Examining the evidence base for burnout

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Burnout has elicited growing interest among occupational health specialists in recent decades. Since 2019, the World Health Organization (WHO) has characterized burnout as a syndrome resulting from chronic, unmanageable workplace stress.[1] According to the *International statistical classification of diseases and related health problems*, eleventh revision (ICD-11), three symptoms define the entity: (i) feelings of energy depletion or exhaustion; (ii) increased mental distance from one's job or feelings of negativism or cynicism towards one's job; and (iii) a sense of ineffectiveness and lack of accomplishment. The ICD-11 includes burnout among the factors influencing health status or contact with health services.

WHO's definition of burnout closely corresponds to the definition inscribed in the Maslach Burnout Inventory, the most widely used measure of the entity.[2,3] The Maslach Burnout Inventory approaches burnout as a syndrome induced by insurmountable work-related stress that comprises symptoms of exhaustion, cynicism and inefficacy.[2] Exhaustion is considered burnout's core. Released in 1981, the Maslach Burnout Inventory was the first standardized quantitative measure of burnout.[3] The instrument consists of a questionnaire assessing the frequency of symptoms occurring over the past year. The Maslach Burnout Inventory played a key role in making burnout an object of investigation in occupational health science.

This perspective calls into question the definition of burnout embodied in the Maslach Burnout Inventory and incorporated into the ICD-11. We draw stakeholders' attention to the fact that burnout's symptoms and etiology were defined prior to any systematic research. We show that (i) exhaustion, cynicism and inefficacy do not form a cohesive syndrome; and (ii) no clear evidence exists that burnout is primarily caused by work-related stress. We discuss the implications of these findings for the status the ICD-11 grants to burnout.

A predefined entity

A review of the early burnout literature reveals that the definition of burnout reflected in the Maslach Burnout Inventory was pre-established rather than derived from rigorous and replicable research. Maslach's first paper on the issue, published in 1976, already described burnout in detail, at a time when no scientific study of burnout had been conducted. The author mentioned the fatigue, emotional overload, psychological distancing and withdrawal, cynical or negative attitudes, and sense of personal failing deemed to characterize affected individuals.[4] The exhaustion, cynicism and inefficacy components of the Maslach Burnout Inventory were thus, in essence, all there. The paper even discussed variations in burnout rates, despite the absence of diagnostic criteria that might have allowed cases of burnout to be identified and counted.[4]

In addition to detailing the symptoms of burnout, this inaugural article approached the cause of the syndrome as if it were an elucidated issue. The author elaborated on the inability to cope with job stressors as the key etiological driver of burnout. Unresolvable job stress was presented as the factor to be acted upon to defeat burnout. The article, published in a social science magazine, took the form of a narrative report in which burnout was editorially treated as an established entity. No information was provided on the validity and reliability of the modus operandi that was followed to identify the symptoms and determinants of burnout.

Papers subsequently published by Maslach and her colleagues in the late 1970s capitalized on these prenotions and disseminated them further.[5] These papers showed little anchorage in the literature on stress-related conditions available at the time. While several studies were publicized, their reporting was inadequate, making replication attempts challenging. Moreover, the reported studies were rudimentary in terms of design, measurement and data analysis. This body of work reaffirmed the authors' preconceived views of burnout instead of subjecting those views to critical scrutiny and proper testing. The publication of the Maslach Burnout Inventory in the early 1980s crystallized burnout's definition as a three-faceted syndrome induced by work-related stress.[3] The questionnaire was cobbled together by factor-analysing a pool of items infused with the above-mentioned preconceptions. The Maslach Burnout Inventory was eventually copyrighted, which made its use chargeable. The release of the instrument legitimized the burnout construct, spurring research on burnout.

An ill-defined entity

That burnout was largely predefined inevitably raises concerns about the sturdiness of the syndrome's characterization.[5,6] To this day, the reason for regarding exhaustion, cynicism and inefficacy as the signature symptoms of stressed-out workers remains unclear. Many authors have underlined that this symptom picture is clinically and theoretically ill-founded.[5] In effect, the human response to unresolvable (job) stress involves a host of symptoms calling for serious examination, such as anhedonia, dysphoria, neurovegetative and psychomotor alterations, cognitive impairment or suicidality.[6,7] The burnout construct overlooks most of these symptoms.

