

# Impostor Syndrome Could It Be Holding You or Your Mentees Back?



Subani Chandra, MD, FCCP; Candace A. Huebert, MD, FCCP; Erin Crowley, MD; and Aneesa M. Das, MD, FCCP

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"Everyone here is so successful! They are so smart and accomplished. I do not belong in this group. I wonder if I got invited by mistake." Many may have had similar thoughts to this at some point in their career. Such thoughts may be a sign of impostor syndrome (IS).

IS the feeling of fraudulence experienced by successful individuals who believe that their achievements are undeserved, despite objective evidence to the contrary. IS is prevalent among all health professionals including trainees, advanced practice providers, allied health professionals, and physicians. Although people with IS are successful, they consider themselves to be frauds and attribute their success to external factors, such as luck, rather than ability. Based on the conviction that they are not truly deserving of, or qualified for, the success and achievements attributed to them, they live in fear of being exposed as impostors.

IS is strongly associated with psychologic distress—especially depression and anxiety—and is linked to burnout, a problem that is increasingly recognized in physicians and trainees. Individuals with IS are typically

high achievers who seem to be doing well but may be struggling quietly. Trainees with IS are particularly vulnerable because they fail to internalize positive feedback, and disregard the accolades they receive, in the belief that others have a falsely high impression of their abilities. This approach, often combined with a fixed mindset of believing that ability or intelligence cannot be improved, can pose a significant constraint on the growth, learning, and confidence of those with IS. In fact, IS can be an unrecognized barrier to improving trainee wellness. Additionally, IS has a high prevalence not just in trainees but also in faculty and leadership, and it does not abate with time, experience, or success. Managing IS requires a multifaceted approach involving not only the individual affected but also the learning environment and pedagogic styles. In this article, we review the phenotypes, behaviors, and implications of IS. We also present several strategies to mitigate the negative impact of IS.

## Definition and Prevalence

IS was first described in the late 1970s by psychologists Clance and Imes as a

**ABBREVIATION:** IS = impostor syndrome

AFFILIATIONS: From the Division of Pulmonary, Allergy and Critical Care (Dr Chandra), Columbia University Vagelos College of Physicians and Surgeons, New York, NY; the Division of Pulmonary, Critical Care, Sleep, and Allergy (Dr Huebert), University of Nebraska Medical Center, Omaha, NE; the Division of Pulmonary and Critical Care (Dr Crowley), Indiana University School of Medicine, Indianapolis, IN; and the Division of Pulmonary, Critical Care, and Sleep (Dr Das), The Ohio State University, Columbus, OH.

CORRESPONDENCE TO: Aneesa M. Das, MD, FCCP, 201 Davis Heart & Lung Research Institute, 473 W 12th Ave, Columbus, OH 43210; e-mail: aneesa.das@osumc.edu

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phenomenon occurring among high achievers who are unable to internalize their success. Those affected by IS are convinced that their success is because of chance, rather than ability, and that their achievements are insignificant. Consequently, they believe that they are impostors amid highly successful people and do not belong among their peers, so they live with a fear of being "found out."

Although people with IS are often high achievers, they measure their competence not by their achievements but by an internal set of standards which are never perceived to be met. Young describes 5 different subtypes of IS based on self-imposed assessments of competence (Table 1).

Individuals with IS may not recognize their feelings of self-doubt and fraudulence as IS, but they may readily identify with aspects of IS, such as the fear of being "found out." Several instruments have been developed to help identify IS and assess its severity. One validated and well-studied measure is the Clance Impostor Phenomenon Scale (Table 2), which can be used to determine if an individual has IS and, if so, its severity.

IS affects both men and women across different cultures, occupations, ranks, and levels of success. In fact, many celebrities have acknowledged having feelings of impostorism, and it is estimated that 70% of people will experience IS at least once. Although Clance and Imes initially reported IS as a phenomenon occurring exclusively in women, further work has shown that men experience IS as well. Although men, just like women, can have low expectations of success and attribute their achievements to luck, some studies suggest that the severity of IS tends to be higher in women.

