threat not only to the person but also to the quality of their professional activities. In this way, burnout syndrome can cause a mental and physical breakdown requiring complex medical assistance. In view of the above, it is imperative that organisations take preventative and corrective measures to tackle this phenomenon. This entry covers topics such as the history of the concept of burnout, the concept, its causes and consequences, and predictive methods. By approaching the aforementioned topics using the existing literature on burnout syndrome, this entry aims to demystify the subject of burnout in human resources.

Keywords: burnout; human resources; causes; consequences; predictive method



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1. Historic Introduction

In recent decades, the technological revolution has brought about a significant change in the labour market, speeding up the pace of work and increasing the overload of information. The characteristics of the contemporary labour market, i.e., temporary contracts, psychological contracts between workers and employers, and new perceptions of employability, call into question job security, thus representing an inexhaustible source of professional stress, which is defined by the worker's inability to deal with the sources of stress, and in chronic cases, burnout, which can lead to mental and physical exhaustion requiring complex medical assistance [1–3].

The importance of working conditions and workers' health has been a growing concern for organisations in recent years, which have been raising awareness of issues related to quality of life at work at all levels [4]. The topics that have attracted the most attention are related to work-related stress, which is defined as a set of emotional, cognitive, physiological, and behavioural reactions to certain harmful aspects in the workplace. This is characterised as a state of high levels of excitement and anguish, followed by the frequent feeling of not being able to resolve a given situation [4]. When work-related stress intensifies and becomes chronic, known as occupational stress, it results in burnout syndrome.

The first definition of the concept of burnout came from the psychiatrist Freudenberg [5], who was considered the discoverer of this syndrome. The author refers to burnout as an energy drain experienced by professionals when they feel overwhelmed by work issues. Although Freudenberg [5] was the pioneer in formulating the concept of burnout, other authors had already addressed similar terms [4]. One of them is characterised as "detached concern" [6], referring to the behaviour of health-related professions, in which workers are expected to be involved in the care provided, without becoming

emotionally involved. On the other hand, Zimbardo [7] refers to the concept of “defensive dehumanisation”, which referred to the need to protect oneself from continuous and unbalanced emotional states by interacting with people as if they were exclusively objects or problems to be solved.

In this sense, the interest in research into burnout syndrome arose with healthcare professionals, since the nature of their work meant that they needed to maintain direct and constant contact with other people. It is often necessary to adapt to dehumanised and depersonalised health systems [8].

Interest in this field of research arose from three factors, which according to Perlman and Hartman [9] are related to the following: (1) the need to improve quality of life, as well as the changes implemented by the World Health Organisation; (2) given the increase in demand, people’s requirements in relation to health, educational, and social services, and (3) the need for researchers, clinical services, and public bodies to study the issue in greater depth, with the aim of preventing its symptoms, given its complexity and harmfulness.

2. Application and Influences

This entry used a literature review as a means of gathering information on the subject of burnout in human resources.

Once the information had been collected, the theoretical sources were analysed in order to generate information for the construction of knowledge, promoting an understanding of the issue at a professional level and among the general public, in terms of the social and psychological reality experienced today.

The research method was based on the selection of theoretical sources, analysing the subject of burnout in such a way that its structure was presented in a clear and transparent way, making it easier for the general public to understand the subject.

In this way, topics on burnout syndrome, its causes and consequences, and its predictive methods were addressed, thus contributing to the increase in the literature on a real and difficult-to-solve issue.

3. Main Focus of Approach

3.1. Burnout Syndrome

The concept of professional burnout emerged in the 1970s, capturing something very critical about people’s experience of work through psychological literature and cultural discourse [10]. This concept emerged in the United States as a response to the process of deterioration in the care and professional attention of organisational workers. Over time, this syndrome has been established as a response to chronic labour stress and is associated with negative attitudes and feelings [11].

Since then, this issue has inspired researchers to try to better understand its meaning and causes, and professionals to try to find ways of dealing with it, preventing it or combating it. In this way, burnout has been recognised by researchers and professionals as a social problem worthy of attention and improvement.

The concept of burnout has stimulated research into stress at work, particularly in areas such as the helping professions. It has also stimulated theorising, essentially in the area of emotional labour, the contagion of symptoms, and social exchange [10].

