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Unraveling the Relationship Between Burnout and Depression: A Systematic Review.

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Abstract

The relationship between burnout and depression has been a topic of discussion for recent decades. To date, no conclusive answer has been given to the question of whether burnout is different from a depressive disorder. The aim was to clarify which are the similarities and differences between both entities.

A systematic review according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines was conducted. A total of 56 studies from the past five years were retrieved from Web of Science, PsycInfo and Semantic Scholar. Included studies measured and/or analyzed both burnout and depression in a quantitative and/or qualitative manner.

Overall, burnout significantly overlaps with depression. Implications of these findings for health and research are discussed.

Keywords: burnout; depression; construct overlap; occupational stress

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Burnout was originally conceptualized by Freudenberger (1974) as a condition characterized by a progressive loss of energy, motivation, empathy and exhaustion emerging from work conditions, noting that a person experiencing it “looks, acts and seems depressed” (p. 161). Nowadays, the most common description for burnout is a condition that emerges from chronic unresolvable work-related stress, and is composed of three dimensions of emotional exhaustion, cynicism and professional inefficacy (Maslach et al., 2001). In the past two decades, burnout has received growing attention from researchers on the field of occupational health (Maslach & Leiter, 2016). However, there are 13 different definitions of burnout (Guseva Canu et al., 2021). Most focus on exhaustion as the core component of burnout, but there is no consensus, and its definition remains a challenge. It is important to note that, despite its popularity, burnout is not included in the 5th edition of the diagnostic and statistical manual of mental disorders (DSM-5) (American Psychiatric Association, 2013).

One of the most controversial topics refers to whether burnout and depression are distinct constructs or overlap (Bianchi et al., 2017, 2020). This is an important topic because depression is currently the leading cause of disability worldwide (Friedrich, 2017), with an economic burden of US\$326.2 billion in the USA alone during 2020 (Greenberg et al., 2021). Depression is an heterogeneous disorder, and while the DSM-5 establishes diagnostic criteria for depression, its polythetic nature implies there is a wide variety of ways to meet these criteria (Zimmerman et al., 2015). Depression not only requires at least dysphoric mood or anhedonia, it also includes fatigue or loss of energy, feelings of worthlessness and diminished cognitive function, which resemble before mentioned burnout features (American Psychiatric Association, 2013).

Objectives

The main objective of this study was to provide a comprehensive examination of the relationship of burnout and depression.

Specifically, this study examines the evidence supporting the distinction of burnout and depression as independent or overlapping entities.

Materials and methods

Protocol

This systematic review was performed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021).

Eligibility criteria

Studies had to measure or analyze both burnout and depression in an empirical and/or qualitative manner. Only journal articles that were fully published from the last 5 years (2018-2022), in English and in Q1 or Q2 journals by Journal Citation Index of 2022 were included. Reviews and meta-analysis were excluded.

Information sources

Web of Science, PsycInfo and Semantic Scholar were searched for studies. All the searches were conducted on October 6, 2022. Reference lists of included studies were also hand-searched for potentially relevant articles.

Search strategy

For Web of Science and PsycInfo, two identical searches were conducted using the keywords “burnout” AND “depression”, with a date range from 2018 to October 6, 2022, and limiting results to articles published in Q1 or Q2 journals by Journal Citation Index of 2022. All articles which came up were selected for screening.

For Semantic Scholar, the search was conducted by typing “burnout depression” and filtered by fields of study “Psychology”, “Medicine” and “Biology”, with a date range from 2018 to October 6, 2022, and sorted by relevance. The first 20 reports which came up were selected for screening.

Selection process

A screening process of titles and abstracts of all articles retrieved was performed. Those articles considered relevant were obtained in full and assessed for inclusion.

Data extraction

Data was extracted on tools used for the measurement of burnout and depression, as well as the design of the study (i.e., cross-sectional, longitudinal, qualitative), sample characteristics and the main findings in relation to the burnout-depression relationship.

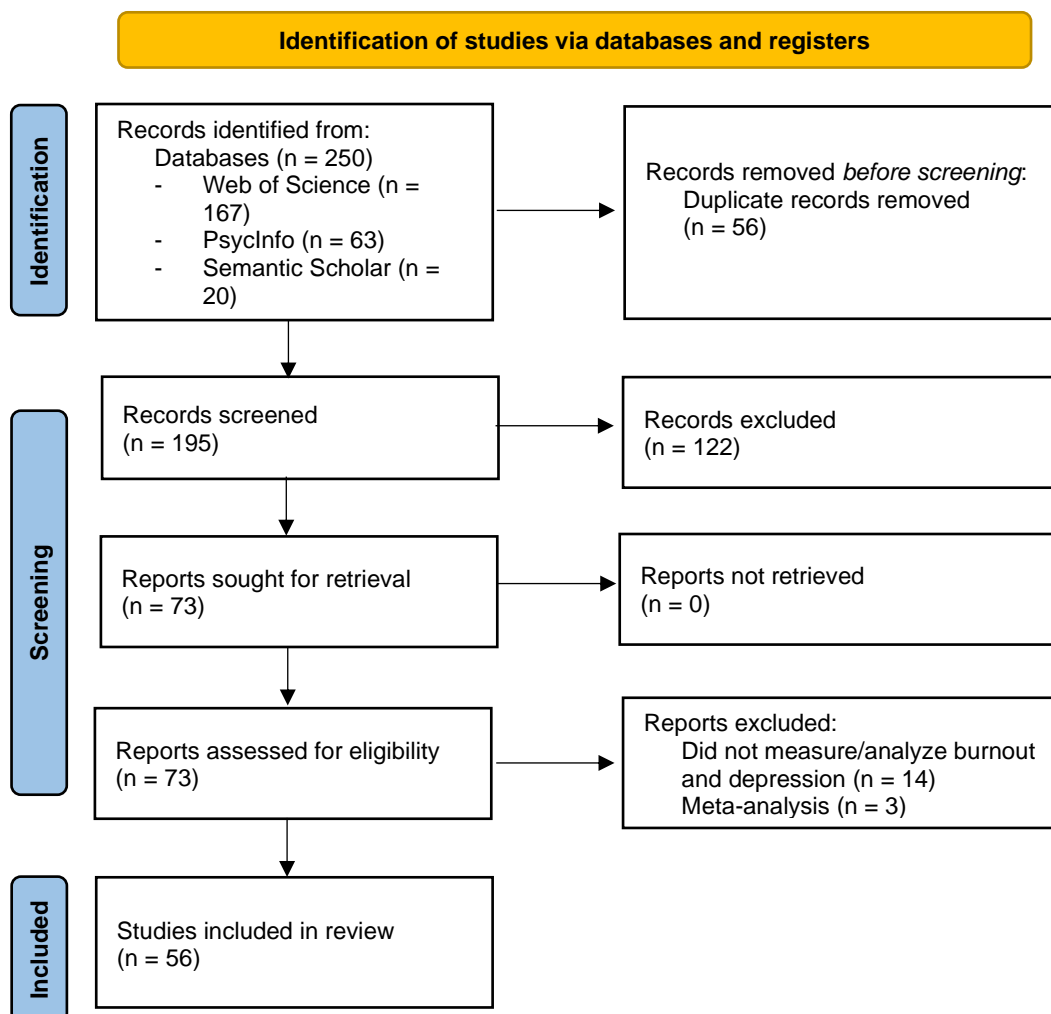
Results

Study selection

The study selection process is illustrated in Figure 1. Articles included in the review are preceded by asterisk in the reference section of this study.