Medical professionals, including trainees, may be particularly vulnerable to IS. The competitive admissions process into health profession schools tends to select individuals who push themselves to perform well. Once selected, these top performers often find themselves surrounded by other similar high achievers, which normalizes their own achievements as typical rather than atypical. The process of medical training and transition to practice is fraught with new challenges, which can heighten feelings of self-doubt and impostorism. In 477 medical, dental, nursing, and pharmacy students at one university, Henning et al found the prevalence of IS to be 30%. Villwock et al reported that about 50% of women and 25% of men, out of 138 medical students, were affected by IS. Most studies show that impostor feelings do not abate with more years of training and experience. In fact, Villwock et al found that the fourth year of medical school was significantly associated with an increase in IS compared with earlier years in training. The high prevalence of IS continues into graduate medical education and beyond. Oriel et al surveyed 255 family medicine residents and found that about one-third had IS (41% of women and 24% of men). In another study of 48 internal medicine residents in Canada, Legassie et al reported that 43.8% had IS. Furthermore, foreign-trained residents had almost 11 times higher odds of having IS compared with local graduates. Given that approximately onequarter of postgraduate trainees and physicians practicing in the United States are international medical graduates, this finding is particularly striking. The failure to attribute achievements to one's inherent ability, and the fear that luck may not be so favorable next time, allows success to perpetuate the feelings of impostorism. As a result, the prevalence rate of IS among faculty also appears to be similarly high.

TABLE 1 ] Impostor Syndrome Subtypes

Subtype	Subtype Characteristics		
Perfectionist	Perceives competence as 100% perfection. Anything short of this is considered failure. This individual always focuses on how something could have been done better.		
Natural genius	Measures competence by how easily the achievement came to him/her. Hard work and perseverance are considered negative traits because this individual feels that success should have come more naturally to them.		
Superwoman/man or superstudent	Perceives competence as the ability to juggle numerous roles and responsibilities simultaneously. Falling even slightly short in one role (parent, caregiver, researcher, etc) constitutes overall failure even in the context of major successes.		
Expert	Measures competence by the volume of knowledge or skill. This individual fears being exposed as inexperienced because of lack of knowledge.		
Soloist	Perceives competence only if an achievement was obtained completely on their own without the aid of additional resources. Asking for help is considered a sign of failure.		

Adapted from Young.

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 TABLE 2
 The Clance Impostor Phenomenon Scale

1. I have often succeeded	on a test or task even th	nough I was afraid that I wo	ould not do well before I u	undertook the task	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
2. I can give the impressio					
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
3. I avoid evaluations if po	ssible and have a dread	of others evaluating me.			
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
<ol><li>When people praise me f the future.</li></ol>	or something I've accom	plished, I'm afraid I won't b	e able to live up to their ex	xpectations of me i	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
5. I sometimes think I obto place at the right time or		n or gained my present suc	ccess because I happened	d to be in the right	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
6. I'm afraid people import	tant to me may find out	that I'm not as capable as	they think I am.		
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
7. I tend to remember the	incidents in which I have	e not done my best more tl	nan those times I have do	one my best.	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
8. I rarely do a project or t	ask as well as I'd like to	do it.			
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
9. Sometimes I feel or beli	eve that my success in r	my life or in my job has bee	en the result of some kind	d of error.	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
10. It's hard for me to acco	ept compliments or prais	se about my intelligence or	accomplishments.		
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
11. At times, I feel my suc	cess has been due to so	me kind of luck.			
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
12. I'm disappointed at tin		nplishments and think I sho			
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
13. Sometimes I'm afraid others will discover how much knowledge or ability I really lack.					
	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
14. I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt					
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	
<ol><li>When I've succeeded a repeating that success.</li></ol>	at something and receive	ed recognition for my accon	nplishments, I have doub	ts that I can keep	
1	2	3	4	5	
(not at all true)	(rarely)	(sometimes)	(often)	(very true	

(Continued)

16. If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance o	f
what I've done.	

1	2	3	4	5
(not at all true)	(rarely)	(sometimes)	(often)	(very true)
17. I often compare my ability to those around me and think they may be more intelligent than I am.				
1	2	3	4	5
(not at all true)	(rarely)	(sometimes)	(often)	(very true)

18. I often worry about not succeeding with a project or examination, even though others around me have considerable confidence that I will do well.