The phenomenon of burnout has been characterised by three interconnected dimensions: emotional exhaustion, depersonalisation, and loss of personal fulfilment [12]. According to Cox et al. [13], it is from the moment the worker’s psychic energies are depleted and he is exhausted from continuing his work that he begins to depersonalise his relationships with others, losing his personal realisation. Maslach e Leiter [14] point out that burnout does not have to be restricted to health and education professions, but is a phenomenon that affects practically all professions, since the tendency is to think that burnout only occurs in professions that require intense and constant interpersonal contact. The authors argue that this is because most professions require interrelationships, whether it is dealing with customers, suppliers, colleagues, and supervisors, or even working in groups or

teams. However, nowadays, given the nature and functionality of work, there are high-risk professions, with those with a low risk of burnout being the minority.

In view of the above, burnout has been approached from four perspectives: clinical, social–psychological, organisational, and social–historical [14].

The clinical perspective, considered the first to emerge, considers that the state of exhaustion arises as a result of intense work, in which the organisation has not taken care to meet the needs of the worker. Burnout is the consequence of working hard to help other people.

The social–psychological perspective is associated with the work environment and the characteristics of the job, and these factors are the predictors of burnout. These are related to stress and work overload.

The organisational perspective emphasises organisational characteristics as the generators of burnout. Characteristics related to the way the organisation works and the cultural environment, considering that the three dimensions of burnout, i.e., emotional exhaustion, depersonalisation, and the feeling of low personal accomplishment, represent three mechanisms used to combat stress, frustration, and monotonous work.

Finally, the social–historical perspective associates the occurrence of burnout with the impact of society, with a more significant weight than individual or organisational issues, given that the model of society, focused on individualistic values with little regard for community values, does not favour the commitment of professionals to develop occupations related to caring for other people.

Burnout occurs whenever the human side of work is disregarded [14,15]. “Burnout is likely to occur whenever there is an imbalance between the nature of the work and the nature of the person doing the work” [14] (p. 9).

Given that the perception of stress and the onset of burnout differ according to various factors, such as the activity performed, gender, and age, the following sections present topics that deal with its causes and consequences, as well as the predictive and preventive methods applied in order to predict or remedy its occurrence.

3.2. Causes and Consequences

Derived from the changes that have been taking place in the labour market as a result of the process of economic globalisation, new technologies, great competitiveness in the labour market, the need to produce more and faster, among other factors, these end up causing physical and emotional wear and tear in workers [16].

Nowadays, workplaces are characterised by a fast pace of work, the expectations of self-realisation have increased, there is a greater dependence on interpersonal coordination to carry out tasks, and the growing changes result in job insecurity. In this sense, the psychosocial conditions of work on mental health, as well as cardiovascular and musculoskeletal disorders, have gained relevance [17].

As a result of the new organisational configurations, these have made new demands on human resources in terms of qualifications and skills. These changes have resulted in mental illnesses, among which burnout stands out [18].

The concept of burnout, of English origin, as mentioned above, is related to a set of symptoms characterised by the signs of emotional exhaustion, depersonalisation, and reduced capacity for professional fulfilment, resulting in a poor adaptation of work to a prolonged, stressful and highly stressful task [19].

In the 1980s, studies identified the symptoms of burnout in professional groups that until then were not considered to be at risk, because they were considered to be vocational professions. Burnout has also been found to occur in people with apparently well-adjusted and balanced personalities until they enter specific work environments. There have been significant losses in terms of human resources and in economic terms, especially in the areas of education and health, reflecting high levels of burnout, resulting in an increase in sick leave, fatigue, demotivation, and absenteeism [20].

In addition to the causes and consequences presented above, anxiety arises. It has been pointed out that the development of anxiety can be triggered by a situation of prolonged stress caused by work overload. Anxiety can arise from unclear professional goals and orientation and low self-esteem and self-confidence, which are components of personality, significantly contribute to or hinder the effectiveness of professional activity [1].

