



MENTORING MEDICAL STUDENTS THROUGH THE IMPOSTER PHENOMENON

2021 Updates

DISCLOSURES

The opinions and assertions contained herein are those of the authors and are not to be construed as official or as reflecting the views of the US Army Medical Department, the Army at large, or the Department of Defense.

Audience Poll

Who do we have in the audience today?

- Medical Student
- Resident or Fellow
- UME Faculty
- GME Faculty
- Administrator or Coordinator

When have you felt:

- Inadequacy
- Self-Doubt
- Sense of Fraudulence

Despite your success?





- PEOPLE WHO GET IMPOSTER SYNDROME
- OTHER PEOPLE WHO GET IMPOSTER SYNDROME
- LITERALLY EVERYONE ELSE (THEY ALSO GET IMPOSTER SYNDROME)

EVERYONE FEELS LIKE AN IMPOSTER
SOMETIMES, AND THAT'S OKAY

ERRANTSCIENCE.COM

Objectives

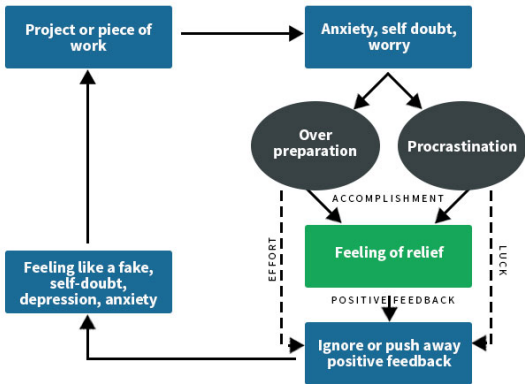
1. Apply imposter phenomenon evidence to medical student mentorship
2. Build skills and implement techniques as mentors to lead students through feelings of self-doubt and fraud
3. Formulate a plan to create a safe learning environment at your institution that stifles imposter phenomenon and produces confident students
4. Practice self-efficacy skills and demonstrate this to learners

What is the Imposter Phenomenon?

- Origin
- Evidence
- Impact



The Imposter Cycle



Impostor syndrome and burnout among American medical students: a pilot study

Jennifer Villwock¹, Lindsay B. Sobin², Lindsey A Koester³, Tucker M. Harris⁴

IS Prevalence:

- 49.4 % of females
- 23.7% males

Table 2. Each burnout component is stratified by presence or absence of IS (N=138)

Burnout Components	Degree of Burnout N (%)		
	High	Moderate	Low
★ Depersonalization*			
IS	14 (27)	18 (35)	20 (38.5)
No-IS	7 (8.1)	28 (33)	51 (59)
Personal Accomplishment			
IS	8 (15)	19 (37)	25 (48)
No-IS	16 (19)	25 (48)	50 (58)
★ Emotional Exhaustion*			
IS	25 (48)	19 (37)	8 (15)
No-IS	23 (26)	35 (40)	28 (32)
Professional Efficacy			
IS	1 (2)	4 (8)	47 (90)
No-IS	0 (0)	5 (6)	81 (94)
★ Exhaustion			
IS	40 (77)	12 (23)	0 (0)
No-IS	50 (58)	33 (38)	3 (3.5)
★ Cynicism			
IS	36 (69)	15 (29)	1 (1.9)
No-IS	15 (29)	46 (54)	0 (0)

*The burnout component is significantly associated with IS ($p < 0.05$).

Original Publication

Small-Group Discussion Sessions on Imposter Syndrome

Natalie Baumann, MD*, Carol Faulk, MD, Jessica Vanderlan, PhD, Justin Chen, MD, Rakhee K. Bhayani, MD

*Corresponding author: natalie.m.baumann@gmail.com

21 residents in small group discussion about IS

- 96% felt comfortable recognizing imposter syndrome in themselves
- 62% knew the appropriate next steps after identifying imposter syndrome

Table 2. Imposter Syndrome Postsession Survey Free Responses

Question	Free-Response Answers
What did you like the most about wellness report?	"I always appreciate discussion." "Good discussion, good topic for early in the year." "Discussion." "Open discussion format." "Concise!" "Open discussion." "Nice to see the class." "Good questions, liked mixed with interns." "The topic was perfect for this time of year as we each transition to a new role with new responsibilities that may make us uneasy or feel the imposter syndrome."
What can we do to improve future wellness reports such as this?	"Knowing the topic in advance." "Food." "Keep to 30 min." "Have food." "Food, more emphasis on what to do versus recognizing it." "Bring food." "This would be good in groups of six. Two interns, two JARs (second-year residents), two SARs (third-year residents)." "Preventing burnout." "Puppies, pet therapy."
Do you have suggestions for future wellness reports?	