1	2	3	4	5
(not at all true)	(rarely)	(sometimes)	(often)	(very true)

notion or gain recognition of complying. I hositate to tall others until it is an accomplished

	fact.					
	1	2	3	4	5	
	(not at all true)	(rarely)	(sometimes)	(often)	(very true)	
20. I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.						
					4	

1	2	3	4	5
(not at all true)	(rarely)	(sometimes)	(often)	(very true)

To take the test, for each question, please circle the number that best indicates how true the statement is of you. It is best to give the first response that enters your mind rather than dwelling on each statement and thinking about it over and over. The impostor test was developed to help individuals determine whether or not they have impostor phenomenon characteristics and, if so, to what extent they are suffering. To score the test, after taking the test, add together the numbers of the responses to each statement. If the total score is ≤ 40, the respondent has few impostor characteristics; if the score is between 41 and 60, the respondent has moderate impostor phenomenon experiences; a score between 61 and 80 means the respondent frequently has impostor feelings; and a score > 80 means the respondent often has intense impostor phenomenon experiences. The higher the score, the more frequently and seriously the impostor phenomenon interferes in a person's life. (From The Impostor Phenomenon: When Success Makes You Feel Like A Fake (pp. 20-22), by P.R. Clance, 1985, Toronto: Bantam Books. Copyright 1985 by Pauline Rose Clance. Reprinted by permission. Do not reproduce without permission from Pauline Rose Clance, drpaulinerose@comcast.net.)

#### **Impact**

IS has significant impact on an individual's psychologic, physical, and professional well-being (Table 3). The failure to internalize success, harboring feelings of selfdoubt, having an external locus of control, and the pervasive need to maintain the impression of ability all interfere with the psychologic well-being of those with IS. IS is significantly associated with psychologic distress in trainees, including depression and anxiety. In fact, among students in medicine, dentistry, nursing, and pharmacy schools, the severity of IS was more strongly correlated with general psychologic distress than all of the demographic and personality data evaluated, including age, sex, race, marital status, academic year, and history of mental health treatment.

Individuals with IS tend to place themselves under a lot of pressure to avoid failure. In particular, when faced with a task that may have high visibility, the anxiety of potential failure combined with their unrealistic high standards causes them to react in maladaptive ways such as perfectionism and procrastination. Those who overwork, overprepare, and seek perfection (such that the input is out of proportion to the impact on the

quality of their work) attribute their success to the amount of work put into the task. Those who procrastinate and do intense preparation at the last minute attribute their success to luck. Individuals with IS are unable to break these maladaptive work habits because of the fear that any deviation will increase the likelihood of failure. This can lead to physical and mental exhaustion, such that these individuals feel uncertain about their ability to maintain their high level of performance. As a result, they may avoid prominent opportunities with the consequence of failing to reach the full scale of their potential. Indeed, individuals with IS may develop a fear of success because of the additional responsibility and visibility that can come with it. This is particularly poignant in the academic setting where new challenges are continually encountered and there is an emphasis on frequent evaluations of performance.

Notably, these conditions of work-related stress, physical and emotional exhaustion, and other psychologic comorbidities that overlap with IS are also associated with burnout. Villwock et al examined the association between IS and burnout in medical students and found

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#### TABLE 3 | Implications of Impostor Syndrome

- A strong association with general psychologic distress, anxiety, and depression
- Burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment)
- Physical exhaustion and overwork
- · Avoidance of tasks with high prominence and visibility
- Fixed mindset
- · Dismissal of positive feedback

that IS was significantly correlated with multiple components of burnout syndrome, including emotional exhaustion, depersonalization, and reduced personal accomplishment. Legassie et al studied this relationship in 48 internal medicine residents and reported a negative correlation between IS and the personal accomplishment scale. This is probably not surprising given that individuals with IS feel undeserving of their accomplishments.