However, the social worker, being a facilitator of change who is closely linked to the goals of individual clients, directly or indirectly involved in various psychosocial risk situations, promotes change through direct interaction with the client. Social workers face a variety of challenges that are multifaceted and often unsolvable, with negative consequences if their professional activity is influenced by various burnout factors. Burnout syndrome impairs personal and social functioning, and interventions to reduce burnout and promote engagement can take place at organisational and personal levels [21].

In many ways, burnout can be similar to depression. Burnout is classed as a milder form of depression. This phenomenon should be considered a significant mental health condition and consequently a major obstacle to their ability to carry out their work. However, burnout syndrome and depression have both common and distinct characteristics. Common features include visible weakness, depressiveness, and reduced ability to work, while distinctive features include isolation, essentially from work and negative thoughts about work [22].

3.3. Predictive and Preventive Methods

One method of predicting burnout is the theory of conserving human resources. It is a motivational theory based on the promotion and protection of human resources [23]. Examples of predictive methods are related to social support, opportunities for improvement in employment, and the degree of participation in decision-making, so that human resources are psychologically well or have an optimistic personality and have a level of autonomy by establishing behaviours and continuous results [23].

The central element of burnout and commitment to work is related to the affective component that results from intrinsic processes in workers, specifically those associated with emotional robustness, cognitive agility, and physical vigour [24].

From this point of view, burnout is the end state of a long-term process of loss of human resources, i.e., one that develops gradually over time. Through which it is necessary to intervene and act in order to reverse the process with the aim of anticipating the state of burnout and generating real gain by maintaining human resources [24].

Burnout is often characterised by emotional exhaustion, which has emerged as a result of the area of well-being in the workplace [25].

In view of the above, burnout continues to be the main concern for human resource management. The persistence of this problem is worrying, given the lack of action and intervention by human resource professionals to mitigate adverse risk circumstances. Burnout does not manifest itself as an immediate symptom, but as an evolving one, which makes it a difficult problem to solve. However, human resource professionals can identify the areas most prone to burnout and implement initiatives to reduce the risk [26].

In this sense, predicting the occurrence of burnout provides a series of benefits for both research and decision-making by human resource professionals. Given that burnout is interlinked with individual, cultural, and social factors, acting to resolve it requires methods that can deal with various circumstances/causes [27].

Although automated learning has been advancing for several years, it has only recently been used in the behavioural sciences [28]. It is used in computational psychiatry to improve the diagnosis of mood and stress disorders [29], depression [30], and suicidality [31].

In view of the above, this method is especially important as it makes it possible to analyse symptoms from different factors, for example, Kaczar et al. [32] used automated learning techniques to detect stress situations through the use of digital sensors and self-assessment questionnaires, and these methods are used by emergency doctors.

For their part, Mary and Jabasheela [33] used different machine learning methods to predict depression, stress, and anxiety, and compared the results obtained with a logistic regression model to show that logistic regression was more accurate. On the other hand, Kesser et al. [34] applied a survey to identify the level of depression and found that the automated learning method produced better results than conventional techniques. Zhernova et al. [35] used the Maslach burnout inventory method to predict the initial prerequisites of burnout, and the application of automated learning approaches made it possible to accurately predict the occurrence of burnout in 70 per cent of cases.

Based on a review of the evidence, Gabriel and Aguinis [36] present five recommendations and implementation guidelines that can help organisations prevent and combat burnout: (1) provide stress management interventions, (2) allow employees to be active creators of their work, (3) cultivate and encourage social support, (4) involve employees in decision-making, and (5) implement high-quality performance management. Overall, these authors' evidence-based recommendations, together with implementation guidelines, will help human resource professionals to promote and create sustainable well-being at work.

3.3.1. Interventions in Preventing Burnout

Studies show that social support from colleagues prevents burnout; however, this relationship is much more complex, as there is the possibility of a reciprocal cycle of loss, thus calling for more research into inter-individual factors such as social support and how interventions that act on interpersonal resources can play a role in preventing the occurrence of burnout [37].

In view of the above, burnout can be expected to jeopardise support from co-workers, reducing the emotional capacity of workers to invest in and maintain social networks in the workplace. In addition, workers who are in a state of emotional exhaustion may be less likely to offer their support to others and therefore less likely to build a reciprocal social relationship. As a result, workers are unable to call on the support of co-workers to reduce the likelihood of tension and mitigate the impact of stress factors, thereby further aggravating their burnout levels [38].

