Check for updates

doi:10.1111/imj.16121

PERSONAL VIEWPOINT

Self-control, limited willpower and decision fatigue in healthcare settings

Daniel R. Schweitzer [1], Roy Baumeister [2], E-Liisa Laakso [3,4] and Joseph Ting [5,6]

[1]Neurosciences, Mater Health and [2]Department of School of Psychology and [3]Mater Research Institute, University of Queensland and [5]Department of Emergency Medicine, Mater Health and [6]Queensland University of Technology, Brisbane, and [4]Menzies Health Institute Queensland, Gold Coast, Queensland, Australia

Key words
willpower, self-control, healthcare.

Correspondence
Daniel R. Schweitzer, Neurosciences, Mater Health, Raymond Terrace, Brisbane, Qld. 4101, Australia.
Email: danrschweitzer@gmail.com

Received 18 August 2022; accepted 18 April 2023.

Abstract

We argue that willpower as well as its depletion may, in some circumstances, adversely impact on clinical decision-making and patient care. This psychological phenomenon has been dubbed ego depletion in social psychology. Willpower and its depletion which is known as 'ego depletion' are well-established and validated theoretical constructs in social psychology and have been studied across a range of experimental contexts. Willpower is closely related to the concept of self-control, which refers to the ability to regulate one's own behaviour and actions in order to pursue and achieve either a short- or long-term goal. We outline the clinical relevance of willpower and its depletion in relation to clinical case examples drawn from three of the authors' clinical experience with the view of developing a clinical-research agenda for future research studies. We examine willpower and its depletion in the context of three clinical case examples, which include (i) doctor–patient interactions, (ii) willpower and its depletion in relation to challenging interpersonal interactions with clinical and non-clinical work colleagues and (iii) willpower and its depletion in response to working within a challenging and unpredictable clinical environment. In contrast to the more widely recognised external resources (including space, staff allocations and night shifts), a greater understanding of how this important but under-recognised internal resource can be depleted in response to a range of different factors within clinical settings has the potential to inform and improve patient care through a renewed focus on the developing interdisciplinary clinical studies which draw upon contemporary findings from social psychology. Future work aimed at developing evidence-based interventions to help mitigate the negative impact of impaired self-control and decision fatigue within healthcare systems may in turn lead to improved patient care as well as more effective healthcare service and delivery.

Introduction

Most clinicians struggle with limited resources that affect their ability to manage across a range of clinical tasks. We examine the role of psychological factors (particularly self-control and willpower) that have the potential to impact clinical practice adversely. These factors became increasingly evident as the COVID-19 pandemic placed greater pressures across healthcare settings, with troublesome limits imposed on resource allocation, including staffing, money, space and time within hospital settings. We aim to focus on breaking limits on internal (psychological) resources, specifically the energy needed for self-control and decision-making. We outline three different clinical examples drawn from three of the authors' clinical experience and contextualise these scenarios in relation to findings from contemporary social psychology. Findings are discussed in connection with broader health services-related research with adverse impact on the individual health practitioner's clinical practice.

Self-control is critical to clinical decision-making. Degradation of self-control, through focussing on multitasking within chaotic clinical units, challenges interpersonal interactions when working across busy clinical environments. These factors in turn affect levels of willpower with negative

Conflict of interest: None.

© 2023 The Authors. *Internal Medicine Journal* published by John Wiley & Sons Australia, Ltd on behalf of Royal Australasian College of Physicians.
This is an open access article under the terms of the Creative Commons Attribution-NonCommercial License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

clinical consequences in an overworked, overly tired practitioner. Self-control can be understood as the psychological capacity to intentionally alter one's responses. Within health care, the concept includes regulating one's thoughts (e.g. to think carefully), managing emotions (e.g. pre-existing anger and stress), controlling one's impulses (resisting temptations) and optimising performance.

Willpower is a folk notion of psychological energy, such as when feeling a strong temptation to misbehave requires strong willpower to resist. After exerting self-control, subsequent self-control deteriorates, suggesting that willpower has been depleted.[1,2] This phenomenon has been dubbed 'ego depletion', to reflect that the self is not operating with full energy. Ego depletion is an important psychological resource referring to poorer performance on a self-control task after previously engaging with a task that required greater levels of self-control.

