



Feeling like an imposter: are surgeons holding themselves back?

Bellal Joseph ¹, Esther S Tseng ², Martin D Zielinski,³ Christine L Ramirez,⁴ Jennifer Lynde,⁵ Kelly M Galey,⁶ Sai Krishna Bhogadi,¹ Khaled El-Qawaqzeh,¹ Hamidreza Hosseinpour,¹ EAST Equity, Diversity, and Inclusion in Trauma Surgery Practice Committee

¹Surgery, University of Arizona, Tucson, Arizona, USA

²Division of Trauma, Critical Care, Burns, and Emergency General Surgery, Department of Surgery, MetroHealth Medical Center, Cleveland, Ohio, USA

³Division of Trauma and Acute Care Surgery, Department of Surgery, Baylor University Medical Center at Dallas, Dallas, Texas, USA

⁴Department of Surgery, St Luke's University Health Network, Bethlehem, Pennsylvania, USA

⁵Division of Trauma, Acute Care Surgery and Surgical Critical Care, Department of Surgery, University of California Davis Health System, Sacramento, California, USA

⁶Surgery, Salem Health, Salem, Oregon, USA

Correspondence to

Dr Bellal Joseph; bjoseph@surgery.arizona.edu

Received 26 September 2022
Accepted 16 June 2023

SUMMARY

Imposter syndrome is a psychological phenomenon where people doubt their achievements and have a persistent internalized fear of being exposed as a fraud, even when there is little evidence to support these thought processes. It typically occurs among high performers who are unable to internalize and accept their success. This phenomenon is not recognized as an official mental health diagnosis in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; however, mental health professionals recognize it as a form of intellectual self-doubt. It has been reported that imposter syndrome is predominant in the high-stakes and evaluative culture of medicine, where healthcare workers are frequently agonized by feelings of worthlessness and incompetence. Imposter syndrome can lead to a variety of negative effects. These can include difficulty concentrating, decreased confidence, burnout, anxiety, stress, depression, and feelings of inadequacy. This article will discuss the prevalence of imposter syndrome among surgeons, its associated contributing factors, the effects it can have, and potential strategies for managing it. The recommended strategies to address imposter syndrome are based on the authors' opinions.

ASSESSMENT OF IMPOSTER SYNDROME

Imposter syndrome is not recognized as an official mental health diagnosis in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V); however, mental health professionals recognize it as a straightforward and specific form of intellectual self-doubt. The term imposter phenomenon was first described in 1978 by psychologists Pauline Clance and Suzanne Imes in high-achieving women.⁴ They developed the Clance Imposter Phenomenon Scale (CIPS) to assess the imposter phenomenon.⁵ CIPS consists of a 20-item questionnaire that asks respondents to rate each statement on a Likert-type scale from 1 to 5, ranging from strongly disagree to strongly agree. The items measure the individual's experience of self-doubt and feelings of inadequacy, such as "I often feel that I'm not as competent as others think I am". CIPS score between 41 and 60 is considered moderate, whereas 61–80 and 81–100 represent significant and intense imposter phenomenon, respectively. There is a strong association between imposter phenomenon scores among physicians and burnout, and suicidal ideation, as well as an inverse correlation with professional fulfillment.²

IMPOSTER SYNDROME IN SURGICAL TRAINEES

In a landmark study conducted by Bhama *et al* on imposter syndrome in general surgery residents at six programs, 76% of surgery residents reported either 'significant' or 'severe' imposter syndrome.⁶ The mean scores did not vary significantly depending on gender, ethnicity, year of postgraduate training, or USMLE or American Board of Surgery In-Service Training Examination scores.⁶ A study focusing on imposter syndrome among general surgeons and surgical residents revealed that residents scored significantly higher than faculty on the imposter syndrome screening questionnaire.⁷ Additionally, the CIPS score was significantly higher in surgical trainees compared with faculty (61 vs 51, $p=0.017$). It is worth noting that even faculty suffered moderate imposter phenomenon.⁷

The burden of striving for perfection during residency can be overwhelming, which may lead to negative physical and psychological effects. Surgical residents are particularly prone to burnout according to a study, and impostorism was identified as an independent predictor of burnout and anxiety.⁸