Audience Poll

What factors or experiences are present in your institution that can be related to the imposter phenomenon? Choose all that apply.

- You know a student, resident, or faculty who may identify with IP
- Low self-esteem is common in learners
- Frequent personal reflection is encouraged
- There is a pervasive desire for perfectionism
- Perceived or actualized disparities in learning experience by gender
- Accomplishments are celebrated
- Asking for help seen as a sign of weakness
- There are active mentorship relationships or programs
- You have held workshops or discussion on IP

Impostor syndrome among physicians and physicians in training: A scoping review

Michael Gottlieb¹  | Arlene Chung² | Nicole Battaglioli³ | Stefanie S. Sebok-Syer⁴ | Annahieta Kalantari⁵

- 18 studies identified in this review
- Prevalence: 22 to 60% in medical students
- Contributing factors: female gender (bias?), students and residents with low self esteem, perfectionism, asking for help seen as a sign of weakness
- Protective factors (few studies): personal reflection, keeping a record of successes, celebrating accomplishments, seeking mentors, workshops on IS

Impact on medical education

- Peak symptoms in clinical years
- Prime opportunities to intervene with mentorship
- Effects on student-patient relationships and empathy

What happens if we do not intervene?

Mentorship Roles

1. Identifying an imposter
2. Changing culture
3. Skills: normalize, challenge, and affirm



1. Identifying: Presentation of an Imposter

- Avoidant behavior
- Academic
 - Cognitive performance
- Professionalism
 - Poor time-management
 - Charting difficulty
 - Poorly-rated patient interactions
 - Poor perception by colleagues

Audience Poll

We speculate that the COVID-19 pandemic has caused a drastic increase in imposters. Perhaps this is due to shifting learning environments to decentralized or virtual environments, which may increase anxiety and contribute to over-preparation or procrastination.

Has COVID-19 increased the number of imposters at your institution?

- Definitely
- Very Probably
- Possibly
- Probably Not

2. Change the Culture



Reflecting on Shame in Medical Education:

How does your institution respond when a student makes a mistake?

What should the future culture of medical education look like?



3. Mentorship Skills

1. Normalize imposter feelings
2. Challenge negative self-talk
 - Labels
 - Always/never statements
3. Affirm positive work

Beyond Imposter: Tips for Self-Efficacy



Self-efficacy Tips

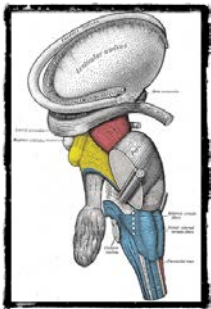
- Power pose 2 minutes with a student
- Open body posture during encounters
- Practice reflection: tell YOUR story to yourself
- Be prepared to disappoint, and learn
- Confidence Prescription

Self-Efficacy

“The belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations.”

Origins

- Primitive brain (reptilian)





- Enlarge posture for competition





- Enlarge posture for attraction



- Open posture after victory
- Closed posture after defeat



Neuroendocrine Markers

- Short-term, adaptive responses (fight or flight)
 - Testosterone & cortisol
- Chronic, maladaptive
 - HTN, memory loss, impaired immunity
- Posture & association????

Concept 1

- High-power poses:
 - Testosterone **UP**
 - Cortisol **DOWN**
 - More likely to act (83%)
- Low-power poses:
 - Testosterone **DOWN**
 - Cortisol **UP**
 - Less likely to act (60%)

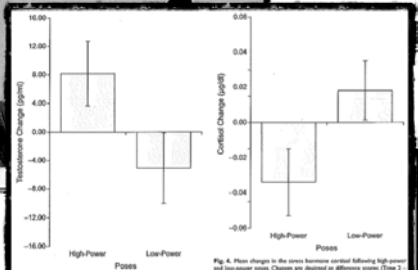


Fig. 3. Mean changes in the androgen hormone testosterone following high-power and low-power poses. Changes are depicted as difference scores (Time 2 - Time 1). Error bars represent standard errors of the mean.

Fig. 4. Mean changes in the stress hormone cortisol following high-power and low-power poses. Changes are depicted as difference scores (Time 2 - Time 1). Error bars represent standard errors of the mean.

