

Beneath the skin: from occupational stress to mental illness

*A reported 1 billion people worldwide have struggled with their mental health, a condition that carries an undue stigma—and is likely underreported. Work demands are a salient cause. **Odessa Hamilton** writes that reducing daily burdens is critical to the health of the workforce (employers and employees). Mental health, she says, needs to become a regular discussion that can be shared without judgement or penalty, because no person is immune to it.*

Non-existent work-life balance. Difficult boss. Dysfunctional team. Impossible workload. Transit traumas. Toxic company culture. Dangerous conditions. Precarious schedules. Strenuous tasks. Underemployed. Undervalued. Underpaid. All have experienced one or more of these workplace stressors to varying degrees, but what exactly is occupational stress, what does it cost us and how does it affect our biology?

We discuss here what occurs *beneath the skin* and why reducing these daily burdens is critical to the health of the workforce (employer and employee alike!). It is accepted that the discernment, management and mitigation of psychosocial risks at work require an interdisciplinary approach ([Giorgi et al., 2018](#)). Therefore, in what follows, we synthesise a survey of evidence to orient readers on the crosstalk between occupational stress, immunity and mental illness.

Mental fragility

Mental health is a fragile thing. Anyone can lose it. Mental ill-health is prevalent among all regions of the world, without bounds nor regard to population or individual sociodemographics ([Saxena et al., 2013](#)). More than 1 billion people (16% of the population) are reported to have suffered mental illness (including addictive disorders) worldwide; accounting for 7% of all global burden of disease ([Rehm & Shield, 2019](#)). However, true incidence of mental illness remains unknown; underreporting is highly probable given its undue association with shame. Irrespective of its ubiquity, mental illness continues to be taboo, and it is this stigmatisation that reduces transparency and health-seeking behaviour ([Bharadwaj et al., 2017](#)).

While we are adept at tending to issues of physical health, we frequently ignore (or worse feel the need to hide) mental illness out of fear of penalisation. Particularly within the occupational arena where those with mental disorders are approximately seven times more likely to be unemployed ([Brouwers, 2020](#)). Still, work activities consume a significant proportion of our daily lives and yet proliferating occupational demands have become an increasingly more salient threat to mental health.

Economics of international distress

Occupational stress is psychosocial by nature; characterised as the appraisal of situational factors exceeding one's resources and endangering psychobiological integrity ([Lazarus & Folkman, 1984](#)). It is this definition that captures the experiences of a large body of people across the globe, and yet, despite its pervasive nature, occupational stress is a widely neglected influencer of mental distress. Within major global economies, occupational stress has risen to six in 10 employees ([GOS, 2019](#)). China reports the highest global incidence of workplace stress at 86% ([GOS, 2019](#)), America follows at ~80% ([APA, 2019](#)), and the UK trails marginally behind, with 75% of British adults reporting being overwhelmed by stress in occupational settings ([MHF, 2018](#)). Moreover, the proliferation of stress-induced psychomorbidities have been linked to ensuing societal and economic burdens ([McTernan et al., 2013](#)).

Occupational stress cost the Australian economy ~\$14.2 billion and came at an annual UK cost of £28.3 billion ([GOS, 2019](#)). As many as 12.8 million workdays are lost per annum as a result of stress at work, with 44% of all work-related ill-health cases and 54% of all workdays lost due to mental ill health ([HSE, 2019](#)). Taken together, it is evident that occupational stress represents a salient public concern. How long can we ignore such alarming figures? When does proverbially 'working ourselves (and our workforce) into the ground' signal insanity?

It is commonly accepted that reducing occupational stress is key to improving the health and performance of the workforce ([Iqbal, 2019](#)), and yet we continue to operate within high-stress environments, under the putative supposition that we are improving productivity and being economically astute. However, it is a false economy. It's akin to having a pair of jeans with a hole in the pocket, yet still filling it with coins and wondering why you're short-changed. By not remedying stressful work environments, we think we're being financially prudent, but instead we are paying the price – economically, but also biologically.