Imposter syndrome is a psychological phenomenon characterized by feelings of inadequacy, self-doubt, and a fear of being exposed as a fraud, despite having achieved success in their chosen field.¹ It is commonly experienced among high-performing individuals, who struggle to accept and internalize their accomplishments, instead exhibiting traits such as overworking, perfectionism, fear of failure, and an inability to accept praise.¹ Imposter syndrome is predominant in the high-stakes and evaluative culture of medicine,² where healthcare workers are frequently agonized by feelings of worthlessness and incompetence.^{2,3} Approximately a quarter of physicians indicated experiencing frequent or intense experiences of imposter phenomenon.¹ These occurrences were found to be more intense among female physicians, young physicians, and those employed in academic practice settings.¹ Despite being neglected for a long time, recent studies have brought into limelight the issue of imposter syndrome in surgeons. This article will explore the issue of imposter syndrome among surgeons.

© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Joseph B, Tseng ES, Zielinski MD, *et al*. *Trauma Surg Acute Care Open* 2023;**8**:e001021.

Research has revealed a correlation between imposter syndrome and greater intolerance of uncertainty as well as reduced confidence in problem-solving.⁹ This is concerning as mentors anticipate that self-doubt, feelings of inadequacy, and incompetency will decline with training and experience. Residency is a time when trainees acclimatize to new clinical rotations, with different expectations, responsibilities, and pressures. Thus, continuous new challenges present a significant risk of distress for young trainees. This represents an interesting conundrum since residency is intended to broaden the experiences and capabilities of residents, challenge them, and prepare them for life as faculty members. Finding a balance between providing meaningful experiences and challenges that result in negative self-perceptions is an area that needs to be explored.

Fellowship is the period of training taken after the residency which comes with increased clinical responsibilities. Fellows are expected to demonstrate high clinical competence as they have already completed their residency training. Despite this, research suggests that fellows may experience significant stress while adjusting to the fellowship program.¹⁰⁻¹¹ A study by Zaed *et al* evaluating neurosurgery residents, fellows, and young attendings found a prevalence of 82% for imposter syndrome.¹² Given the exceptionally high prevalence of imposter syndrome among surgical trainees, intentional action should be taken to address this issue. Training programs must consider the feelings of trainees and provide them with adequate support in the early stages of their training. These efforts must include challenging collective notions that portray physicians as invincible, prioritize work over basic human needs, and stigmatize help-seeking as a weakness.

IMPOSTER SYNDROME IN FACULTY

Imposter syndrome has been the subject of limited research, particularly regarding its effects on academic surgeons and the training and education of their students. The literature has highlighted that imposter syndrome is a common entity among faculty.¹³ A recent large-scale study in the USA revealed that 23% of physicians in practice reported frequent or intense experiences of imposter phenomenon, despite having years of training and experience.¹ Among practicing physicians, younger physicians, and those in Veterans Health Administration, top research institutes or academic practice settings reported higher levels of imposter phenomenon.¹⁻¹³ The transition from trainee to faculty is associated with more responsibilities and stress. In a survey conducted by Lynch *et al* on 153 surgeons, junior faculty reported more anxiety and confidence issues when compared with senior faculty.¹⁴ Junior faculty, more often females, reported imposter-like feelings.¹⁴ Physicians struggling with errors and self-doubt may become immobilized by fear, especially when they have limited support.¹⁵

It is essential to recognize that the circumstances of the workplace for surgeons are constantly changing. Naturally, they may underperform as they adjust to the demands of new work environments, clinical teams, and professional roles, which can further compound the feelings of being an imposter.¹⁶ As a surgeon, comfort is essential for successful leadership of a team. Doubting one's abilities can have a detrimental effect on the confidence of the whole team. Motivating and enabling the team to give their best is a key skill for a leader in surgery, but feelings of inadequacy may be a hindrance in accepting responsibilities and lead the surgeon to become uncomfortable in surgical roles.

Finding ways to manage these struggles effectively is critically important to develop professional competence. One way to

mitigate imposter syndrome in surgeons is to set realistic goals. By setting achievable goals, surgeons can better understand their capabilities and successes. Additionally, surgeons should create a support system made up of other surgeons and medical professionals who can provide feedback and encouragement. Finally, surgeons should take time to practice self-care and recognize their accomplishments. By doing so, they can focus on the positive aspects of their work and reduce feelings of inadequacy.