The idea of limited willpower has been extended in the concept of decision fatigue.[3] For example, after making many clinical decisions, self-control is impaired and vice versa. Effects have been found in healthcare settings. As a work shift progresses and health workers' willpower energy becomes depleted, workers become increasingly likely to omit prescribed hand-washing, to overprescribe and to make more impulsive decisions about surgery.[4,5] The ability to provide fair-minded and equitable decisions within health organisations deteriorates in response to ego-depleted resources.[6] In university students, ego depletion leads to poorer concentration, increasingly biased and prejudicial judgements, giving up sooner on difficult tasks, at least minor dishonesty, interpersonal conflict and aggression, and other worrisome behaviour. In health care, the *World Health Organisation* (WHO) urgently recommends implementation of surgical safety checklists that reduce the rate of deaths and surgical complications.[7]

Clinical practice requires that clinicians remain task focussed across busy clinical environments in the midst of challenging distractions, interpersonal interactions and competing tasks. Remaining on task can, in some situations, be difficult and requires ongoing self-control. The ability to stay on task requires one to resist workplace distractions and interruptions and to have the capacity and ability to order and prioritise high-pressure clinical care of a cohort of unwell patients. Nowhere is this more evident than across the emergency department, where patients are triaged for urgent treatment and referrals. The capacity to act and respond appropriately to different patient presentations, to structure clinical care around urgency of need, and to assess and manage several urgent patients requires the practitioner to exercise self-control effectively and consistently.

Self-control, willpower and resource allocation:

The complex healthcare needs of an ageing, multimorbid community and global pandemic have incited healthcare organisations to re-assess limited resources urgently. Discussions related to resource allocation typically focus on material or 'external resources' including money, time, staff allocations, space and bed allocations. Another important resource is internal to the individual health practitioner, that is, willpower. The colloquial notion of willpower is related to self-control and is an important but neglected internal resource. Willpower can be operationalised as the ability to delay gratification and resist temptations in order to pursue long-term goals.[1,8]

Factors that deplete willpower (or 'ego depletion') and work performance include negative patient interactions, long and unsociable work shifts, and conflict with colleagues. Ego depletion theory is underpinned by a constrained internal resource, namely energy for self-control and decision-making. In Figure 1, we offer a conceptual framework by which to visualise the connection between internal resources, external resources, willpower, self-control and clinical decision fatigue. According to this framework, when a mental activity is required for a task, low self-control can impair clinical decision-making because of low psychological (physical) energy resulting from external and internal resourcing factors. Some tasks and activities are more ego-depleting than others. Furthermore, a task with ego-depleting effects can impair performance on subsequent tasks. Ego depletion is a central topic in social psychology and provides a framework to understand the processes that underpin self-control maintenance across a range of clinical situations. Clinicians need to exert self-control across a range of clinical situations in order to make good decisions, with interrelated external and internal factors both being important.

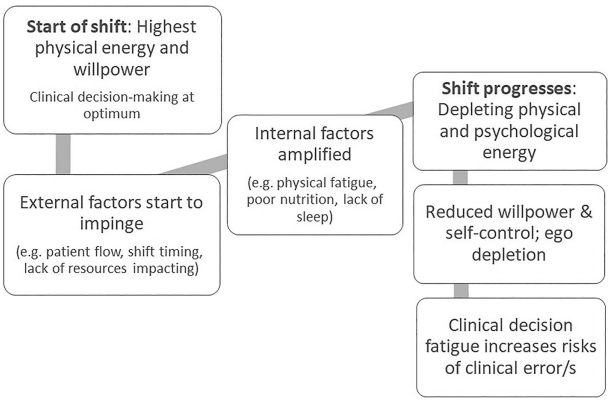

Figure 1 Interrelationships between internal and external factors in terms of their impact on clinical decision-making within the context of healthcare settings. Both internal and external factors can result in reduced levels of willpower, which in turn can lead to clinical decision fatigue. The framework provides a way to understand the interrelationship and contribution of both internal and external factors with fatigue.

© 2023 The Authors. *Internal Medicine Journal* published by John Wiley & Sons Australia, Ltd on behalf of Royal Australasian College of Physicians.

14455994, 2023, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/imj.16121, Wiley Online Library on [12/03/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

We present examples intended to illustrate the diverse ways that depleted willpower can affect and compromise healthcare delivery.