Figure 1

PRISMA 2020 Flow Diagram



Study characteristics

All included studies and their characteristics are presented in Table 1 (see Appendix).

Relationship between burnout and depression

Data about the correlation between burnout and depression is widely available.

However, the strength of this correlation varies significantly across studies. In particular, most of the correlations fall within a range of $r = 0.5$ to $r = 0.75$ (e.g., Bianchi et al., 2018; Chowdhury et al., 2022; Pachi et al., 2022; Pei et al., 2021; Seo & Kim, 2022), with one study reporting values as high as $r = 0.94$ (Bianchi et al., 2018b), while others reported as low as $r = 0.329$ (de Mélo Silva Júnior et al., 2022).

Regarding the relationship between the three most well-known components of burnout and depression, emotional exhaustion (EE), burnout's core component, was the component with the strongest correlation to depression, with most studies reporting values within a range of $r = 0.5$ to $r = 0.7$ (e.g., Chigerwe et al., 2021; Chohan et al., 2020; Gérardin & Zech, 2022; Huo et al., 2021; Kwak et al., 2021; Larysz et al., 2021; Valente et al., 2018). In a similar vein, depersonalization (DP) also showed mostly a moderate positive correlation with depression, with most correlations varying between $r = 0.3$ and $r = 0.5$ (e.g., Chigerwe et al., 2021; Chohan et al., 2020; Gérardin & Zech, 2022; Kwak et al., 2021; Larysz et al., 2021; Ortega-Campos et al., 2019; Valente et al., 2018). Only in a few cases (Koutsimani et al., 2021; Pei et al., 2021), the correlation between DP and depression ($r = 0.45$ and $r = 0.51$, respectively) was close to the one between EE and depression ($r = 0.41$ and $r = 0.5$, respectively). Finally, professional efficacy (PE) evidenced the weakest correlation with depression overall, with values generally below $r = 0.33$ (e.g., Chohan et al., 2020; Gérardin & Zech, 2022; Koutsimani et al., 2021; Kwak et al., 2021; Larysz et al., 2021; Pei et al., 2021), with few studies reporting correlations higher than $r = 0.4$ (e.g., Huo et al., 2021; Ortega-Campos et al., 2019).

Regarding the temporal relationship of burnout and depression (i.e., if one precedes the other), the available evidence hints towards a bidirectional relationship, with both entities being predictors of each other in cross-sectional (Alkhamees et al., 2021; Gérardin & Zech, 2022;

Luceño-Moreno et al., 2022; Mbanga et al., 2019; Szwamel et al., 2022) and longitudinal (Abhiram et al., 2022; Guastello et al., 2022; Koutsimani & Montgomery, 2022) studies.

Furthermore, burnout and depression symptoms do not change independently, rather they seem to change in the same direction, in tandem (Hatch et al., 2019).

Distinctiveness of burnout and depression

Next, we will focus on differences between burnout and depression based on biological and psychological measures.

First, biological measures for burnout and depression were seldom found in this review. Only 3 articles focused on this topic.

The first study conducted by Wekenborg et al. (2019a) showed that both burnout and depression were associated with a pattern of blunted cardiovascular reactivity, as expected in conditions of chronic stress exposure. The second, conducted by Wekenborg et al. (2019b) illustrated once again that lower cardiovascular reactivity predicted an increased risk of burnout symptoms over one year and that EE was the only component of burnout which predicted a reduced level of cardiovascular reactivity. The third, conducted by Plieger et al. (2019) found that carriers of MAO-H allele have a stronger reaction to stress and were more prone to develop burnout and depressive symptoms when exposed to stressful life events. Interestingly, this effect was found only in women but not in men.

In terms of psychological measures, three main key features have been reported.

First, stress induced by uncertainty predicts burnout and depression in a similar manner (Simpkin et al., 2018), and in turn, both increase stress reactivity (Wekenborg et al., 2019a). Exposure to stressful life events such as the COVID-19 pandemic increase the risk of both burnout and depression symptoms (Abhiram et al., 2022; Alkhamees et al., 2021; Huo et al., 2021; Szwamel et al., 2022).

Second, studies examining differences in cognitive style reported that burnout and depression exhibited a negativity bias when presented with ambiguous situations (Bianchi et al.,

2018), and memory bias defined by an increased recall of negative words and a decreased recall of positive ones (Bianchi et al., 2018c).

Third, Tavella & Parker (2020) conducted a qualitative asking people formally diagnosed with depression and self-identified as experiencing burnout what were the main differences. Half of the sample reported that burnout had a clear cause while depression did not. Also, a fifth of the sample reported feeling more anger rather than sadness when burnt out, feeling less hopeless when burnt out, and burnout being faster and more anxiety driven than depression, which felt slower. It is remarkable that the second most popular answer (21.8% of the sample) was that burnout and depression felt the exact same.

Similarly, and in line with the key consideration of burnout as “an individual experience specific to the work context” (Maslach et al., 2001, p. 407), the qualitative study of Tavella & Parker (2020) reported that almost half of the participants distinguished depression from burnout based on the latter having a clear, often work-related, cause. Interestingly, for a few respondents life outside of the workplace is unaffected by burnout. However, Bianchi et al. (2018b) argue that burnout symptoms are not majoritarily ascribed to work, with burnout and depression sharing non work-related outcomes, such as problematic alcohol use, sleep problems and somatic complaints (Mikolajczak et al., 2020). A number of studies also reported that job stressors were linked to both burnout and depression in a similar manner and intensity (Bianchi et al., 2018b; Verkuilen et al., 2020).

Discussion

This systematic review exhibits the current situation regarding the burnout-depression relationship debate and fails to support the distinction between burnout and depression as independent entities.

Burnout and depression were strongly and positively correlated. This is consistent with recent meta-analysis (Koutsimani et al., 2019; Meier & Kim, 2022), although the question of how much should this correlation be to consider them different or the same entity remains under

discussion. Based on the results of the results of this review, the following compelling arguments can be drawn about the scientific study of the relation between burnout and depression. First, the MBI and its variants are by far the gold standard for burnout, being used in 37 out of 56 (66%) of the reviewed studies. This is important because multiple authors have stated their doubts about whether the three factor model that this measure proposes adequately characterizes the reality of the burnout experience (Sowden et al., 2022; Tavella et al., 2021; Tavella & Parker, 2020; Trigo et al., 2018). Moreover, the theoretical bases and the syndromal coherence of the burnout construct have recently also been called into question, with Schonfeld and Bianchi (2022) stating that the syndrome may have emerged from “personal impressions and anecdotal evidence” (p. 1). In addition, other articles have also argued that the three burnout components in the MBI’s model do not constitute a unified syndrome since they correlate less strongly with each other than with depression (Bianchi, 2020; Bianchi et al., 2020; Schonfeld & Bianchi, 2022; Sowden et al., 2022). Remarkably, meta-analysis addressing this debate did not test the syndromal unity of burnout (Koutsimani et al., 2019; Meier & Kim, 2022).