CONTRIBUTING FACTORS TO IMPOSTER SYNDROME

Imposter syndrome in surgeons may be due to various factors, including the high-pressure environment they work in. Surgeons are constantly faced with difficult and life-threatening decisions and can easily feel inadequate or insecure despite their years of training and experience. The fear of making a mistake or not living up to expectations can lead to feelings of imposter syndrome. In the persistent efforts to perform each task perfectly without asking for help, individuals suffering from imposter syndrome develop typical responses. They may delay or refuse to complete an assignment due to fear that they will not be able to fulfill the required standard.

Throughout their careers, females and under-represented in medicine minorities face discrimination and microaggressions from patients, colleagues, supervisors, and staff and are less likely to advance to higher positions or feel that they fit into their training programs or are comfortable to ask for help.¹⁷ Studies have found that female gender is a significant risk factor for imposter syndrome.¹⁸ Under-represented in medicine students are more likely to experience imposter-like feelings and need more support from the institution to adapt to the highly competitive environment.¹⁹⁻²⁰ Furthermore, some evidence suggests that foreign medical graduates may be more susceptible to developing imposter feelings compared with their colleagues.³ These challenges may further compound the feelings of impostorism among these populations and highlight another area for further attention, support, and mentorship. It is important to adopt an inclusive framework and for members of majority groups and positions of power to practice allyship, and advocate for those who may not be able to advocate for themselves to develop and achieve their highest potential.

RELATIONSHIP BETWEEN MEDICAL ERRORS, IMPOSTER SYNDROME, AND BURNOUT

Attention to detail is a major prerequisite for a high standard of care.²¹ A medical error by the healthcare provider can elicit a substantial psychological response, including guilt, anxiety, and self-doubt.²¹ Recurrent feelings of worthlessness and incompetence can contribute to poor wellness and burnout.⁷⁻²² Studies have shown that burnout among surgeons and surgical residents is significantly associated with imposter syndrome.¹⁻⁷ Additionally, compromised wellness and burnout are associated with poor patient safety outcomes, increasing the risks of medical errors.²³ Hence, surgeons are at increased risk of imposter syndrome due to the high precision demanding nature of the surgical field and also due to the inhabitation of this leading profession by high achievers who are particularly prone to linking their self-worth with achievement.²⁴

PHYSICAL, PSYCHOLOGICAL, AND PROFESSIONAL IMPACT OF IMPOSTER SYNDROME

Imposter syndrome has been linked with several negative consequences that can impact an individual's physical, psychological, and professional well-being.²⁵ Individuals suffering from imposter

syndrome are usually held back by their inability to accept recognition even when success is achieved, leading them to experience a vicious cycle of stress, job and personal dissatisfaction, compromised performance, and burnout.²⁶ In addition, given the persistent pursuit of achievement, imposters usually suffer from high levels of emotional exhaustion at work and increased work-family conflict.²⁷ Lastly, the imposter phenomenon scores among practicing physicians strongly correlate with suicidal ideation.¹

Imposter feelings manifest in the form of fear of failure, fear of success, and low self-esteem and have been shown to impact career development negatively. Following incidences of failure, those with imposter syndrome are more prone to depression and more likely to report feelings of guilt, anxiety, and humiliation.²⁸ Even if sufferers are successful on one occasion, they remain fearful of failing the next time and of being exposed as a fake, and this vicious cycle prevents them from developing an optimistic future perspective. Career optimism has been shown to have a beneficial impact on work productivity and other necessary characteristics, such as achievement, happiness, and perseverance.²⁷ Individuals with imposter syndrome are unable to interrupt these maladaptive thought patterns because of the fear that any aberration will increase the likelihood of failure. This can lead to physical and mental exhaustion due to the constant uncertainty about their ability to maintain their performance at a higher level.¹⁰

Imposter syndrome affects the individual's capacity and the system. Studies have shown that imposter feelings are associated with lower levels of career striving and motivation, leading to compromised job satisfaction and organizational commitment.²⁹ Parkman and Beard discussed the increased risk of losing top faculty talent (especially those most at risk for experiencing imposter feelings) because of persistent imposter concerns.³⁰ Imposter syndrome has also been recognized as an integrative phenomenon that functions as an intrinsic barrier to moving up to more advanced professional levels and leadership positions because of the additional accountability and visibility that can come with it.²⁹ This is particularly distressing in academic settings where new challenges are frequently encountered, and there are frequent performance evaluations. As a result, they may avoid opportunities due to the fear of the consequences of failing to reach full-scale potential.