It should be noted that in addition to preventive measures at an organisational level, such as having enough resources to work with to avoid high professional demands [39], other measures are highlighted, such as at a family or personal level.

Having the social support of family and friends is an important protective factor in preventing burnout [40].

However, other personal resources can be taken into account, such as physical health and psychological well-being, which contribute to the prevention of burnout [41].

In this entry, the main focus is on burnout in human resources, which affects organisations, so it is important to highlight changes at organisational level to reduce burnout.

Lee et al. [42] refer to three levels of change to reduce the risk of burnout: modifying the organisational structure and work processes; adjusting the organisation's objectives with its human resources, through professional development programmes, in order to provide a better adaptation to the work environment, and taking action at an individual level to reduce stress and poor health symptoms by promoting healthy behaviours.

3.3.2. Occurrence of Burnout According to Job, Gender, and Age

Satisfied human resources are a vital pre-requisite for a healthy organisation [43], and it is important for organisations to provide a safe and friendly working environment [44].

Organisations must provide a safe working environment in order to promote the well-being of their employees, with the aim of reducing stress at work. However, other factors must be considered, such as understanding the characteristics of the job and adapting them to individual needs [45]. This is due to the fact that differences and work characteristics are not experienced in the same way by all work groups [46].

Although studies have identified workplace factors that induce burnout, little is known about how burnout develops over time. In this sense, a better understanding of how

burnout is perpetuated is crucial for the development of effective intervention efforts, especially given the effects it triggers in accidents and incidents in high-risk industries. In view of the above, rapid intervention can stop or prevent this syndrome from developing, with the aim of promoting well-being in the workplace, as well as promoting prevention [26].

Looking at burnout in the context of medicine, it is an established medical diagnosis. This means that it is included in the manuals, and both doctors and other health professionals are trained in the assessment and treatment of burnout. Nevertheless, psychologists, social workers, psychiatrists, counsellors, human services staff, and organisational consultants offer a wide range of interventions, ranging from individual treatment programmes, preventative workshops, or organisational consultancy [10].

In view of the above, interventions to combat burnout have been divided into two categories: those aimed at doctors and those aimed at organisations. The aim of interventions for doctors is to improve doctors' resilience by implementing activities such as the promotion of mindfulness or cognitive behavioural techniques, which aim to improve an individual's ability to deal with certain adversities, increase their competence, and communicate effectively [47].

However, the fact that these doctor-orientated support procedures focus on individual solutions, thereby raising the possibility that they are insufficient [47]. It is more common for burnout to be caused by variables at the organisational level, and interventions to prevent burnout may be more successful if they focus on factors such as health and safety as changes to be taken into account at the organisational level [48].

However, other factors influence the occurrence of burnout, such as age and gender.

As a result of demographic changes in most industrialised countries, the average age of workers is increasing, and human resources are diversifying in terms of age [49].

The age factor in the relationship between professional characteristics and professional attitudes plays an important role [46]. As a result of an ageing population, organisations need to redesign their working methods and ways of working in order to enable employees to continue to carry out their jobs successfully. It is also important to take into account the interaction between age and job characteristics [46].

However, age is a factor that has been largely ignored in the design of work [50].

In short, the demographic changes resulting from an ageing population have an impact on organisations and the age structure of their workforce. Organisations are therefore faced with new challenges in the field of human resource management, as employees belonging to different age groups also view their working environment differently and react differently. In order to provide adequate management, organisations must create a suitable working environment that dictates the successful outcome of ageing workers in order to facilitate the achievement of objectives and performance and maintain the company's competitiveness [51].

In light of the above facts, Hertel et al. [49] reported that older workers are less likely to experience burnout than younger workers, as they face greater pressure to develop strong ties with the labour market [52].

Hertel et al. [49] pointed out that the age diversity of workers has different effects on work-related attitudes. In this sense, understanding workers of different ages is fundamental for improving productivity and ensuring the success of the organisation by taking care of the well-being of all employees [53].