Researchers have further questioned the syndromal coherence of burnout .[6] As a syndrome of exhaustion, cynicism and inefficacy, burnout is deemed distinct from long-identified stress-related conditions such as depression. Yet, exhaustion typically correlates more strongly with depressive symptoms than with cynicism and inefficacy.[6] Such a pattern of results does not accord with the notion that burnout is a standalone syndrome. By

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definition, a syndrome refers to a set of co-occurring signs and symptoms. Because exhaustion co-occurs less frequently with cynicism and inefficacy than with depressive symptoms, it is unclear why cynicism and inefficacy are included in the syndrome when depressive symptoms are dismissed.

The idea that burnout primarily results from workplace stress is not better established. While numerous studies have documented links between job stressors and burnout, the most comprehensive meta-analysis available indicates that job stressors are weak predictors of burnout.[8] Moreover, no conclusive evidence exists that workplace stress more specifically predicts burnout than it predicts, for example, depression.[9] The paucity of research assessing job stressors with objective indicators further increases the uncertainty about the etiological link between job stressors and burnout. This body of findings is consistent with the limited effectiveness of organization-directed interventions for burnout.[10] The view that work-related stress is the main cause of burnout lacks support.

Given the difficulty inherent in establishing credible causal links in psychological and psychiatric research, extensive and meticulous work is generally needed to produce causal inferences with any degree of confidence. Surprisingly, the pioneers of burnout research drew immediate conclusions regarding burnout's etiology. However, the predictors of burnout are not the only source of concern. The sequelae of burnout are also open to question. For instance, although burnout is expected to severely undermine an individual's ability to work, only tenuous links between burnout and objective job performance have been documented.[11] Both ends of the burnout chain thus appear to require reconsideration.

An elusive syndrome

The confusion surrounding burnout's definition is further discernible on a diagnostic level. Despite nearly 50 years of research, no valid diagnosis for the syndrome exists.[6,12] The inability to generate and validate clear diagnostic criteria for burnout raises additional doubts about the construct's content. If exhaustion, cynicism and inefficacy formed a well-defined, cohesive syndrome, affected individuals should be identifiable. Clinicians have pointed out that burnout may simply be too loose and artificial an entity for a diagnosis to be workable.

Despite the absence of a valid diagnosis, burnout is often portrayed as rampant. The burnout epidemic narrative is based on studies that estimated burnout prevalence with arbitrary and elastic criteria.[12] The use of lenient categorization criteria has been particularly problematic. Such criteria pathologize everyday dissatisfaction and discomfort instead of targeting individuals who truly need assistance. As a result, interventional resources are likely to be misdirected, and their impact diluted.

Due to its extensive use, the burnout label may now commonly mask depressive conditions, increasing the risk of depression going underdiagnosed and untreated.[6,9] This state of affairs is concerning. Depression is associated with enormous health, social and economic costs, and can lead to suicide. The diverting effect of the burnout label thus poses a problem that is multifaceted, not least ethical.

Conclusion

Disconcerting as it may be, no clear evidence has emerged for the existence of a work-induced syndrome of exhaustion, cynicism and inefficacy, leaving burnout as a catchy but confusing label.

Multiple alternate definitions of burnout have been produced over the years. Unfortunately, these alternate definitions have inherited fundamental flaws from Maslach's preconception of burnout, such as a questionable symptom scope, a lack of clinical underpinning and an overlap with existing conditions.[6,13] Interestingly, burnout has sometimes been equated with neurasthenia, another condition marketed as a malady of modern civilization.[5,14] Neurasthenia was removed from the ICD-11 because of its vagueness and lack of clinical validity.