Overall, differences between both entities are almost non-existent in terms of their biological or psychological profile. Both burnout and depression were associated with a pattern of blunted cardiovascular reactivity (Wekenborg et al., 2019a; Wekenborg et al., 2019b) and presence of MAO-H allele, associated with a pronounced stress reactivity (Plieger et al., 2019). Consistently, both burnout and depression increase stress reactivity (Simpkin et al., 2018; Wekenborg et al., 2019a) and were associated in an almost identical fashion to a pessimistic cognitive style as suggested by a negativity-biased memory recall and interpretation of ambiguous scenarios (Bianchi et al., 2018a; Bianchi et al., 2018c). These results are important because they illustrate that burnout and depression are hard to distinguish from a biological and psychological standpoint, leaving their place of origin as the main distinction, as if burnout could be labeled as such when it refers to depression “exclusively” induced by sustained or chronic work-related stress.

This feature of work exclusivity has been treated as a central characteristic of burnout and a key point in its differentiation from depression. However, the results from this review fail to support this view. It is still not certain whether burnout symptoms are mostly attributed to work or non-work stressors (e.g., Bianchi et al., 2018b; Tavella & Parker, 2020). In fact, both burnout and depression share some common effects outside the workplace (Mikolajczak et al., 2020) and it is well-documented how job stressors are firmly linked with clinical depression (Bianchi et al., 2018b; Hatch et al., 2019; Verkuilen et al., 2020) or how non-work-related stressors are associated with burnout (Plieger et al., 2019). Because of this, claiming that burnout is work-specific seems to be an assumption that lacks robust empirical backup. This is important because burnout is included in the 11th edition of the International Disease Classification (World Health Organization, 2019), where it is stated that burnout should only be employed to characterize work-related experiences.

With the number of disorders included in the DSM (American Psychiatry Association, 2013) greatly increasing with each consecutive edition (Horwitz & Grob, 2016), it is of major importance for psychology research to not make mistakes leading to construct proliferation and redundancy, with discriminant validity often being ignored or not valued enough (Hodson, 2021; Le et al., 2010; Shaffer et al., 2016), a situation that is probably taking place in burnout's case. For some researchers, psychopathology in general is better conceived through a dimensional rather than a categorical lens (Cuthbert, 2014; Haslam et al., 2012; Hengartner & Lehmann, 2017; Kotov et al., 2017). This model seems to be a particularly good fit for depression due to its great heterogeneity, with 227 different ways to meet DSM-5 criteria for major depressive disorder (Østergaard et al., 2011; Zimmerman et al., 2015). Understanding depression as a continuum seems like a much more comprehensive prism, since following a categorial approach means two persons could both be diagnosed with depression while sharing no symptoms (Zimmerman et al., 2015). Following this line of reasoning, burnout may be encompassed within the dimensionality of depression, sharing a common subjacent process (i.e., a response to chronic stress). In fact, the Occupational Depression Inventory (ODI) (Bianchi &

Schonfeld, 2020) has been shown to have great correlations with both EE, burnout's core component, and the Copenhagen Burnout Inventory (Schonfeld & Bianchi, 2022), casting further doubts over the claim that burnout is distinct from depression. It could even be argued that burnout is basically a euphemism for occupational depression, with several authors claiming that burnout is a less stigmatizing label than depression (Bahlmann et al., 2013; Brower, 2021; Mehta & Edwards, 2018; Oquendo et al., 2019).

Considering burnout as a different entity from a depressive disorder may be harmful in several ways. First, it may lead to misdiagnosis and therefore mistreatment of a disorder, depression, which has plenty of empirically backed efficacious treatments (Cuijpers et al., 2020), magnifying the risk of chronification, worsening of symptoms and even suicide. Second, it perpetuates the stigma surrounding depression, neglecting one of the leading causes of disability worldwide, increasing its economic and social cost (Friedrich, 2017; Greenberg et al., 2021). Third, it hinders psychology research in occupational health, drawing attention to a construct without proper solid theoretical grounding (Schonfeld & Bianchi, 2022) nor clinically valid diagnostic criteria (Bianchi et al., 2015), based on poor quality of empirical data. Finally, it strengthens the interpretation of psychopathology through a categorical rather than dimensional model, steering research and practice further away from promising models such as the hierarchical taxonomy of psychopathology (HiTOP) (Kotov et al., 2017) or the research domain criteria (RDoC) (Cuthbert, 2014).

Results of this review should be considered with caution due to some inherent limitations: First, it was carried by one researcher alone, leaving no room for disagreement and debate when it came to inclusion of the articles. Because of this, it is possible that some relevant articles were not included. Second, longitudinal studies addressing the burnout-depression relationship are scarce, with only 6 out of 56 articles following this design, leaving questions open about the causality of some factors influencing the burnout-depression relationship. Third, few studies directly tackled the overlap between both entities, with most of them solely establishing correlations between them or their components. Forth, most samples where

convenience samples mainly comprised of teachers or healthcare workers, limiting the external validity of the findings to other populations. Finally, when it comes to measuring tools there was a clear overrepresentation of the MBI and its variants, which were used in 66% of included studies, and the PHQ and its variants, which were used in 49% of included studies. This is problematic for the MBI, as beforementioned, due to concerns about the validity of its 3 factor model, and for the PHQ since its creation was funded by the world-leading pharmaceutical company Pfizer and therefore may not be clear of conflict of interests (Kroenke et al., 2001). In both cases, this situation gives little space for different conceptualizations of burnout and depression proposed by other measuring tools to be represented in the results.

Conclusions

1. Burnout does not seem to constitute a syndrome independent of the depressive continuum, with indistinguishable biological and psychological markers or profiles.
2. Burnout may be better addressed as occupational depression, but not a work-exclusive experience.
3. Plenty of burnout-depression research seems methodologically flawed, mainly due to doubts concerning the validity of the 3-factor model of its gold standard measure, the MBI.
4. Presenting burnout as a different entity from depression is misleading and potentially harmful.

References

- *Abhiram, K., Tan, B. Y. Q., Tan, M., Tan, L., Sia, C.-H., Chua, Y. X., Lim, L. J. H., Suppiah, C. M., Sim, K., Chan, Y. H., & Ooi, S. B. S. (2022). The effect of COVID-19 endemicity on the mental health of health workers. *Journal of the American Medical Directors Association*, 23(3), 405-413.e3. <https://doi.org/10.1016/j.jamda.2022.01.059>
- *Alkhamees, A. A., Assiri, H., Alharbi, H. Y., Nasser, A., & Alkhamees, M. A. (2021). Burnout and depression among psychiatry residents during COVID-19 pandemic. *Human Resources for Health*, 19(1), 46. <https://doi.org/10.1186/s12960-021-00584-1>
- Bahlmann, J., Angermeyer, M. C., & Schomerus, G. (2013). „Burnout“ statt „depression“ – eine strategie zur vermeidung von stigma? *Psychiatrische Praxis*, 40(2), 78–82. <https://doi.org/10.1055/s-0032-1332891>
- *Bai, S., Chang, Q., Yao, D., Zhang, Y., Wu, B., & Shan, L. (2022). The prevalence and risk factors for major depression and suicidal ideation in medical residents based on a large multi-center cross-sectional study using the propensity score-matched method. *Social Psychiatry and Psychiatric Epidemiology*, 57(11), 2279–2291. <https://doi.org/10.1007/s00127-022-02351-6>
- *Bauernhofer, K., Bassa, D., Canazei, M., Jiménez, P., Paechter, M., Papousek, I., Fink, A., & Weiss, E. M. (2018). Subtypes in clinical burnout patients enrolled in an employee rehabilitation program: Differences in burnout profiles, depression, and recovery/resources-stress balance. *BioMed Central Psychiatry*, 18(1), 10. <https://doi.org/10.1186/s12888-018-1589-y>
- *Bianchi, R. (2020). Do burnout and depressive symptoms form a single syndrome? Confirmatory factor analysis and exploratory structural equation modeling bifactor analysis. *Journal of Psychosomatic Research*, 131, 109954. <https://doi.org/10.1016/j.jpsychores.2020.109954>
- *Bianchi, R., Laurent, E., Schonfeld, I. S., Bietti, L. M., & Mayor, E. (2018a). Memory bias toward emotional information in burnout and depression. *Journal of Health Psychology*, 25(10–11), 1567–1575. <https://doi.org/10.1177/1359105318765621>