With regard to gender, studies show that women are more susceptible to burnout than men [54,55]. This is because women tend to have higher levels of emotional exhaustion than men, and men have higher levels of depersonalisation [54].

According to gender role theory, women express their emotions, while men tend to repress them [56].

In light of the above facts, a meta-analysis on gender differences in burnout [57] confirmed that women are more likely to experience emotional exhaustion and that men are more likely to experience depersonalisation.

4. Conclusions and Prospects

This entry was based on the need to expand on the subject of burnout in human resources, as it is a complex problem that covers all professions and jeopardises the mental health of workers. Since human resources are an organisation's most valuable asset and are considered to be the engine on which its full functioning depends, their well-being must be valued and invested in.

Through a review of the existing literature, which was considered the most relevant and the most frequently reflected, it was possible to take a historical approach to the concept of burnout, present its concept, which allowed us to deepen our knowledge and expand the literature, and present its causes and consequences. The presented causes and consequences showed that burnout occurs in all professions, regardless of whether they are customer service, care, or service professions, and finally, the private methods were presented, which are the biggest concerns that lead to burnout syndrome. These provided a more in-depth insight into what aspects organisations should focus on in order to remedy the occurrence of burnout.

Organisations need to take strategic, predictive, and preventive actions by surveying employee satisfaction, providing a good workplace environment, fair work distribution, and flexible working hours so that there is a balance between personal and professional life, taking into account the number of hours worked, and promoting mutual support and teamwork in order to mitigate exhausting breakdowns, stress, and work overload, in other words, to overcome or mitigate the occurrence of burnout.

In the view of the above facts, and taking this article as a basis, it is proposed that an empirical study be carried out to identify the main causes of burnout and, through statistical analysis, to ascertain the main factors on which organisations should act in order to provide a better quality of life for human resources.

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References

1. Samusevica, A.; Striguna, S. Prevention of Burnout Syndrome in Social Workers to Increase Professional Self-Efficacy. *Eng. Proc.* **2023**, *55*, 13. [\[CrossRef\]](#)
2. Freudenberg, H.; Richelson, G. *Burnout: The High Cost of High Achievement*; Anchor Press: New York, NY, USA, 1980.
3. Freitas, M.; Moreira, A.; Ramos, F. Occupational Stress and Turnover Intentions in Employees of the Portuguese Tax and Customs Authority: Mediating Effect of Burnout and Moderating Effect of Motivation. *Adm. Sci.* **2023**, *13*, 251. [\[CrossRef\]](#)
4. Moreno-Jiménez, B.; Muñoz, A.; Hernández, E.; Benadero, M. Breve historia del burnout a traves de sus instrumentos de evaluacion. In *Quemarse en el Trabajo (Burnout)*; Egado Editorial Zaragoza: Zaragoza, Spain, 2005; pp. 161–183.
5. Freudenberg, H. Staff burn-out. *J. Soc.* **1974**, *30*, 159–165. [\[CrossRef\]](#)
6. Lief, H.; Fox, R. Training for “detached concern” in medical students. In *The Psychological Basis of Medical Practice*; Lief, H., Fox, R., Eds.; Harper & Row: New Cork, Ireland, 1963.
7. Zimbardo, P. The Human choice: Individuation, reason, and order versus individuation, impulse and chaos. In *Nebraska Symposium of Motivation*; Arnold, W.J., Levine, D., Eds.; University of Nebraska Press: Lincoln, NE, USA, 1970.
8. Carlotto, M.; Gobbi, M. Síndrome de burnout: Um problema do indivíduo ou do seu contexto de trabalho? *Aletheia* **1999**, *10*, 103–114.
9. Perlman, B.; Hartman, A. Burnout: Summary and future research. *Hum. Relat.* **1982**, *35*, 283–305. [\[CrossRef\]](#)