Despite their self-perceived incompetence, surgeons with imposter feelings are typically high achievers who efficiently fulfill their clinical and academic work, even at a significant cost to their psychological well-being.¹⁰ However, their growth may be hindered by having a fixed belief that accomplishment through hard work does not prove their actual ability. They usually attribute their successes to circumstances rather than their skill and thus disregard positive feedback.³¹ As a result, neither objective evidence of success nor sincere subjective assurances by their mentors removes the feelings of fraudulence.³¹ Senior faculty, program directors, mentors, and those in supervisory roles must note that even high-achieving, successful individuals with feelings of imposter syndrome may be struggling and that positive feedback may not be enough to help them. It is critical to recognize and manage imposter syndrome in those who have it. Institutions should ensure that surgeons have access to mental health resources and services to help them manage their stress and anxiety. A culture of authenticity and vulnerability should be cultivated during medical school and residency training, alongside active attempts to reduce imposter syndrome among practicing physicians.

Overall, surgeons are trained, not born. Intelligence, professionalism, courage, and perseverance on behalf of patients are the critical characteristics of a good surgeon. Imposter syndrome and feelings of inadequacy are in direct conflict with these goals, as doubting one's abilities in the early stages of medical training could potentially intensify the feelings of incompetence further down the road, deter

students from pursuing surgical careers, and could be devastating for a medical career overall.³²

STRATEGIES TO OVERCOME IMPOSTER SYNDROME

Imposter syndrome is not considered a psychiatric disorder and is not included in DSM-V. Hence, there is limited data from mental health experts on the management strategies for patients with imposter syndrome, particularly pertaining to doctors beyond training and under-represented populations in medicine. However, given the high prevalence of imposter syndrome in the medical profession, intentional efforts at the system, organization, and individual levels are needed to counter this phenomenon. Efforts should be made to challenge collective attitudes that view physicians as invincible and see help-seeking as a sign of weakness. Organizations may need to take deliberate and sustained steps to evolve from a culture of perfectionism to one of excellence and a growth mindset.³³ Measures to accomplish these goals may include Colleagues Meeting to Promote and Sustain Satisfaction groups,³⁴ personal narrative exchange,³⁵ and small group talks. Here are some suggestions based on the opinions of the authors that might help to battle imposter syndrome.

Focus on facts

Many people with imposter syndrome suffer in silence or simply overlook the symptoms. Recognizing and accepting how prevalent feelings of impostorism are and focusing on factual evidence may assist an individual in understanding that their sense of inadequacy is inaccurate when they are achieving success in their career.

Talk to your mentors

Mentors can play an essential role in overcoming imposter syndrome by providing words of encouragement and support. Talking to a mentor or role model can help gain perspective and build confidence. Recognizing that one can seek assistance, ask for help, and not have to do everything alone will give confidence and help manage these symptoms. Senior physicians may discuss their challenging episodes in their early careers to demonstrate to junior physicians that even their mentors encountered obstacles in their professional paths. Mentoring those with imposter syndrome can greatly help the mentee and be a rewarding experience for the mentor.

Recognize your strengths and accomplishments

One must take the time to recognize their successes, no matter how small, and be proud of one's accomplishments. It is important to make an accurate evaluation of one's abilities. Everyone has certain abilities that they excel at and others that they may need more practice with. Acknowledge that not everything is feasible, and part of the purpose of residency is to gain more knowledge and become more proficient. It is essential to be aware of what one is doing well and where they need more practice.

Challenge your limiting beliefs

Many individuals have encountered times when they do not feel fully confident in themselves. A surgeon's day can be unpredictable, and they may view this unpredictability as an enjoyable challenge. There may be times when one may feel overwhelmed, and self-doubt may be a normal response. To help build self-confidence and better manage the challenges, one can reframe their thoughts to remind themselves that feelings of inadequacy in the present moment do not indicate an inability to manage the task at hand efficiently. This can help to build self-confidence and manage challenges well.

Acknowledge positive feedback

One must acknowledge the positive feedback they receive from others. This may help them believe in their abilities and prevent

attributing their success to circumstances. By acknowledging achievements and actual ability, individuals with imposter syndrome can be empowered to strive for their highest career goals without compromising mental or physical health. Lastly, it is important to persist regardless of how one feels and not wait until everything is ideal before attempting something. Taking risks and pushing past one's comfort zone are important steps toward self-improvement.