- *Bianchi, R., Laurent, E., Schonfeld, I. S., Verkuilen, J., & Berna, C. (2018b). Interpretation bias toward ambiguous information in burnout and depression. *Personality and Individual Differences, 135*, 216–221. <https://doi.org/10.1016/j.paid.2018.07.028>
- *Bianchi, R., Rolland, J.-P., & Salgado, J. F. (2018c). Burnout, depression, and borderline personality: A 1,163-participant study. *Frontiers in Psychology, 8*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2017.02336>
- Bianchi, R., & Schonfeld, I. S. (2020). The Occupational Depression Inventory: A new tool for clinicians and epidemiologists. *Journal of Psychosomatic Research, 138*, 110249. <https://doi.org/10.1016/j.jpsychores.2020.110249>
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (2015). Burnout: Absence of binding diagnostic criteria hampers prevalence estimates. *International Journal of Nursing Studies, 52*(3), 789–790. <https://doi.org/10.1016/j.ijnurstu.2014.12.008>
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (2017). Physician burnout is better conceptualised as depression. *The Lancet, 389*(10077), 1397–1398. [https://doi.org/10.1016/S0140-6736\(17\)30897-8](https://doi.org/10.1016/S0140-6736(17)30897-8)
- *Bianchi, R., Schonfeld, I., & Verkuilen, J. (2020). A five-sample confirmatory factor analytic study of burnout-depression overlap. *Journal of Clinical Psychology, 76*, 801–821. <https://doi.org/10.1002/jclp.22927>
- Brower, K. J. (2021). Professional stigma of mental health issues: Physicians are both the cause and solution. *Academic Medicine, 96*(5), 635. <https://doi.org/10.1097/ACM.0000000000003998>
- *Capone, V., Joshanloo, M., & Park, M. S.-A. (2019). Burnout, depression, efficacy beliefs, and work-related variables among school teachers. *International Journal of Educational Research, 95*, 97–108. <https://doi.org/10.1016/j.ijer.2019.02.001>
- *Cheng, J., Zhao, Y. Y., Wang, J., & Sun, Y. H. (2019). Academic burnout and depression of Chinese medical students in the pre-clinical years: The buffering hypothesis of resilience and social support. *Psychology, Health & Medicine, 25*(9), 1094–1105. <https://doi.org/10.1080/13548506.2019.1709651>

- *Chigerwe, M., Barter, L., Dechant, J. E., Dear, J. D., & Boudreaux, K. A. (2021). A preliminary study on assessment of wellbeing among veterinary medical house officers. *PLOS ONE*, *16*(6), e0253111. <https://doi.org/10.1371/journal.pone.0253111>
- *Chohan, L., Dewa, C. S., El-Badrawy, W., & Nainar, S. M. H. (2020). Occupational burnout and depression among paediatric dentists in the United States. *International Journal of Paediatric Dentistry*, *30*(5), 570–577. <https://doi.org/10.1111/ipd.12634>
- *Chowdhury, S. R., Kabir, H., Mazumder, S., Akter, N., Chowdhury, M. R., & Hossain, A. (2022). Workplace violence, bullying, burnout, job satisfaction and their correlation with depression among Bangladeshi nurses: A cross-sectional survey during the COVID-19 pandemic. *PLOS ONE*, *17*(9), e0274965. <https://doi.org/10.1371/journal.pone.0274965>
- Cuijpers, P., Noma, H., Karyotaki, E., Vinkers, C. H., Cipriani, A., & Furukawa, T. A. (2020). A network meta-analysis of the effects of psychotherapies, pharmacotherapies and their combination in the treatment of adult depression. *World Psychiatry*, *19*(1), 92–107. <https://doi.org/10.1002/wps.20701>
- Cuthbert, B. N. (2014). The RDoC framework: Facilitating transition from ICD/DSM to dimensional approaches that integrate neuroscience and psychopathology. *World Psychiatry*, *13*(1), 28–35. <https://doi.org/10.1002/wps.20087>
- *de Mélo Silva Júnior, M. L., Valença, M. M., & Rocha-Filho, P. A. S. (2022). Individual and residency program factors related to depression, anxiety and burnout in physician residents – a Brazilian survey. *BioMed Central Psychiatry*, *22*(1), 272. <https://doi.org/10.1186/s12888-022-03916-0>
- Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, *30*(1), 159–165. <https://doi.org/10.1111/j.1540-4560.1974.tb00706.x>
- Friedrich, M. J. (2017). Depression is the leading cause of disability around the world. *Journal of American Medical Association*, *317*(15), 1517. <https://doi.org/10.1001/jama.2017.3826>

- *Gérain, P., & Zech, E. (2022). A harmful care: The association of informal caregiver burnout with depression, subjective health, and violence. *Journal of Interpersonal Violence*, 37(11–12), NP9738–NP9762. <https://doi.org/10.1177/0886260520983259>
- Greenberg, P. E., Fournier, A.-A., Sisitsky, T., Simes, M., Berman, R., Koenigsberg, S. H., & Kessler, R. C. (2021). The economic burden of adults with major depressive disorder in the United States (2010 and 2018). *Pharmacoeconomics*, 39(6), 653–665. <https://doi.org/10.1007/s40273-021-01019-4>
- *Guastello, A. D., Brunson, J. C., Sambuco, N., Dale, L. P., Tracy, N. A., Allen, B. R., & Mathews, C. A. (2022). Predictors of professional burnout and fulfilment in a longitudinal analysis on nurses and healthcare workers in the COVID-19 pandemic. *Journal of Clinical Nursing*, 0, 1-16. <https://doi.org/10.1111/jocn.16463>
- Guseva Canu, I., Marca, S. C., Dell’Oro, F., Balázs, Á., Bergamaschi, E., Besse, C., Bianchi, R., Bislimovska, J., Koscec Bjelajac, A., Bugge, M., Busneag, C. I., Çağlayan, Ç., Cernițanu, M., Costa Pereira, C., Dernovšček Hafner, N., Droz, N., Eglite, M., Godderis, L., Gündel, H., ... Wahlen, A. (2021). Harmonized definition of occupational burnout: A systematic review, semantic analysis, and Delphi consensus in 29 countries. *Scandinavian Journal of Work, Environment & Health*, 47(2), 95–107. <https://doi.org/10.5271/sjweh.3935>
- Haslam, N., Holland, E., & Kuppens, P. (2012). Categories versus dimensions in personality and psychopathology: A quantitative review of taxometric research. *Psychological Medicine*, 42(5), 903–920. <https://doi.org/10.1017/S0033291711001966>
- *Hatch, D. J., Potter, G. G., Martus, P., Rose, U., & Freude, G. (2019). Lagged versus concurrent changes between burnout and depression symptoms and unique contributions from job demands and job resources. *Journal of Occupational Health Psychology*, 24, 617–628. <https://doi.org/10.1037/ocp0000170>
- Hengartner, M. P., & Lehmann, S. N. (2017). Why psychiatric research must abandon traditional diagnostic classification and adopt a fully dimensional scope: Two solutions

to a persistent problem. *Frontiers in Psychiatry*, 8, 101.