10. Schaufeli, W.; Taris, T.; Rhenen, W. Workaholism, Burnout, and Work Engagement: Three of a Kind or Three Different Kinds of Employee Well-being? *Appl. Psychol. Int. Rev.* **2008**, *57*, 173–203. [CrossRef]
11. Nunes, M.L. *As Influências do Ambiente de Trabalho no Surgimento da Síndrome de Burnout*; [Trabalho de Conclusão de Curso]; Universidade do Extremo Sul Catarinense: Criciúma, SC, Brazil, 2008.
12. Maslach, C.; Jackson, S. The measurement of experienced burnout. *J. Occup. Behav.* **1981**, *2*, 99–113. [CrossRef]
13. Cox, T.; Kuk, G.; Leiter, M. Burnout, health, workstress and organizational healthiness. In *Professional Burnout: Recent Developments in Theory and Research*; Schaufeli, W., Maslach, C., Marek, T., Eds.; Taylor & Francis: Washington, WA, USA, 1993; pp. 177–193.
14. Maslach, C.; Leiter, M. *The Truth about Burnout: How Organization Cause, Personal Stress and What to Do about It*; Jossey-Bass: San Francisco, CA, USA, 1997.
15. Maslach, C.; Leiter, M. Take this job and love it. *Psychol. Today* **1999**, *32*, 50–57.
16. Silva, L.; Lima, F.; Caixeta, R. Síndrome de Burnout em profissionais do Corpo de Bombeiros. *Mudanças* **2010**, *18*, 91–100. [CrossRef]
17. Andel, R.; Crowe, M.; Kåreholt, I.; Wastesson, J.; Parker, M.G. Indicators of job strain at midlife and cognitive functioning in advanced old age. *J. Gerontol. Ser. B Psychol. Sci. Soc. Sci.* **2011**, *66*, 287–291. [CrossRef]
18. Batista, J.; Carlotto, M.; Coutinho, A.; Augusto, L. Prevalência da Síndrome de Burnout e fatores sociodemográficos e laborais em professores de escolas municipais da cidade de João Pessoa. *Rev. Bras. Epidemiol.* **2010**, *13*, 502–512. [CrossRef] [PubMed]
19. Silveira, N.; Vasconcellos, S.; Cruz, L.; Kiles, R.; Silva, T.; Castilhos, D. Avaliação de burnout em uma amostra de policiais civis. *Rev. Psiquiatr. Rio Gd. Sul.* **2005**, *27*, 159–163. [CrossRef]
20. Delgado, C.; Blanco, J.; Aguado, M.; Ruíz, A.; Cabaco, A.; Sánchez, T.; Alonso, C.; Bernabé, J. Revisión teórica del burnout o desgaste profesional en trabajadores de la docencia. *Caesura* **1993**, *2*, 47–65.
21. Maslach, C.; Jackson, S.; Leiter, M. Maslach Burnout Inventory. In *Evaluating Stress: A Book of Resources*, 3rd ed.; Zalaquett, C.P., Wood, R.J., Eds.; CPP: Palo Alto, CA, USA, 1997; pp. 191–218.
22. Purvin, S. Izdegšanas Sindroms. 2020. Available online: http://stradavesels.lv/Uploads/2020/02/27/02_Santa_Purvina.pdf (accessed on 8 December 2023).
23. Lee, R.; Ashforth, B. A meta-analytic examination of the correlates of the three dimensions of job burnout. *J. Appl. Psychol.* **1996**, *81*, 123–133. [CrossRef] [PubMed]
24. Gorgievski, M.; Hobfoll, S. Work can burn us out or fire us up. Conservation of resources in burnout and engagement. In *Handbook of Stress and Burnout in Health Care*; Halbesleben, J.R.B., Ed.; Nova Science Publishers, Inc.: Hauppauge, NY, USA, 2008; Chapter 2.