Despite their self-perceived fraudulence, professionals with IS are typically high achievers who effectively fulfill their clinical and academic work, even at significant cost to their psychologic well-being. However, their growth may be impeded by having a fixed mindset with the belief that accomplishment through hard work does not improve their true ability. They disregard positive feedback by attributing their success to circumstance rather than their own skill. As a result, neither objective evidence of success nor sincere subjective assurances of superior performance remove the feelings of impostorism. It is important for program directors, mentors, and those in supervisory roles to note that even high-achieving, successful individuals may be struggling and that positive feedback may not be enough to help them. It is imperative to recognize and manage IS in those who have it.

#### Managing IS in Ourselves

Most people with impostor feelings suffer in silence given that the core of impostorism is a fear of being "found out." The essential initial step in dealing with IS is recognizing it and naming the impostor-like feelings for what they are. This can help one understand the feelings of inadequacy and fraudulence in the right context. Naming the problem also opens up dialogue surrounding it, so one does not have to suffer in isolation.

Although some feelings of self-doubt are usual and expected, these should not lead to the belief that one does not deserve to succeed. Individuals with IS

deemphasize their success, which may seem like humility, but being modest is different from believing one has somehow managed to fake one's way to the current position. The superstudent/woman/man subtype of IS focuses on their shortcomings and can often overlook their many achievements. An objective evaluation of one's successes and the skills that contributed to those can help combat these beliefs. One way of doing so is to conduct a personal career success inventory by listing one's achievements and the core skills used to bring these to fruition. Additionally, listing things that one does well can shift the focus from weaknesses to strengths.

However, the task of listing successes and strengths in an objective and truthful manner for someone experiencing IS is likely to be stressful. Another option to provide a realistic assessment of one's abilities is to use strong relationships with mentors and colleagues. The supportive and encouraging guidance of mentors can help one recognize feelings of impostorism as both common and irrational. Having trusted colleagues in whom to confide impostor feelings reduces stress and tension and can remove the sense of isolation. In particular, this technique can help those with aspects of the soloist subtype to embrace a sense of community as being part of success. Peers can also provide objective and realistic feedback. Nonetheless, changing the deep-rooted beliefs that led to IS in the first place takes time and persistence.

Breaking the cycle of impostor-like thinking is critical to overcoming IS. Thought stopping and shipping are two methods one can use to change patterns of thought. Thought stopping is a self-practiced cognitive intervention aimed at interrupting problematic thoughts that are common in those with aspects of the natural genius and expert subtypes. The basis of the technique is to be mindful of negative thoughts and replace them with something more positive. Rooting these positive

#### TABLE 4 ] Strategies to Manage Impostor Syndrome

- Recognize, acknowledge, and share feelings of impostor syndrome with trusted colleagues
- Realize you are not alone
- Ask mentors and trusted colleagues for objective and truthful feedback
- Reference your personal career success inventory
- · Practice self-compassion
- · Maintain a growth mindset
- · Practice thought stopping
- See a counselor

thoughts in self-compassion and kindness toward oneself allows one to generate a more constructive and uncritical view of one's abilities. Shipping, a term used in business literature, represents the concept of not waiting until an idea is perfect before launching or presenting it. Shipping pushes one outside one's comfort zone, which is a strong stimulus for growth and creativity especially for the perfectionist and expert IS subtypes. It also builds self-compassion by allowing one to forgive one's mistakes. Professional therapy and counseling can help provide additional depth to the tools used to break the cycle of impostor-like thinking.

## Addressing IS in Those We Teach

Recognizing and addressing IS in those we teach and mentor is just as important as managing IS in ourselves. IS can prevent trainees from reaching their highest potential and has several implications for medical education. Given the large number of trainees with IS, it is important to adapt pedagogic approaches and create a supportive learning environment. In fact, a number of institutions have developed specific structured interventions to manage IS in students. Programs that empower trainees to recognize and manage IS can help trainees optimize their performance.

Several of the techniques mentioned, to mitigate IS in oneself, can also be used to address IS in trainees. A mentor can help a mentee understand that their feelings of inadequacy and fraudulence are in fact a result of IS. Not only does this let individuals with IS know that they are not alone, it can also strengthen honesty and trust in the mentor-mentee relationship. This trust can play a vital role in sharing an objective assessment of a trainee's abilities with them. Focusing on the facts of accomplishments, and attributing them to skill and ability rather than external factors, can help trainees internalize their success. For example, if a trainee attributes a positive outcome to luck, a mentor can help reframe their thoughts by crediting their success to internal factors, such as being efficient or leading with authority.