CONCLUSIONS

Imposter syndrome variably affects surgeons at all career stages and has profound psychological and professional implications, and it must be considered a systemic problem rather than a personal challenge. Studies have shown that impostorism is frequently associated with burnout, suicidal ideation, compromised wellness, low self-esteem, and lower levels of professional fulfillment. Efforts to reduce the prevalence of imposter syndrome and the associated distress are necessary. This involves addressing professional norms, perfectionistic behaviors, and system factors, instilling a growth mindset, and reducing the stigma around help-seeking. Acknowledging symptoms and identifying the problem are the first steps, followed by eliminating misdirected self-doubt and taking steps to address negative thoughts and behaviors. Acknowledging achievements and actual ability could empower those affected to reach their highest career goals.

Collaborators The Eastern Association for the Surgery of Trauma Equity, Diversity, and Inclusion in Trauma Surgery Practice Committee: Sofya H Asfaw, Milad Behbahaninia, Cristina B Feather, Kristina Z Kramer, Aimee K LaRiccia, William T H Terzian, Rikat Baroody, Alejandro Betancourt-Ramirez, Molly Douglas, Horacio M Hojman, Alexis M Moren, Ronnie N Mubang, Anthony Tannous, Minh-Tri Pham, Sahaja Atluri, and Maraya Camazine.

Contributors All authors participated in data interpretation and manuscript preparation.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; internally peer reviewed.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Bellal Joseph <http://orcid.org/0000-0002-2205-3061>