25. Leiter, M.; Bakker, A.; Maslach, C. The contemporary context of job burnout. In *Burnout at Work: A Psychological Perspective*; Leiter, M., Bakker, A., Maslach, C., Eds.; Psychology Press: Hove, UK, 2014; pp. 1–9.
26. Nobles, C. Stress, burnout and security fatigue in cybersecurity: A human factors problem. *Holistica J. Bus. Public Adm.* **2022**, *13*, 49–72. [CrossRef]
27. Grządzielewska, M. Using Machine Learning in Burnout Prediction: A Survey. *Child and Adolescent. Soc. Work. J.* **2021**, *38*, 175–180. [CrossRef]
28. DelPozo-Banos, M.; John, A.; Petkov, N.; Berridge, D.; Southern, K.; Loyd, K.; Jones, C.; Spencer, S.; Travieso, C.M. Using neural networks with routine health records to identify suicide risk: Feasibility Study. *JMIR Ment. Health* **2018**, *5*, e10144. [CrossRef]
29. Silva, E.; Aguiar, J.; Reis, L.; Sá, J.; Gonçalves, J.; Carvalho, V. Stress among Portuguese Medical Students: The EuStress Solution. *J. Med. Syst.* **2020**, *44*, 45. [CrossRef]
30. Kessler, R.; van Loo, H.; Wardenaar, K.; Bossarte, R.; Brenner, L.; Cai, T.; Ebert, D.D.; Hwang, I.; Li, J.; de Jonge, P.; et al. Testing a machine-learning algorithm to predict the persistence and severity of major depressive disorder from baseline self-reports. *Mol. Psychiatry* **2016**, *21*, 1366. [CrossRef]
31. Kaczor, E.; Carreiro, S.; Stapp, J.; Chapman, B.; Indic, P. Objective measurement of physician stress in the Emergency Department using a wearable sensor. In Proceedings of the 53rd Hawaii International Conference on System Sciences, Maui, HI, USA, 7–10 January 2020; pp. 3729–3738.
32. Mary, S.; Jabasheela, L. An evaluation of classification techniques for depression, anxiety and stress assessment. In *International Conference for Phoenixes on Emerging Current Trends in Engineering and Management (PECTEAM 2018)*; Atlantis Press: Amsterdam, The Netherlands, 2018.
33. Kessler, R.; Warner, C.; Ivany, C.; Petukhova, M.; Rose, S.; Bromet, E.; Brown, M.; Cai, T.; Colpe, L.J.; Cox, K.L.; et al. Predicting suicides after psychiatric hospitalization in US Army soldiers: The Army Study to assess risk and resilience in servicemembers (Army STARRS). *JAMA Psychiatry* **2015**, *72*, 49–57. [CrossRef]
34. Zhernova, P.; Bodyanskiy, Y.; Yatsenko, B.; Zavgorodnii, I. Detection and prevention of professional burnout using machine learning methods. In Proceedings of the 2020 IEEE 15th International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (TCSET), Lviv-Slavske, Ukraine, 25–29 February 2020; pp. 218–221. [CrossRef]
35. Gabriel, K.; Aguinis, H. How to prevent and combat employee burnout and create healthier workplaces during crises and beyond. *Elsevier-Bus. Horiz.* **2022**, *65*, 183–192. [CrossRef]
36. McLinton, S.; Jamieson, S.; Tuckey, M.; Dollard, M.; Owen, M. Evidence for a Negative Loss Spiral between Co-Worker Social Support and Burnout: Can Psychosocial Safety Climate Break the Cycle? *Healthcare* **2023**, *11*, 3168. [CrossRef] [PubMed]
37. Halbesleben, J. Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *J. Appl. Psychol.* **2011**, *96*, 1134–1145. [CrossRef]