<https://doi.org/10.3389/fpsy.2017.00101>

- Hodson, G. (2021). Construct jangle or construct mangle? Thinking straight about (nonredundant) psychological constructs. *Journal of Theoretical Social Psychology*, 5(4), 576–590. <https://doi.org/10.1002/jts5.120>
- Horwitz, A. V., & Grob, G. N. (2016). The troubled history of psychiatry's quest for specificity. *Journal of Health Politics, Policy and Law*, 41(4), 521–539. <https://doi.org/10.1215/03616878-3620797>
- *Huo, L., Zhou, Y., Li, S., Ning, Y., Zeng, L., Liu, Z., Qian, W., Yang, J., Zhou, X., Liu, T., & Zhang, X. Y. (2021). Burnout and its relationship with depressive symptoms in medical staff during the COVID-19 epidemic in China. *Frontiers in Psychology*, 12, 616369. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.616369>
- *Hwang, E., & Kim, J. (2022). Factors affecting academic burnout of nursing students according to clinical practice experience. *BioMed Central Medical Education*, 22(1), 346. <https://doi.org/10.1186/s12909-022-03422-7>
- *Jiang, S., Ren, Q., Jiang, C., & Wang, L. (2021). Academic stress and depression of Chinese adolescents in junior high schools: Moderated mediation model of school burnout and self-esteem. *Journal of Affective Disorders*, 295, 384–389. <https://doi.org/10.1016/j.jad.2021.08.085>
- Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M., Brown, T. A., Carpenter, W. T., Caspi, A., Clark, L. A., Eaton, N. R., Forbes, M. K., Forbush, K. T., Goldberg, D., Hasin, D., Hyman, S. E., Ivanova, M. Y., Lynam, D. R., Markon, K., ... Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, 126, 454–477. <https://doi.org/10.1037/abn0000258>
- *Koutsimani, P., & Montgomery, A. (2022). Cognitive functioning in non-clinical burnout: Using cognitive tasks to disentangle the relationship in a three-wave longitudinal study.

Frontiers in Psychiatry, 13, 978566.

<https://www.frontiersin.org/articles/10.3389/fpsy.2022.978566>

Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology, 10*, 284. <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00284>

*Koutsimani, P., Montgomery, A., Masoura, E., & Panagopoulou, E. (2021). Burnout and cognitive performance. *International Journal of Environmental Research and Public Health, 18*(4), 2145. <https://doi.org/10.3390/ijerph18042145>

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9. *Journal of General Internal Medicine, 16*(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>

*Kwak, E.-J., Ji, Y.-A., Baek, S.-H., & Baek, Y. S. (2021). High levels of burnout and depression in a population of senior dental students in a school of dentistry in Korea. *Journal of Dental Sciences, 16*(1), 65–70. <https://doi.org/10.1016/j.jds.2020.07.009>

*Larysz, A., Prokopowicz, A., Zakliczyński, M., & Uchmanowicz, I. (2021). Occurrence of professional burnout and severity of depressive symptoms among cardiac nurses: A cross-sectional study. *International Journal of Environmental Research and Public Health, 18*(22), Article 22. <https://doi.org/10.3390/ijerph182212038>

Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes, 112*(2), 112–125. <https://doi.org/10.1016/j.obhdp.2010.02.003>

*Li, S., Li, Y., Lv, H., Jiang, R., Zhao, P., Zheng, X., Wang, L., Li, J., & Mao, F. (2020). The prevalence and correlates of burnout among Chinese preschool teachers. *BioMed Central Public Health, 20*(1), 160. <https://doi.org/10.1186/s12889-020-8287-7>

*Luceño-Moreno, L., Talavera-Velasco, B., & Martín-García, J. (2022). Predictors of burnout in female nurses during the COVID-19 pandemic. *International Journal of Nursing Practice, 28*(5), e13084. <https://doi.org/10.1111/ijn.13084>

- *Martínez, J. P., Méndez, I., Ruiz-Esteban, C., Fernández-Sogorb, A., & García-Fernández, J. M. (2020). Profiles of burnout, coping strategies and depressive symptomatology. *Frontiers in Psychology, 11*, 591.
<https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00591>
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry, 15*(2), 103–111.
<https://doi.org/10.1002/wps.20311>
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*(1), 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- *Mbanga, C., Makebe, H., Tim, D., Fonkou, S., Toukam, L., & Njim, T. (2019). Burnout as a predictor of depression: A cross-sectional study of the sociodemographic and clinical predictors of depression amongst nurses in Cameroon. *BioMed Central Nursing, 18*(1), 50. <https://doi.org/10.1186/s12912-019-0377-4>
- Mehta, S. S., & Edwards, M. L. (2018). Suffering in silence: Mental health stigma and physicians' licensing fears. *American Journal of Psychiatry Residents' Journal, 13*(11), 2–4. <https://doi.org/10.1176/appi.ajp-rj.2018.131101>
- Meier, S. T., & Kim, S. (2022). Meta-regression analyses of relationships between burnout and depression with sampling and measurement methodological moderators. *Journal of Occupational Health Psychology, 27*, 195–206. <https://doi.org/10.1037/ocp0000273>
- *Mikolajczak, M., Gross, J. J., Stinglhamber, F., Lindahl Norberg, A., & Roskam, I. (2020). Is parental burnout distinct from job burnout and depressive symptoms? *Clinical Psychological Science, 8*(4), 673–689. <https://doi.org/10.1177/2167702620917447>
- *Misiólek-Marín, A., Soto-Rubio, A., Misiólek, H., & Gil-Monte, P. (2020). Influence of burnout and feelings of guilt on depression and health in anesthesiologists. *International Journal of Environmental Research and Public Health, 17*, 9267.
<https://doi.org/10.3390/ijerph17249267>
- *Naidoo, T., Tomita, A., & Paruk, S. (2020). Burnout, anxiety and depression risk in medical doctors working in KwaZulu-Natal Province, South Africa: Evidence from a multi-site