Esther S Tseng <http://orcid.org/0000-0003-2515-7744>

REFERENCES

- Beckman TJ, ed. The Imposter syndrome in physicians. In: *Mayo Clinic Proceedings*. Elsevier, 2022.
- Shanafelt TD, Dyrbye LN, Sinsky C, Trockel M, Makowski MS, Tutty M, Wang H, Carlasare LE, West CP. Imposter phenomenon in us physicians relative to the us working population. *Mayo Clinic Proceedings*; 2022.
- Legassie J, Zibrowski EM, Goldszmidt MA. Measuring resident well-being: impostorism and burnout syndrome in residency. *J Gen Intern Med* 2008;23:1090–4.
- Clance PR, Imes SA. The imposter phenomenon in high achieving women: dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice* 1978;15:241–7.
- Chrisman SM, Pieper WA, Clance PR, Holland CL, Glickauf-Hughes C. Validation of the clance imposter phenomenon scale. *J Pers Assess* 1995;65:456–67.
- Bhama AR, Ritz EM, Anand RJ, Auyang ED, Lipman J, Greenberg JA, Kapadia MR. Imposter syndrome in surgical trainees: clance imposter phenomenon scale assessment in general surgery residents. *J Am Coll Surg* 2021;233:633–8.
- Leach PK, Nygaard RM, Chipman JG, Brunsvold ME, Marek AP. Impostor phenomenon and burnout in general surgeons and general surgery residents. *J Surg Educ* 2019;76:99–106.
- Liu RQ, Davidson J, Van Hooren TA, Van Koughnett JAM, Jones S, Ott MC. Impostorism and anxiety contribute to burnout among resident physicians. *Med Teach* 2022;44:758–64.
- Lin E, Crijns TJ, Ring D, Jayakumar P. Imposter syndrome among surgeons is associated with intolerance of uncertainty and lower confidence in problem solving. *Clin Orthop Relat Res* 2022.
- Medline A, Grissom H, Guissé NF, Kravets V, Hobson S, Samora JB, Schenker M. From self-efficacy to imposter syndrome: the intrapersonal traits of surgeons. *J Am Acad Orthop Surg Glob Res Rev* 2022;6.
- Brown DW, Binney G, Gauthier Z, Blume ED. Fears and stressors of trainees starting fellowship in pediatric cardiology. *Pediatr Cardiol* 2020;41:677–82.
- Zaed I, Bongetta D, Della Pepa GM, Zoia C, Somma T, Zoli M, Raffa G, Menna G. The prevalence of imposter syndrome among young neurosurgeons and residents in neurosurgery: a multicentric study. *Neurosurg Focus* 2022;53:E9.
- Woolston C. Psychology: faking it. *Nature* 2016;529:555–7.
- Lynch KA, Brown RF, Steinhagen E, Jacobson DL, Malhotra N, Hendershot K, Brownson KE, Bialowas C, Abdou H, Smith BK, et al. Transition from trainee to educator in the operating room: a needs assessment and framework to support junior faculty. *Am J Surg* 2022;223:1112–9.
- Seys D, Wu AW, Van Gerven E, Vleugels A, Euwema M, Panella M, Scott SD, Conway J, Sermeus W, Vanhaecht K. Health care professionals as second victims after adverse events: a systematic review. *Eval Health Prof* 2013;36:135–62.
- Teunissen PW, Westerman M. Opportunity or threat: the ambiguity of the consequences of transitions in medical education. *Med Educ* 2011;45:51–9.
- Chao GF, Zakrisson TL, Oyeturji S, Gaston-Hawkins L, Sosa JA, Joseph B, Lindeman B. Underrepresented in medicine: making surgical training anti-racist. *Am J Surg* 2022;224:302–6.
- Villwock JA, Sobin LB, Koester LA, Harris TM. Impostor syndrome and burnout among American medical students: a pilot study. *Int J Med Educ* 2016;7:364–9.
- Swain W, Calac AJ, Neimeko CJ, Gasca L, Dodge Francis C. Understanding the experiences of American Indian and Alaska native students enrolled in allopathic and osteopathic medical degree programs. *J Racial Ethn Health Disparities* 17, 2022.
- Bester VS, Bradley-Guidry C. Assessing harmful bias and celebrating strength through the narratives of black/African American physician assistant students. *J Physician Assist Educ* 2022;33:157–63.
- Sirriyeh R, Lawton R, Gardner P, Armitage G. Coping with medical error: a systematic review of papers to assess the effects of involvement in medical errors on healthcare professionals' psychological well-being. *Qual Saf Health Care* 2010;19:e43.
- Rapport DJ, McGrady A, Mahajan V, Brookfield E. A physician who feels hopeless and worthless and complains of pain. *Curr Psychiatr* 2015;14:67.
- Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: a systematic review. *PLoS One* 2016;11:e0159015.
- Blakemore LC. Building self-confidence and other skills: what surgeons can learn from other professions. *J Pediatr Orthop* 2022;42:S32–4.
- Crawford WS, Shanine KK, Whitman MV, Kacmar KM. Examining the impostor phenomenon and work-family conflict. *J Manag Psychol* 2016;31:375–90.
- Whitman MV, Shanine KK. Revisiting the impostor phenomenon: how individuals cope with feelings of being in over their heads. In: *The role of the economic crisis on occupational stress and well being*. Emerald Group Publishing Limited, 2012.
- Rottinghaus PJ. Assessing career optimism and adaptability: toward the construct validation of the career futures inventory. Iowa State University, 2004.
- Thompson T, Davis H, Davidson J. Attributional and affective responses of impostors to academic success and failure outcomes. *Pers Individ Differ* 1998;25:381–96.
- Neureiter M, Traut-Mattausch E. An inner barrier to career development: preconditions of the impostor phenomenon and consequences for career development. *Front Psychol* 2016;7:48.
- Parkman A, Beard R. Succession planning and the impostor phenomenon in higher education. *CUPA-HR Journal* 2008;59:29–36.
- LaDonna KA, Ginsburg S, Watling C. Rising to the level of your incompetence": what physicians' self-assessment of their performance reveals about the imposter syndrome in medicine. *Acad Med* 2018;93:763–8.
- Paladugu S, Wasser T, Donato A. Impostor syndrome in hospitalists- a cross-sectional study. *J Community Hosp Intern Med Perspect* 2021;11:212–5.
- Dodson SJ, Heng YT. Self-compassion in organizations: a review and future research agenda. *J Organ Behavior* 2022;43:168–96.
- West CP, Dyrbye LN, Satele DV, Shanafelt TD, eds. Colleagues meeting to promote and sustain satisfaction (COMPASS) groups for physician well-being: a randomized clinical trial. In: *Mayo Clinic Proceedings*. Elsevier, 2021.
- Brower KJ. Professional stigma of mental health issues: physicians are both the cause and solution. *Acad Med* 2021;96:635–40.