38. Webb, C.; Cohen, Z.; Beard, C.; Forgeard, M.; Peckham, A.; Björgvinsson, T. Personalized prognostic prediction of treatment outcome for depressed patients in a naturalistic psychiatric hospital setting: A comparison of machine learning approaches. *J. Consult. Clin. Psychol.* **2020**, *88*, 25–38. [[CrossRef](#)] [[PubMed](#)]
39. Alarcon, G.M. A meta-analysis of burnout with job demands, resources, and attitudes. *J. Vocat. Behav.* **2011**, *79*, 549–562. [[CrossRef](#)]
40. Verweij, H.; van der Heijden, F.M.M.A.; van Hooff, M.L.M.; Prins, J.T.; Lagro-Janssen, A.L.M.; van Ravesteijn, H.; Speckens, A.E.M. The contribution of work characteristics, home characteristics and gender to burnout in medical residents. *Adv. Health Sci. Educ.* **2017**, *22*, 803–818. [[CrossRef](#)]
41. Bretland, R.J.; Thorsteinsson, E.B. Reducing workplace burnout: The relative benefits of cardiovascular and resistance exercise. *Peer J.* **2015**, *3*, e891. [[CrossRef](#)]
42. Lee, R.T.; Seo, B.; Hladkyl, S.; Lovell, B.L.; Schwartzmann, L. Correlates of physician burnout across regions and specialties: A meta-analysis. *Hum. Resour. Health* **2013**, *11*, 48. [[CrossRef](#)]
43. Halkos, G.; Bousinakis, D. The Effect of Stress and Satisfaction on Productivity. *Int. J. Product. Perform. Manag.* **2010**, *59*, 415–431. [[CrossRef](#)]
44. George, E.; Zakkariya, K.A. Job related stress and job satisfaction: A comparative study among bank employees. *J. Manag. Dev.* **2015**, *34*, 316–329. [[CrossRef](#)]
45. Morgeson, F.P.; Humphrey, S.E. The Work Design Questionnaire (WDQ): Developing and Validating a Comprehensive Measure for Assessing Job Design and the Nature of Work. *J. Appl. Psychol.* **2006**, *91*, 1321–1339. [[CrossRef](#)]
46. Zaniboni, S.; Truxillo, D.M.; Fraccaroli, F.; McCune, E.A.; Bertolino, M. Who Benefits from More Tasks? Older Versus Younger Workers. *Manag. Psychol.* **2014**, *29*, 508–523. [[CrossRef](#)]
47. Govindaras, B.; Wern, T.; Kaur, S.; Haslin, I.; Ramasamy, R. Sustainable Environment to Prevent Burnout and Attrition in Project Management. *Sustainability* **2023**, *15*, 2364. [[CrossRef](#)]
48. Virag, P. Control in Agile IS Development Projects: Looking Beyond Agency Theory. *Procedia Comput. Sci.* **2021**, *181*, 3–14. [[CrossRef](#)]
49. Hertel, G.; Thielgen, M.; Rauschenbach, C.; Grube, A.; Stamov-Roßnagel, C.; Krumm, S. Age Differences in Motivation and Stress at Work. In *Age-Differentiated Work Systems*; Schlick, C., Frieling, E., Wegge, J., Eds.; Springer: Berlin/Heidelberg, Germany, 2013; pp. 119–147. [[CrossRef](#)]
50. Truxillo, D.M.; Cadiz, D.M.; Rineer, J.R.; Zaniboni, S.; Fraccaroli, F. A Lifespan Perspective on Job Design: Fitting the Worker to the Job to Promote Job Satisfaction, Engagement, and Performance. *Organ. Psychol. Rev.* **2012**, *2*, 340–360. [[CrossRef](#)]
51. Rožman, M.; Grinkevich, A.; Tominc, P. Occupational Stress, Symptoms of Burnout in the Workplace and Work Satisfaction of the Age-diverse Employees. *Organizacija* **2019**, *52*, 16–59. [[CrossRef](#)]
52. Götz, S.; Hoven, H.; Müller, A.; Dragano, N.; Wahrendorf, M. Age differences in the association between stressful work and sickness absence among full-time employed workers: Evidence from the German socio-economic panel. *Int. Arch. Occup. Environ. Health* **2018**, *91*, 479–496. [[CrossRef](#)] [[PubMed](#)]
53. Schneid, M.; Isidor, R.; Steinmetz, H.; Kabst, R. Age diversity and team outcomes: A quantitative review. *J. Manag. Psychol.* **2016**, *31*, 2–17. [[CrossRef](#)]
54. Maslach, C.; Schaufeli, W.B.; Leiter, M.P. Job burnout. *Annu. Rev. Psychol.* **2001**, *52*, 397–422. [[CrossRef](#)] [[PubMed](#)]
55. Maslach, C.; Leiter, M.P. Early predictors of job burnout and engagement. *J. Appl. Psychol.* **2008**, *93*, 498–512. [[CrossRef](#)] [[PubMed](#)]
56. Eagly, A.H. *Sex Differences in Social Behavior: A Social-Role Interpretation*; Lawrence Erlbaum Associates: Hillsdale, NJ, USA, 1987.
57. Purvanova, R.K.; Muros, J.P. Gender differences in burnout: A meta-analysis. *J. Vocat. Behav.* **2010**, *77*, 168–185. [[CrossRef](#)]

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