We call for a revision of burnout status, leveraging WHO's evidence-based procedures for consensus-building. The various stress, anxiety and depressive disorder categories available in the ICD-11 offer plenty of solutions for addressing job-related distress. However, a recommendation to investigate work-related adversity during diagnostic processes could be formally included if deemed useful. Alternatively, given the overlap of burnout with depression,[6,9] an occupational depression[13] qualifier could be added to the depressive disorder category. Whatever solution is preferred, we suggest deleting the burnout category from the ICD-11. ■

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Corrigendum

In: Khawar L, Donovan B, Peeling RW, Guy RJ, McGregor S. Elimination and eradication goals for communicable diseases: a systematic review. Bull World Health Organ. 2023 Oct 1;101(10):649–665,

the words ***threshold*** and ***target*** were used interchangeably. The word target should have been used throughout the article.

On page 657, Table 3 should read as follows:

Table 3. **Disease endpoints and targets, by goal type and infectious condition**

Goal type, by infectious condition	Disease endpoint	No. of targets	Type of target		
			No. or percentage	Rate	% reduction or fractional reduction
Worldwide permanent reduction to zero					
Dracunculiasis[16,19,22]	Cases	1	Zero	NR	NR
Polio[18,24]	Cases	1	Zero	NR	NR
Smallpox[14,15]	Cases	1	Zero	NR	NR
Yaws[16,17,20–23]	Cases	1	Zero	NR	NR
Interruption of endemic transmission					
Cholera[a,35]	Case	1	Zero, endemic, nationally	NR	NR
Leprosy[22,48,55,56]	New cases	4	Zero, new autochthonous cases, nationally. ≤ 62 500 annual new cases, globally	≤ 0.12/1 000 000 new cases with grade 2 disabilities, globally	90% reduction in new case rate in children, globally
Malaria[29,49,58,65]	Incidence	2	Zero indigenous cases, nationally	NR	90% reduction by 2030, globally
	Mortality	1	NR	NR	90% reduction by 2030, globally
Measles[28,37,38,45,50,51,59,60]	Cases	1	Zero, endemic, regionally	NR	NR
Rubella and congenital rubella syndrome[28,37,38,45,50,51,59,60]	Cases	1	Zero, endemic, regionally	NR	NR
Interruption of transmission					
Human African trypanosomiasis (gambiense)[22,68]	Cases	1	Zero, nationally	NR	NR
Onchocerciasis[22,32]	Incidence	1	NR	Zero, nationally	NR
Rabies[40,41]	Cases in dogs	1	Zero canine cases, nationally	NR	NR
Schistosomiasis[22,67]	Incidence	1	NR	Zero	NR
Elimination as a public health problem					
Chagas disease[22]	Incidence	1	Zero,[b] nationally	NR	NR
Human African trypanosomiasis (gambiense)[22,68]	Cases	2	< 2000 a year, globally	< 1/10 000 a year (in at-risk areas)	NR
Leprosy[22,48,55,56]	Prevalence	1	NR	< 1 case/10 000, nationally	NR
Lymphatic filariasis[22,25,36,57]	Prevalence	3	< 2% antigenaemia in all endemic areas[c]	NR	NR
			< 1% antigenaemia in all endemic areas[d]	NR	NR
			< 2% antibody prevalence in all endemic areas, nationally[e]	NR	NR