Concept 1

- Power poses improved cognitive processing & abstraction
- More likely to act (81% vs 58%)
- Pose had greater effect than position
- **Power pose 2 minutes**



Choose and hold your Power Pose

2 Minutes



Perceptions of Nonverbal Cues

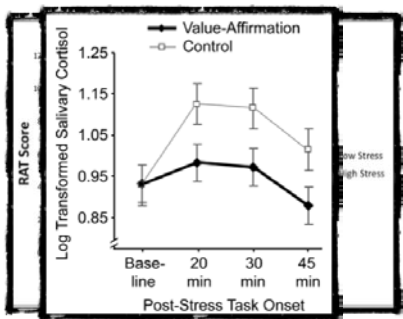
- Averted gaze & posture
 - Decreased perception of empathy (2.1)
- Patient-oriented gaze & posture
 - Improved perception of empathy (4.8)
- Soccer study: avoidant worse performance

Concept 2

- Closed (& averted) nonverbal cues worsen perception & limit performance
- Open nonverbal cues improve perception & performance
- May translate to improved staff, peer, & patient perception*
- **Open body posture during encounters**

Concept 3

- Self-affirmation: NOT body language study
- Protects against stress
- Improves cognitive performance
- Effect on chronically-stressed



Creswell JD1, Welch WT, Taylor SE, Sherman DK, Gruenewald TL, Mann T. Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychol Sci.* 2005 Nov;16(11):846-51.

Creswell JD, Dutcher JM, Klein WM, Harris PR, Levine JM. Self-affirmation improves problem-solving under stress. *PLoS One.* 2013 May 1;8(5):e62593.

Concept 3



- Self-affirmation works
- Values-based exercise
 - Ideas must reflect core values
- **Tell YOUR story to yourself**

Reflection Exercise to Build Self-Efficacy

Ask your students or residents to select their top core values

Then have them write a short story when those values helped them tackle a challenging situation

3 Minutes

Core Values List

Authenticity	Determination	Justice	Reputation
Achievement	Duty	Kindness	Respect
Adventure	Excellence	Knowledge	Responsibility
Authority	Fairness	Leadership	Security
Autonomy	Faith	Learning	Service to others
Balance	Fame	Love	Self-Respect
Beauty	Family	Loyalty	Service
Boldness	Friendships	Meaningful Work	Spirituality
Compassion	Growth	Openness	Stability
Challenge	Happiness	Optimism	Success
Commitment	Honesty	Peace	Status
Community	Honor	Perseverance	Teamwork
Competency	Humility	Pleasure	Trustworthiness
Contribution	Humor	Poise	Wealth
Courage	Influence	Popularity	Wisdom
Creativity	Inner Harmony	Recognition	
Curiosity	Integrity	Religion	

Concepts 4-5

- Self-kindness, reflection, growth
- "Be prepared to disappoint, and learn"
- Confidence Prescription

For _____	Date _____
Address _____	_____
Rx	
<i>Dx: Low confidence</i>	
<i>Power Pose; Sig: Pose 2 min before presentations prn</i>	
<i>Open body posture when speaking to others</i>	
<i>Know your values and how they help you</i>	
<i>Avoid negative self-talk</i>	
<i>Observe positive traits in others; copy them</i>	
<i>Be prepared to disappoint, and learn</i>	
REFILL _____	TIMES _____, M.D.
DEA NO. _____	Address _____

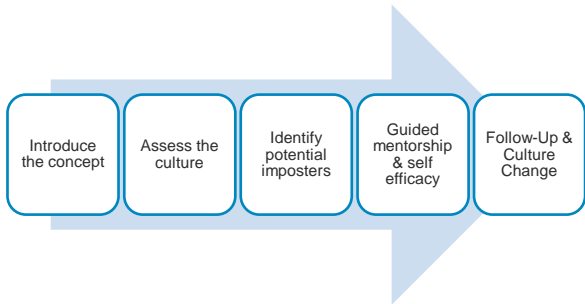
Self-efficacy Tips

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Bringing it Home: Making an Impact



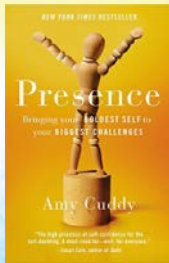
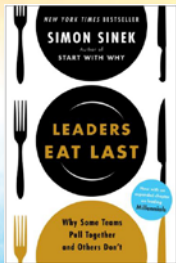
Making impact at your institution



Closing Points

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2. Built skills and implement techniques as mentors to lead students through feelings of self-doubt and fraud
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Additional Resources



Amy Cuddy's TED Talk:

https://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are?language=en

Join the conversation on Twitter #MSE20

THANK YOU



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