- study of resource-constrained government hospitals in a generalised HIV epidemic setting. *PLOS ONE*, *15*(10), e0239753. <https://doi.org/10.1371/journal.pone.0239753>
- *O'Higgins, M., Rojas, L. A., Echeverria, I., Roselló-Jiménez, L., Benito, A., & Haro, G. (2022). Burnout, psychopathology and purpose in life in healthcare workers during COVID-19 pandemic. *Frontiers in Public Health*, *10*, 926328. <https://doi.org/10.3389/fpubh.2022.926328>
- Oquendo, M. A., Bernstein, C. A., & Mayer, L. E. S. (2019). A key differential diagnosis for physicians—Major depression or burnout? *Journal of American Medical Association Psychiatry*, *76*(11), 1111–1112. <https://doi.org/10.1001/jamapsychiatry.2019.1332>
- *Ortega-Campos, E., Cañadas-De la Fuente, G. A., Albendín-García, L., Gómez-Urquiza, J. L., Monsalve-Reyes, C., & de la Fuente-Solana, E. I. (2019). A multicentre study of psychological variables and the prevalence of burnout among primary health care nurses. *International Journal of Environmental Research and Public Health*, *16*(18), 3242. <https://doi.org/10.3390/ijerph16183242>
- Østergaard, S. D., Jensen, S. O. W., & Bech, P. (2011). The heterogeneity of the depressive syndrome: When numbers get serious. *Acta Psychiatrica Scandinavica*, *124*(6), 495–496. <https://doi.org/10.1111/j.1600-0447.2011.01744.x>
- *Pachi, A., Sikaras, C., Ilias, I., Panagiotou, A., Zyga, S., Tsironi, M., Baras, S., Tsitrouli, L.-A., & Tselebis, A. (2022). Burnout, depression and sense of coherence in nurses during the pandemic crisis. *Healthcare*, *10*(1), 134. <https://doi.org/10.3390/healthcare10010134>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal*, *372*, 71. <https://doi.org/10.1136/bmj.n71>

- *Parker, G., & Tavella, G. (2021). Distinguishing burnout from clinical depression: A theoretical differentiation template. *Journal of Affective Disorders, 281*, 168–173. <https://doi.org/10.1016/j.jad.2020.12.022>
- *Pei, J., Wang, X., Chen, H., Zhang, H., Nan, R., Zhang, J., & Dou, X. (2021). Alexithymia, social support, depression, and burnout among emergency nurses in China: A structural equation model analysis. *BMC Nursing, 20*(1), 194. <https://doi.org/10.1186/s12912-021-00702-3>
- *Plieger, T., Melchers, M., Felten, A., Lieser, T., Meermann, R., & Reuter, M. (2019). Moderator effects of life stress on the association between MAOA-uVNTR, depression, and burnout. *Neuropsychobiology, 78*(2), 86-94. <https://doi.org/10.1159/000499085>
- *Rothe, N., Schulze, J., Kirschbaum, C., Buske-Kirschbaum, A., Penz, M., Wekenborg, M. K., & Walther, A. (2020). Sleep disturbances in major depressive and burnout syndrome: A longitudinal analysis. *Psychiatry Research, 286*, 112868. <https://doi.org/10.1016/j.psychres.2020.112868>
- *Sánchez-Rodríguez, R., Orsini, É., Laflaquière, E., Callahan, S., & Séjourné, N. (2019). Depression, anxiety, and guilt in mothers with burnout of preschool and school-aged children: Insight from a cluster analysis. *Journal of Affective Disorders, 259*, 244–250. <https://doi.org/10.1016/j.jad.2019.08.031>
- *Schonfeld, I., & Bianchi, R. (2022). Distress in the Workplace: Characterizing the relationship of burnout measures to the Occupational Depression Inventory. *International Journal of Stress Management, 29*, 253–259. <https://doi.org/10.1037/str0000261>
- *Seo, J.-H., & Kim, H.-K. (2022). What is the burnout of mothers with infants and toddlers during the COVID-19 pandemic? In relation to parenting stress, depression, and parenting efficacy. *International Journal of Environmental Research and Public Health, 19*(7), 4291. <https://doi.org/10.3390/ijerph19074291>
- *Serrão, C., Duarte, I., Castro, L., & Teixeira, A. (2021). Burnout and depression in Portuguese healthcare workers during the COVID-19 pandemic—The mediating role of

- psychological resilience. *International Journal of Environmental Research and Public Health*, 18(2), 636. <https://doi.org/10.3390/ijerph18020636>
- Shaffer, J. A., DeGeest, D., & Li, A. (2016). Tackling the problem of construct proliferation: A guide to assessing the discriminant validity of conceptually related constructs. *Organizational Research Methods*, 19(1), 80–110. <https://doi.org/10.1177/1094428115598239>
- *Simpkin, A., Khan, A., West, D., Garcia, B., Sectish, T., Spector, N., & Landrigan, C. (2018). Stress from uncertainty and resilience among depressed and burned out residents: A cross-sectional study. *Academic Pediatrics*, 18(6), 698-704. <https://doi.org/10.1016/j.acap.2018.03.002>
- *Sowden, J. F., Schonfeld, I. S., & Bianchi, R. (2022). Are Australian teachers burned-out or depressed? A confirmatory factor analytic study involving the Occupational Depression Inventory. *Journal of Psychosomatic Research*, 157, 110783. <https://doi.org/10.1016/j.jpsychores.2022.110783>
- *Szwamel, K., Kaczorowska, A., Lepsy, E., Mroczek, A., Golachowska, M., Mazur, E., & Panczyk, M. (2022). Predictors of the occupational burnout of healthcare workers in Poland during the COVID-19 pandemic: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 19(6), 3634. <https://doi.org/10.3390/ijerph19063634>
- *Tavella, G., Hadzi-Pavlovic, D., & Parker, G. (2021). Burnout: Redefining its key symptoms. *Psychiatry Research*, 302, 114023. <https://doi.org/10.1016/j.psychres.2021.114023>
- *Tavella, G., & Parker, G. (2020). Distinguishing burnout from depression: An exploratory qualitative study. *Psychiatry Research*, 291, 113212. <https://doi.org/10.1016/j.psychres.2020.113212>
- *Trigo, T. R., Freitas, C. C. S. de, Wang, Y.-P., Ribeiro, F. G., de Lucia, M. C. S., Siqueira, J. O., Iosifescu, D. V., Hallak, J. E. C., & Fraguas, R. (2018). The influence of depression on the psychometric properties of the Maslach Burnout Inventory–Human Services

- Survey: A cross-sectional study with nursing assistants. *Frontiers in Psychiatry*, 9, 695.
<https://doi.org/10.3389/fpsy.2018.00695>
- *Valente, M. do S. da S., Wang, Y.-P., & Menezes, P. R. (2018). Structural validity of the Maslach Burnout Inventory and influence of depressive symptoms in banking workplace: Unfastening the occupational conundrum. *Psychiatry Research*, 267, 168–174. <https://doi.org/10.1016/j.psychres.2018.05.069>
- *Verkuilen, J., Bianchi, R., Schonfeld, I. S., & Laurent, E. (2020). Burnout–depression overlap: Exploratory structural equation modeling bifactor analysis and network analysis. *Assessment*, 28(6), 1583–1600. <https://doi.org/10.1177/1073191120911095>
- *Wekenborg, M. K., Hill, L. K., Thayer, J. F., Penz, M., Wittling, R. A., & Kirschbaum, C. (2019a). The longitudinal association of reduced vagal tone with burnout. *Psychosomatic Medicine*, 81(9), 791. <https://doi.org/10.1097/PSY.0000000000000750>
- *Wekenborg, M. K., von Dawans, B., Hill, L. K., Thayer, J. F., Penz, M., & Kirschbaum, C. (2019b). Examining reactivity patterns in burnout and other indicators of chronic stress. *Psychoneuroendocrinology*, 106, 195–205.
<https://doi.org/10.1016/j.psyneuen.2019.04.002>
- *Zakeri, M. A., Rahiminezhad, E., Salehi, F., Ganjeh, H., & Dehghan, M. (2021). Burnout, anxiety, stress, and depression among Iranian nurses: Before and during the first wave of the COVID-19 pandemic. *Frontiers in Psychology*, 12, 789737.
<https://www.frontiersin.org/articles/10.3389/fpsyg.2021.789737>
- *Zhou, W., Pu, J., Zhong, X., Yang, W., Teng, T., Fan, L., Wang, H., Tian, L., Liu, Y., & Xie, P. (2021). Overlap of burnout-depression symptoms among Chinese neurology graduate students in a national cross-sectional study. *BioMed Central Medical Education*, 21(1), 83. <https://doi.org/10.1186/s12909-021-02511-3>
- Zimmerman, M., Ellison, W., Young, D., Chelminski, I., & Dalrymple, K. (2015). How many different ways do patients meet the diagnostic criteria for major depressive disorder? *Comprehensive Psychiatry*, 56, 29–34.
<https://doi.org/10.1016/j.comppsy.2014.09.007>