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Goal type, by infectious condition	Disease endpoint	No. of targets	Type of target		
			No. or percentage	Rate	% reduction or fractional reduction
Maternal and neonatal tetanus[44,66]	Incidence	1	NR	< 1/1000 live births a year per district	NR
Rabies[22,40,41]	Mortality	1	Zero human deaths, nationally	NR	NR
Human African trypanosomiasis (rhodesiense)[22,68]	Cases	1	NR	< 1/10 000 a year per district	NR
Schistosomiasis[22,67]	Prevalence	1	< 1% of heavy-intensity infections, nationally[f]	NR	NR
Soil-transmitted helminths[22,46]	Prevalence	1	< 2% of moderate-to-heavy intensity infections in pre-school and school-aged children, nationally[g]	NR	NR
Trachoma[22,33,53]	Prevalence	2	< 0.2% TT in ≥ 15-year-olds, nationally	NR	NR
			< 5% TF in children, nationally	NR	NR
Tuberculosis (low-incidence countries)[h,27,31,52]	Incidence	1	NR	< 1 case/1 000 000, nationally	NR
Viral STIs – human papillomavirus-related cervical cancer[47,54]	Incidence	2	NR	4 cases/100 000 women-years, nationally	South-East Asian Region: reduce by one third by 2030
	Mortality	1	NR	NR	South-East Asian Region: reduce by one third by 2030
Visceral leishmaniasis[22,34]	Cases	1	NR	South-East Asian Region: < 1 case/10 000	NR
	Case fatality	1	For all countries other than in South-East Asian Region: < 1%	NR	NR
Elimination of vertical transmission as a public health problem					
Chagas[22,39]	Transmission rate	1	Zero, nationally	NR	NR
	Prevalence	1	≥ 90% children cured, nationally	NR	NR
Hepatitis B virus[39,43,62,64]	Prevalence	1	≤ 0.1% HBsAG prevalence in children < 5 years, nationally	NR	NR
	Transmission rate	1	< 2%, nationally[i]	NR	NR
HIV[39,43,62,64]	New cases	1	NR	≤ 50/100 000 live births, nationally	NR
	Transmission rate	1	< 5% and < 2% in breastfeeding and non-breastfeeding countries, respectively[j]	NR	NR
Syphilis[39,43,62,64]	New cases	1	NR	≤ 50/100 000 live births, nationally	NR
Elimination as a public health threat					
Viral hepatitis B (national level targets)[63,64]	Prevalence	2	≤ 0.5% HBsAg prevalence in children 0–5 years by 2025[k]	NR	NR
			≤ 0.1% HBsAg prevalence in children 0–5 years by 2030[k]	NR	Or 95% reduction by 2030[l]
	Incidence	2	NR	≤ 11/100 000 cases a year by 2025	NR
				≤ 2/100 000 cases a year by 2030	NR
	Mortality	2	NR	≤ 7/100 000 deaths a year by 2025	NR
				≤ 4/100 000 deaths a year by 2030	Or 65% reduction by 2030[l]

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Goal type, by infectious condition	Disease endpoint	No. of targets	Type of target		
			No. or percentage	Rate	% reduction or fractional reduction
Viral hepatitis C (national level targets)[63,64]	Incidence	4	NR	≤ 13/100 000 cases a year by 2025	NR
				≤ 5/100 000 cases a year by 2030	Or 80% reduction by 2030[l]
				People who inject drugs: ≤ 3/100 a year by 2025	NR
				People who inject drugs: ≤ 2/100 a year by 2030	NR
	Mortality	2	NR	≤ 3/100 000 deaths a year by 2025	NR
				≤ 2/100 000 deaths a year by 2030	Or 65% reduction by 2030[l]
Pre-elimination					
Tuberculosis (low-incidence countries)[27,52]	Incidence	1	NR	< 10/1 000 000 cases by 2035, nationally	Or 90% reduction by 2035[l]
End of disease epidemic					
Cholera[35]	Mortality	1	≤ 9500 deaths by 2030	NR	Or 90% reduction by 2030, globally
	Outbreaks	1	Zero, uncontrolled	NR	NR
Meningitis A[61]	New cases	1	NR	NR	50% reduction by 2030, globally
	Mortality	1	NR	NR	70% reduction by 2030, globally
HIV[64]	New cases	6	All ages: ≤ 370 000/year by 2025, globally	0.05/1000 uninfected population a year	Or 75% reduction in the no. of new cases globally
			All ages: ≤ 335 000/year by 2030, globally	0.025/1000 uninfected population a year	Or 78% reduction in the no. of new cases globally[m]
			≤ 0–14 years: 20 000/year by 2025, globally	NR	Or 86% reduction, globally
			≤ 0–14 years: ≤ 15 000/year by 2030, globally	NR	Or 90% reduction, globally[m]
	Mortality	2	≤ 250 000 deaths/year by 2025, globally	NR	Or 63% reduction, globally
			< 240 000 deaths/year by 2030, globally	NR	Or >65% reduction, globally
	Mortality from comorbidity	2	≤ 110 000 deaths/year by 2025, globally[n]	NR	Or 48% reduction, globally
			≤ 55 000 deaths/year by 2030, globally[n]	NR	Or 74% reduction, globally
STIs (bacterial)[64]					
Syphilis	New cases	2	≤ 5 700 000/year by 2025, globally	NR	Or 20% reduction, globally
			≤ 710 000/year by 2030, globally	NR	Or 90% reduction, globally[m]
Gonorrhoea	New cases	2	≤ 65 800 000/year by 2025, globally	NR	Or 20% reduction, globally
			≤ 8 230 000/year by 2030, globally	NR	Or 90% reduction, globally[m]
STIs (overall): chlamydia, gonorrhoea, syphilis, trichomoniasis[64]	New cases	2	< 300 000 000/year by 2025, globally	NR	Or 20% reduction, globally
			< 150 000 000/year by 2030, globally	NR	Or 60% reduction, globally