Three clinical cases and implications

Case 1

The emergency physician at a busy metropolitan located emergency department was managing four threatening patients simultaneously. All four patients had acute psychosis related to illicit substance use. Comorbidities that complicated worsening agitation included a urinary tract infection, pneumonia and head injury and cellulitis. The burly and heavily tattooed psychotic adult threatened to assault the experienced emergency physician. This acute threat to personal safety (the doctor was spat at with face shield and N95 mask on) degraded his procedural and cognitive performance when required to intubate a possible COVID-19 patient later that shift. Given urgently competing tasks, the emergency physician had to prioritise which of the four patients he would have to provide care first. The cognitive distraction of prioritising acute psychotic care to four patients with concurrent medical delirium could have degraded care for each of them. There are unavoidable situations where clinicians are required to multitask, despite evidence showing that multitasking hampers decision-making across different tasks.[9]

This case highlights the way in which the clinical need to manage concurrently several urgent clinical cases necessitates partitioning attention between competing demands, impairing the willpower that leads to decision fatigue and ultimately reducing staff and patient safety. There is variation in decision-making across the course of a day[3] and clinical decision-making is affected by having to manage unpredictable, congested and chaotic workflow in the emergency department while juggling multiple sick patients concurrently.

Staying on task in the face of competing clinical demands depletes willpower. All patients had high levels of emotional distress and were potentially violent. The emergency physician involved identified reduced levels of willpower, which affected his ability to manage each patient optimally. Furthermore, ego depletion diminished his capacity to provide optimal care to the next critically unwell patient with respiratory failure. Other factors to consider include time of day (e.g. beginning vs end of shift, call-in) and hunger and fatigue.

Case 2

A senior clinician was reviewing a diagnostic investigation by a junior clinician. A verbal complaint was made by the senior clinician about the interpretation of the diagnostic test by the junior clinician as well as about the performance of the junior clinician.

The junior clinician had the diagnostic investigation reviewed by two highly experienced clinicians, and no deficits were found in the conduct or interpretation of the diagnostic study findings. Nevertheless, a subsequent review of the junior clinician was undertaken within the health organisation, with no clear basis. An investigation into the clinical practices of the junior clinician was made, including a threat to the junior clinician that if they did not comply with the proposed investigation, the junior clinician would be reported to the regulatory board. As a result of difficult interpersonal interactions, the junior clinician's willpower to undertake clinical work was exhaustingly depleted in response to challenging interpersonal interactions and workplace situations.

The quality of interpersonal interactions among clinical and non-clinical colleagues impacts on levels of self-control and may in some situations lead to ego depletion.[1,8,10,11] Difficult interpersonal interactions with colleagues, including verbal and implied threats, power plays underpinned by hierarchical gradients and factionalism, deplete willpower. These factors are chronically stressful and reduce work engagement. Dysfunctional, high-pressure work environments reduce health worker well-being and potentiate burnout.[11–13] Managers and human resource managers could help with procedural fairness during complaints handling.[6]

Case 3

The Neurosurgical Intensive Care Unit (ICU) admits severe traumatic brain injury and post-operative brain surgery patients. Clinicians working within the ICU are expected to integrate different types of information and respond appropriately to competing clinical and, in some cases, administrative tasks. After working the entire day shift, the physiotherapist was continuing work on a busy rostered overnight on-call shift in the ICU. The physiotherapist neglected momentarily to switch on the ventilator after disconnecting it for manual hyperinflation required for assisting with reducing lung atelectasis. The clinical inaction was promptly recognised and addressed by the critical care nurse looking after the patient.

The ICU has been described as a hostile and high-stress environment in which clinicians need to manage critically unwell patients in the face of a busy barrage of clinical deterioration alarms and notifications.[14] ICU clinicians need to synchronously integrate multimodal urgent information and respond appropriately and in short time. Extended work hours, sleep deprivation, hunger and physical fatigue had depleted the internal

© 2023 The Authors. *Internal Medicine Journal* published by John Wiley & Sons Australia, Ltd on behalf of Royal Australasian College of Physicians.

14455994, 2023, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/imj.16121, Wiley Online Library on [12/03/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

resources of the physiotherapist, resulting in impaired self-control and decision fatigue, resulting in the omission of a simple procedural act that could have had significant consequences to the patient.