*Zisook, S., Doran, N., Mortali, M., Hoffman, L., Downs, N., Davidson, J., Ferguson, B., Rubanovich, C. K., Shapiro, D., Tai-Seale, M., Iglewicz, A., Nestsiarovich, A., & Moutier, C. Y. (2022). Relationship between burnout and major depressive disorder in health professionals: A HEAR report. *Journal of Affective Disorders*, *312*, 259–267. <https://doi.org/10.1016/j.jad.2022.06.047>

Appendix

Table 1

Summary of the main characteristics of the reviewed studies.

Study	Design	Sample	Burnout measure	Depression measure	Result
Abhiram et al. (2022)	Longitudinal	n = 1475 75% female Healthcare workers	OLBI	HADS	Burnout and depression increased with stress. Depression risk predicted burnout increase ($OR = 4,85$)
Alkhamees et al. (2021)	Cross-sectional	n = 121 42% female Psychiatry residents	MBI-HSS	PHQ-9	Burnout increased risk of depressive symptoms 9 times. EE, DP, and PE high scores were significant predictors of depressive symptoms ($OR = 9.74, 12.32, 4.4$, respectively)
Bai et al. (2022)	Cross-sectional	n = 1343 68% female Medical residents	MBI-GS	PHQ-9	EE, DP, and PE were risk factors for depression ($OR = 1.12, 1.09, 0.96$, respectively).
Bauernhofer et al. (2018)	Cross-sectional	n = 103 64% female Burnout patients	MBI-GS	BDI	Burnout participants reported more severe depressive symptoms.
Bianchi (2020)	Cross-sectional	n = 332 65% female Workers (various fields)	SMBM	PHQ-9	Burnout symptoms do not form a unified, non-depressive syndrome.
Bianchi et al. (2018a)	Cross-sectional	n = 1056 83% female Workers (various fields)	SMBM	PHQ-9	Burnout and depression increase the negative interpretation of ambiguous information.
Bianchi et al. (2018b)	Cross-sectional	n = 1163 81% female Teachers	SMBM	PHQ-9	Burnout positively correlated with depression ($r = 0.94$). Burnout symptoms were not exclusively work-induced.
Bianchi et al. (2018c)	Cross-sectional	n = 1015 89% female Teachers	SMBM	PHQ-9	Burnout and depression produced a negative bias on memory. Burnout positively correlated with depression ($r = 0.73$).

Bianchi et al. (2020)	Cross-sectional	n = 3113 79% female Workers (various fields)	SMBM + MBI-GS + MBI-ES	PHQ-9	Burnout components had weaker correlations within themselves than with depression. Burnout and depression loaded in a general factor.
Capone et al. (2019)	Cross-sectional	n = 609 76% female Teachers	MBI-GS	CES-D	Burnout mediated the relationship between organizational variables and depression.
Cheng et al. (2019)	Cross-sectional	n = 1722 50% female Medical students	LBSU	BDI-II	Depression positively correlated with burnout ($r = 0.37$). Resilience moderated the relationship between burnout and depression.
Chigerwe et al. (2021)	Cross-sectional	n = 103 84% female Veterinarians	MBI-HSS	PHQ-9	EE, DP, and PE correlated with depression ($r = 0.59, 0.47, -0.49$, respectively).
Chohan et al. (2020)	Cross-sectional	n = 540 53% female Dentists	MBI-HSS	PHQ-8	EE, DP, and PE correlated with depression ($r = 0.66, 0.49, -0.29$, respectively).
Chowdhury et al. (2022)	Cross-sectional	n = 1264 70% female Nurses	BMS-10	PHQ-9	Burnout positively correlated with depression ($r = 0.6$).
Gérain & Zech (2021)	Cross-sectional	n = 499 88% female Informal caregivers	MBI-HSS	BDI-13	EE, DP, and PE correlated with depression ($r = 0.61, 0.41, -0.31$, respectively).
Guastello et al. (2022)	Longitudinal	n = 406 baseline, n = 234 longitudinal 82% female Healthcare workers	PFI	PHQ-8	Depression was a risk factor for burnout.
Hatch et al. (2019)	Longitudinal	n = 402 93% female Nurses	OLBI	PHQ-9	Burnout positively correlated with depression ($r = 0.57$). Burnout and depression symptoms changed in tandem.
Huo et al. (2021)	Cross-sectional	n = 606 81% female Healthcare workers	MBI-GS	PHQ-9	EE, DP, and PE correlated with depression ($r = 0.57, 0.37, -0.41$, respectively).

Hwang & Kim (2022)	Cross-sectional	n = 171 100% female Nursing students	CESDS	MBI-SS	Burnout positively correlated with depression ($r = 0.44$).
Jiang et al. (2021)	Cross-sectional	n = 552 53% female High school students	SBI	BSI	Burnout positively correlated with depression ($r = 0.44$). Burnout mediated the relationship between stress and depression.
Koutsimani & Montgomery (2022)	Longitudinal	n = 104 at baseline, n = 55 longitudinal 77% female Workers (various fields)	MBI-GS	HADS	Burnout and depression were reciprocally associated.
Koutsimani et al. (2021)	Cross-sectional	n = 104 77% female Workers (various fields)	MBI-GS	HADS	Burnout was not associated with cognitive performance. EE, DP, and PE correlated with depression ($r = 0.41, 0.45, -0.33$, respectively).
Kwak et al. (2021)	Cross-sectional	n = 112 44% female Dental students	MBI-HSS	PHQ-9	EE, DP, and PE correlated with depression ($r = 0.63, 0.46, -0.2$, respectively).
Larysz et al. (2021)	Cross-sectional	n = 400 90% female Nurses	MBI-GS	PHQ-9 + BDI	EE, DP, and PE correlated with depression ($r = 0.5, 0.42, -0.27$, respectively for PHQ-9; $r = 0.45, 0.41, -0.18$, respectively for BDI).
Li et al. (2020)	Cross-sectional	n = 1741 92% female Teachers	MBI-GS	CES-D	Depression was associated with burnout ($OR = 3.1$).
Luceño-Moreno et al. (2022)	Cross-sectional	n = 444 100% female Nurses	MBI-HSS	HADS	Depression was a risk factor for burnout.
Martínez et al. (2020)	Cross-sectional	n = 215 57% female Teachers	MBI-GS	SDS	Different burnout profiles interacted differently with depression.
Mbanga et al. (2019)	Cross-sectional	n = 143 67% female Nurses	OLBI	PHQ-9	Burnout predicted depression ($OR = 1.21$).