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Goal type, by infectious condition	Disease endpoint	No. of targets	Type of target		
			No. or percentage	Rate	% reduction or fractional reduction
Tuberculosis (high-incidence countries)[o,30,31]	Incidence	2	NR	< 20/100 000 cases by 2030, nationally	Or 80% reduction, globally[l]
			NR	< 10/100 000 cases by 2035, nationally	Or 90% reduction, globally[l]
	Mortality	2	NR	NR	90% reduction by 2030, globally
					95% reduction by 2035, globally
Yellow fever[42]	Outbreaks	1	Zero, uncontrolled	NR	NR
Disease control					
Chagas disease (oral route)[16]	NR	NA	NR	NR	NR
Cutaneous leishmaniasis[22]	No impact targets for disease endpoint	NA	NR	NR	NR
Schistosomiasis[26]	Prevalence	1	< 5% heavy-intensity infections[f]	NR	NR

AIDS: acquired immunodeficiency syndrome; HBsAG: hepatitis B surface antigen; HIV: human immunodeficiency virus; NA: not applicable; NR: not reported; STIs: sexually transmitted infections; TF: trachomatous inflammation – follicular; TT: trachomatous trichiasis.

[a] The target is for 20 endemic countries to eliminate cholera.

[b] Based on four of six transmission routes, that is, vectoral, transfusion, transplantation and congenital. The other two transmission routes are oral and laboratory accidents.

[c] In areas where *Wuchereria bancrofti* is endemic and *Anopheles* or *Culex* is the main vector.

[d] In areas where *Aedes* is the main vector.

[e] In areas where *Brugia* spp. is endemic.

[f] Heavy intensity of infections: *Schistosoma mansoni* (400 eggs/g faeces, *S. haematobium* (50 eggs/10 mL urine).

[g] Caused by *Ascaris lumbricoides*, *Trichuris trichiura*, *Necator americanus* and *Ancylostoma duodenale.*

[h] For details on the impact targets for the European region, see online repository.[69]

[i] Additional target for countries using targeted timely hepatitis B vaccine birth dose.

[j] Breastfeeding countries: countries where the benefits of breastfeeding in terms of child survival outweigh the risk of HIV transmission via breastfeeding. Non-breastfeeding countries: countries where women living with HIV who give birth are strongly recommended to avoid breastfeeding due to evidence of a risk of HIV transmission via breastfeeding.

[k] Childhood prevalence is a proxy for incidence of chronic hepatitis B virus infection.

[l] For viral hepatitis, the relative reduction targets are from a 2015 baseline; while the absolute targets take the baseline of 2020, however, the relative reduction targets from a 2020 baseline can be calculated from document ref# 64; likewise, for TB, the relative reduction targets are from a 2015 baseline.

[m] From a 2020 baseline.

[n] Mortality associated with causes related to tuberculosis, hepatitis B and C.

[o] The targets can be adapted nationally depending on the baseline point.

Note: For shared targets with HIV, viral hepatitis and STIs, see online repository.[69]