Addressing issues raised by clinical examples

Decision fatigue leads to erroneous clinical decision-making and compromises patient care. Interventions to address the situations raised in our examples require ongoing research. How to develop studies, and isolating key variables of interest within a complex hospital environment, is challenging. Investigating the environmental and interpersonal factors that contribute to reduced or enhanced levels of self-control has important clinical implications for patient safety and individual staff performance.

Empirical studies will need to be conducted to examine the impact of multitasking within busy clinical environments on self-control. The impact of long hours, busy clinical work environments and interruptions on self-control, willpower and clinical decision-making raises interesting research questions. Competing clinical demands and tasks, hostile work environments and challenging interpersonal interactions all have the potential to affect self-control. Previous studies investigated the capacity of cognitive and behavioural-based interventions to enhance self-control[15]; however, none has specifically examined the impact of specific health-related interventions to enhance self-control among healthcare practitioners.

Previous studies across academic settings showed that self-discipline was a better predictor of academic performance in adolescents than intelligence or IQ.[16] Although selection into medical school has traditionally focussed on individual skills and IQ, it is possible that self-control and self-regulation may also be predictors of clinical competence across a variety of stressful clinical settings. Measures of self-control and self-regulation may be deployed as predictors of future clinical performance if found reliable.

To deliver high-quality healthcare services, it has become increasingly important to investigate the psychological resources of individual clinicians, including self-control. Self-control can be regarded as a type of psychological flexibility in the ability to adjust one's cognitive resources to the particular demands at hand. Future clinically informed studies in relation to willpower, ego depletion and decision fatigue could initially be undertaken within the context of laboratory settings. For example, willpower depletion could be investigated in response to manipulated environmental and internal factors (e.g. fatigue after long work shifts as well as sleep deprivation) before being rolled out to hospital ecosystems.

In terms of potential interventions to address ego depletion within healthcare settings, we recommend interventions worth exploring. Intrinsic interventions that assist clinicians in optimising self-control include having time for regular meals, task triaging and mindfulness-based training. Also, extrinsic interventions involving environmental modifications include user-friendly work areas, sociable work rostering and policy to reduce interruptions.

Intersecting factors

Intersecting themes of poor self-control, decision fatigue and empathy fatigue[3] have been exacerbated by the COVID-19 pandemic. The ability to provide kind and compassionate care may potentially be affected over the course of a busy day or at the end of a long work shift. For example, the ability to listen and empathise with a grieving patient or relative may also be compromised towards the end of a work shift when a clinician is more likely to experience fatigue as opposed to the beginning of a day. The magnitude and contribution of these factors on work performance require further interdisciplinary studies involving clinicians and researchers working in social psychology.

Empathy may be reduced because of hunger and long work shifts, as well as difficult interactions with colleagues, patients, families and caregivers. Each of these focus areas requires further attention and analysis, not least important being the issue of health worker burnout among clinicians who are ego depleted.[10,17,18] Understanding the determinants of burnout requires further study. Self-control is essential to a range of everyday tasks and occupational success.[17] It is vital that individuals overcome a range of coping strategies that are harmful or self-destructive, such as excess alcohol consumption, smoking and illicit substance use. The impulses that impair good clinical decision-making in hospitals remain unclear. Developing a research framework in which to investigate issues related to impulse and its effects on clinical decision-making has the potential to improve patient care and healthcare delivery.

Ego depletion has been used to account for self-regulatory failures across a diverse number of situations, behavioural domains and populations. Central to the idea of ego depletion is that the ego is a finite resource that can be depleted, which in turn can affect clinical performance. Ego depletion was originally developed in the field of social psychology[1,19] and has been applied to a range of phenomena across the field of psychological science, including personality, consumer behaviour, decision-making and neuroscience. We suggest that the

© 2023 The Authors. *Internal Medicine Journal* published by John Wiley & Sons Australia, Ltd on behalf of Royal Australasian College of Physicians.

14455994, 2023, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/imj.16121, Wiley Online Library on [12/03/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

concept also has important implications across clinical settings requiring further empirical investigations.