Mikolajczak et al. (2020)	Cross-sectional	n = 2608 79% female Parents	MBI-GS + PBI	PHQ-8	Burnout was factorially distinct from depressive symptoms.
Misiolek-Marín et al. (2020)	Cross-sectional	n = 372 58% female Anesthesiologists	SpBI	BDI	Depression was higher in burnout with high guilt.
Naidoo et al. (2020)	Cross-sectional	n = 150 56% female Doctors	MBI-HSS	PHQ-9	Burnout was associated with depression ($OR = 18,83$).
O'Higgins et al. (2022)	Cross-sectional	n = 115 65% female Healthcare workers	MBI-HSS	BDI-II	Burnout was associated with depression ($OR = 0.26$).
Ortega-Campos et al. (2019)	Cross-sectional	n = 338 58% female Nurses	MBI-GS	CECAD	EE, DP, and PE correlated with depression ($r = 0.69, 0.48, -0.45$, respectively)
Pachi et al. (2022)	Cross-sectional	n = 660 85% female Nurses	CBI	BDI	Almost half of the variation in burnout was explained by depression. Burnout positively correlated with depression ($r = 0.66$).
Parker & Tavella (2021)	Qualitative	n = 1019 75% female Workers and students (various fields)	Self-report	Self-report	Burnout and depression are independent, but coterminous.
Pei et al. (2021)	Cross-sectional	n = 413 89% female Nurses	MBI-GS	BDI-II	Burnout positively correlated with depression ($r = 0.5$).
Plieger et al. (2019)	Cross-sectional	n = 1541 63% female Workers (various fields)	MBI-GS	BDI-II	MAO-H allele carriers reported higher burnout and depression.
Rothe et al. (2020)	Longitudinal	n = 4415 at baseline, n = 1396 longitudinal 63% female	MBI-GS	PHQ-9	Burnout and depression hindered sleep quality.

Workers (various fields)					
Sánchez-Rodríguez et al. (2019)	Cross-sectional	n = 210 100% female Mothers	BMS-10	HADS	Some burnout profiles reported low levels of depression.
Schonfeld & Bianchi (2022)	Cross-sectional	n = 1942 83% female Teachers	MBI-ES + CBI	ODI	EE, DP, and PE correlated with depression ($r = 0.8, 0.33, -0.44$, respectively) A general factor explained most of the common variance.
Seo & Kim (2022)	Cross-sectional	n = 105 100% female Mothers	MBI-GS	PHQ-9	Burnout positively correlated with depression ($r = 0.58$).
Serrão et al. (2021)	Cross-sectional	n = 2008 84% female Healthcare workers	CBI	DASS-21	Resilience mediated the relationship between burnout and depression.
Silva Jr et al. (2022)	Cross-sectional	n = 1419 61% female Medical residents	MBI-GS	PHQ-9	Burnout positively correlated with depression ($r = 0.33$).
Simpkin et al. (2018)	Cross-sectional	n = 86 62% female Medical residents	MBI-GS	HANDS	Stress from uncertainty was associated with burnout and depression.
Sowden et al. (2022)	Cross-sectional	n = 891 93% Teachers	SMBM	ODI	Burnout components had weaker correlations within themselves than with depression.
Szwamel et al. (2022)	Cross-sectional	n = 497 89% female Healthcare workers	MBI-GS	HADS	Depression was a risk factor for burnout.
Tavella & Parker (2020)	Qualitative	n = 1019 75% female Workers and students (various fields)	Self-report	Self-report	Depression and burnout were indistinguishable for 22% of subjects.
Tavella et al. (2021)	Cross-sectional	n = 622 78% female	MBI-HSS + MBI-GS	PHQ-9 + HDRS +	The MBI factor model was not optimal for burnout measure. A general factor explained 85% of burnout variance.

		Workers (various fields)		MADRS-S + BDI	
Trigo et al. (2018)	Cross-sectional	n = 521 91% female Nurses	MBI-HSS	PRIME-MD	The MBI factor model was not optimal for burnout measure. Major depressive disorder hindered the construct validity of the MBI.
Valente et al. (2018)	Cross-sectional	n = 1046 45% female Bank workers	MBI-HSS	PHQ-9	The MBI factor model was not optimal for burnout measure. EE, DP, and PE correlated with depression ($r = 0.59, 0.43, -0.28$, respectively)
Verkuilen et al. (2020)	Cross-sectional	n = 1258 85% female Educational workers	MBI-GS	PHQ-9 + HADS	Burnout components had weaker correlations within themselves than with depression. PHQ-9 correlated more strongly with MBI's exhaustion than with HADS. EE and depression loaded primarily on a general distress/dysphoria factor.
Wekenborg et al. (2019a)	Cross-sectional	n = 70 0% female Workers (various fields)	MBI-GS	PHQ-9	Burnout and depression were associated with blunted stress reactivity.
Wekenborg et al. (2019b)	Longitudinal	n = 167 69% female Workers (various fields)	MBI-GS	PHQ-9	Heart rate variability predicted burnout symptoms with depressive symptoms as a covariate.
Zakeri et al. (2021)	Cross-sectional	n = 242 72% female Nurses	MBI-GS	DASS-21	Depression, but not burnout, increased during the COVID-19 pandemic.
Zhou et al. (2021)	Cross-sectional	n = 1814 67% female Medical students	MBI-GS	PRIME-MD	Burnout overlapped with depression.
Zisook et al. (2022)	Cross-sectional	n = 2281 77% female Healthcare workers	MBI-GS	PHQ-9	Burnout and depression predicted distress and suicide risk.

Note. Burnout measures: aMBI = Abbreviated Maslach Burnout Inventory, BMS-10 = Burnout Measure-Short version, CBI = Copenhagen Burnout Inventory questionnaire, LBSU = Learning Burnout Scale of Undergraduates, MBI-ES = Maslach Burnout Inventory (Educators Survey), MBI-GS = Maslach Burnout Inventory (General Survey), MBI-HSS = Maslach Burnout Inventory (Human Services Survey), MBI-SS = Maslach Burnout Inventory (Student Survey), OLBI = Oldenburg Burnout Inventory, PBI = Parental Burnout Inventory, PFI = Professional Fulfillment Index, SBI = School Burnout Inventory, SMBM = Shirom-Melamed Burnout Measure, SpBI = Spanish Burnout Inventory. Depression measures: BDI = Beck Depression Inventory, BDI-II = Revised Beck Depression Inventory, BDI-13 Beck Depression Inventory short form, BSI = Brief Symptoms Inventory, CECAD = Educational-Clinical Questionnaire on Anxiety and Depression, CES-D = Center for Epidemiologic Studies Depression Scale, DASS-21 = Depression, Anxiety and Stress Scale, HADS = Hospital Anxiety and Depression Scale, HANDS = Harvard Department of Psychiatry National Depression Screening Day Scale, HDRS = Hamilton Depression Rating Scale, MADRS-S = Montgomery Åsberg Depression Rating Scale-Self Assessment, ODI = Occupational Depression Inventory, PHQ-2 = Patient's Health Questionnaire-2, PHQ-8 = Patient's Health Questionnaire-8, PHQ-9 = Patient's Health Questionnaire, PRIME-MD = Primary Care Evaluation of Mental Disorders, SDS = Self-rating Depression Scale. Burnout components: EE = Emotional Exhaustion, DP = Depersonalization, PE = Professional Efficacy.