Furthermore, mentors can play an important role in shifting a fixed mindset that often accompanies IS to a growth mindset. This helps trainees with IS to view setbacks as an inherent part of learning and growth rather than accepting them as proof that they are impostors. Some tips for nurturing a growth mindset include providing multifaceted feedback, viewing

struggle as opportunity, praising an attempt at a new approach and well-directed effort instead of intelligence alone, and encouraging self-reflection with goal setting.

Comparing oneself with others is oftentimes a cornerstone of the IS experience, especially when others are perceived as being more competent. Research suggests that the environment that teachers create can significantly affect whether a student views the space as an opportunity to learn, or as a venue to compare and contrast themselves with their peers. The former is a more stable form of motivation, and the latter is far more stressful. Teaching in a way that can expose a trainee's inadequacies can suppress creativity and intellectual curiosity because of fear of embarrassment; these feelings are heightened in IS. Trainees with IS hesitate to answer unless certain of success, therefore missing opportunities to learn and showcase ability. IS may play a significant role in the learning and growth of trainees. Modifying teaching styles and providing support and guidance to manage feelings of impostorism can have a significant impact on the course of trainees' careers and well-being. The strategies to combat IS are summarized in Table 4.

#### Conclusions

IS is prevalent in the medical profession and has serious psychologic and professional implications, particularly for trainees. The first step to addressing IS is increased awareness. Once identified, affected individuals, and mentors and educators, can work to eliminate the misplaced self-doubt and take steps to address negative thoughts and maladaptive behaviors. By acknowledging achievements and true ability, individuals with IS can be empowered to strive for their highest career goals while maintaining mental and physical wellness.

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## Suggested Readings

Clance PR, Imes SA. The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research Practice.* 1978;15(3):241.

Imes S. The impostor phenomenon as a function of attribution patterns and internalized femininity/masculinity in high achieving women and men. *Diss Abstr Int.* 1980;40(12-B, Pt 1):5868-5869.

Henning K, Ey S, Shaw D. Perfectionism, the impostor phenomenon and psychological adjustment in medical, dental, nursing and pharmacy students. *Med Educ.* 1998;32(5):456-464.

Oriel K, Plane MB, Mundt M. Family medicine residents and the impostor phenomenon. Fam Med. 2004;36(4):248-252.

chestjournal.org 31

Prata J, Gietzen JW. The imposter phenomenon in physician assistant graduates. J Physician Assist Educ. 2007;18(4):33-36.

Legassie J, Zibrowski EM, Goldszmidt MA. Measuring resident well-being: impostorism and burnout syndrome in residency. J Gen Intern Med. 2008;23(7):1090-1094.

Sakulku J. The impostor phenomenon. Int J Behav Sci. 2011;6(1):75-97.

Young V. The Secret Thoughts of Successful Women: Why Capable People Suffer From the Impostor Syndrome and How to Thrive in Spite of It. New York: Crown Pub; 2011.

Hutchins HM. Outing the imposter: a study exploring imposter phenomenon among higher education faculty. Journal of New Horizons in Adult Education Human Resource Development. 2015;27(2):3-12.

Parkman AJ. The imposter phenomenon in higher education: Incidence and impact. Journal of Higher Education Theory Practice. 2016;16(1):51.

Villwock JA, Sobin LB, Koester LA, Harris TM. Impostor syndrome and burnout among American medical students: a pilot study. Int J Med Educ. 2016;7:364-369.

Koven S. Letter to a young female physician. N Engl J Med. 2017;376(20): 1907-1909.

Patzak A, Kollmayer M, Schober B. Buffering impostor feelings with kindness: the mediating role of self-compassion between gender-role orientation and the impostor phenomenon. Front Psych. 2017;8:1289.

Clance PR. The Impostor Phenomenon: When Success Makes You Feel Like a Fake. Toronto, Canada: Bantam Books; 1985:20-22.