Conclusion

Developing a research framework in which to investigate the psychological causes of diminished self-control and impaired decision-making among healthcare providers offers the promise of improving both the quality of patient care and health workers' own well-being. Applying findings from controlled laboratory conditions to the clinical setting is not without challenges. Further research has the potential to lead to evidence-based interventions, based either on environmental modifications or interventions to enhance the individual practitioner's self-control, that can translate to improvements in effective and consistent decision-making for patient care. Both internal factors (e.g. hunger and reduced sleep) and external factors (e.g. busy and unpredictable work environments) are likely to affect levels of self-control, thereby leading to reduced levels of willpower. Insights from clinical practice may inform the future development of scales to assess levels of self-control and willpower.

We suggest the first step taken to develop an interdisciplinary dialogue and research framework be at the intersection of healthcare research and social psychology with a particular focus on self-control and willpower.[19] There is currently a need to go beyond current experimental paradigms to new experimental protocols that can be adapted to real-life clinical settings.

Acknowledgements

Open access publishing facilitated by The University of Queensland, as part of the Wiley - The University of Queensland agreement via the Council of Australian University Librarians.

References

1 Baumeister RF, Vohs KD, Tice DM. The strength model of self-control. *Curr Dir Psychol Sci* 2006; **16**: 351–5.
2 Dang J, Barker P, Baumert A, Bentvelzen M, Berkman E, Buchholz N *et al*. A multilab replication of the ego depletion effect. *Soc Psychol Personal Sci* 2020; **12**: 14–24.
3 Trinh P, Hoover DR, Sonnenberg FA. Time-of-day changes in physician clinical decision making: a retrospective study. *PLoS One* 2021; **16**: e0257500.
4 Dai H, Milkman KL, Hofmann DA, Staats BR. The impact of time at work and time off from work on rule compliance: the case of hand hygiene in health care. *Am J Appl Psychol* 2015; **2015**: 846–62.
5 Philpot LM, Khokhar BA, Roellinger DL, Ramar P, Ebbert JO. Time of day is associated with opioid prescribing for low back pain primary care. *J Gen Intern Med* 2018; **11**: 1828–30.
6 Whiteside DB, Barclay LJ. When wanting to Be fair is not enough: the effects of depletion and self-appraisal gaps on fair behavior. *J Manag* 2016; **44**: 3311–35.
7 Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat AHS, Dellinger EP *et al*. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med* 2009; **360**: 491–9.
8 Baumeister R, Tierney J. *Willpower: Rediscovering the Greatest Human Strength*. New York: Penguin Press; 2011.
9 Peifer C, Zipp G. All at once? The effects of multitasking behavior on flow and subjective performance. *Eur J Work Organ Psy* 2019; **28**: 682–90.
10 Bhatnagar G. Physician burnout. *Lancet* 2020; **295**: 333.
11 Quine L. Workplace bullying in junior doctors: questionnaire survey. *Br Med J* 2002; **324**: 878–9.
12 Stehman CR, Testo Z, Gershaw RS, Kellogg AR. Burnout, drop out, suicide: physician loss in emergency medicine, part 1. *West J Emerg Med* 2019; **20**: 485–94.
13 West CP, Dyrbye L, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet* 2016; **388**: 2272–81.
14 Donchin Y, Seagull FJ. The hostile environment of the intensive care unit. *Curr Opin Crit Care* 2002; **8**: 316–220.
15 Smith T, Panfil K, Bailey C, Kirkpatrick K. Cognitive and behavioral training interventions to promote self-control. *J Exp Psychol Anim Learn Cogn* 2019; **45**: 259–79.
16 Duckworth A, Seligman M. Self-discipline outdoes IQ in predicting academic performance in adolescents. *Psychol Sci* 2005; **16**: 939–44.
17 Hartzband P, Groopman J. Physician burnout, interrupted. *N Engl J Med* 2020; **382**: 2485–7.
18 Hoffman R, Bonney A. Junior doctors, burnout and wellbeing: understanding the experience of burnout in general practice registrars and hospital equivalents. *Aust J Gen Pract* 2018; **47**: 571–5.
19 Baumeister RF, Heatherton TF, Tice DM. *Losing Control: How and Why People Fail at Self-Regulation*. San Diego, CA: Academic Press; 1994.

© 2023 The Authors. *Internal Medicine Journal* published by John Wiley & Sons Australia, Ltd on behalf of Royal Australasian College of Physicians.

14455994, 2023, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/imj.16121, Wiley Online Library on [12/03/2025]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License