The physiological response

It is well documented that occupational stress leads to mental ill health, but how it occurs is less known. Understanding the process, even in its most basic form, can reveal the gravity of stress exposure at work and lead individuals to give the matter the solemnity it deserves. Occupational stress is implicated in a dysregulated immune response ([Calnan et al., 2000](#); [Toker et al., 2005](#)) and advances in molecular medicine have led to the understanding that inflammation is a principal mediating component in the onset and progression of heterogenic conditions ([Moutsopoulos & Madianos, 2006](#); [Scrive et al., 2011](#)). Acute or repeated and prolonged work-stress exposure can impair anti-inflammatory effects on immunity, inhibit the interplay between immune cells and signalling networks ([Bae et al., 2019](#)). This invariably leads to alterations to indicators of immune function at both tissue and cellular level ([Kiecolt-Glaser et al., 2002](#)).

Psycho-neuro-immunology has been identified as a plausible, causal framework through which this interaction occurs ([Ader & Cohen, 1975](#)). Where stress activates the integrative network between the brain, (endocrinology) and the immune system in the provocation of an inflammatory response that results in mental ill states. There are, of course, benefits to transient inflammatory responses and *good* stress (in the vernacular) is processed adaptively. As part of the protective reaction of the stress response, a range of neurotransmitters, hormones and acute-phase reactants mediate allostasis (i.e., the constant, dynamic and adaptive response within the body to maintain physiological stability; [McEwen, 2002](#)). This inflammatory cascade is designed to eliminate microbial pathogens, induce tissue repair and restore homeostasis ([Rohleder, 2019](#)). However, when the body is repetitively challenged, such as in the case of daily occupational stressors, allostatic systems are overstimulated, and activated mediators of allostasis develop a cumulative biological burden (or a wear and tear) on the body and brain called allostatic load ([Sun et al., 2007](#)).

Allostatic load can present in a variety of negative forms, including hippocampal atrophy; abdominal fat; and bone minerals loss, which ultimately lead to physical and mental diseased states ([McEwen, 2007](#)). The functional interplay between the integrative network is dependent upon feedback-loops interacting to maintain homeostatic and allostatic equilibrium ([Lorentz, 2006](#)), which when working well is adaptive, but when disrupted or overstimulated by psychosocial stressors it leads to biological dysfunction. Therefore, being in a chronic state of stress at work can disrupt the body's dynamic physiological, psychological and environment equilibrium and result in conditions of poor mental health ([Priyadarshini & Aich, 2012](#)).

Prevention is better than cure

As such, stress-induced inflammation has emerged as a central biological pathway that underlies a host of slowly disabling conditions, which affects a substantial portion of the population ([Larson, 2002](#)). This plethora of conditions have had tremendous health and economic effects at a macro and micro level, so have become a salient public health concern ([Chattu et al., 2018](#)). In view of the epidemiologic costs associated with chronically heightened inflammation ([Scrive et al., 2011](#)) there is motivation to identify behavioural and environmental factors that could be leveraged to mitigate successive damages. The alleviation of stress at work has been identified as a plausible target; where stress reductions could improve mental health, reduce organisational waste and curtail public spending ([Wright et al., 2020](#)).

Cut the stigma

Therefore, rethink how you yourself think about mental illness – *cut the stigma!* Have honest conversations with your colleagues. Be transparent about moments of mental distress. Remove mental health issues from the periphery. [Sawhney et al. \(2018\)](#) proposed seven work recovery strategies; work-related talks, stress-related talks, personal time with colleagues and direct managers, along with engaging in exercise, recreational activities, relaxation and mastery experiences. Ultimately, mental health needs to become a regular discussion that can be shared without judgement or penalty, because no person is *immune* to it. Work should be a safe place that promotes health from a broad perspective, because there is no health without mental health.



Notes:

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