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Understanding and Overcoming the Psychological Barriers to Diversity: Imposter Syndrome and Stereotype Threat

Gabriela Heslop[1] · Juliana Bonilla-Velez[2,3,4] · Erynne A. Faucett[5] · Cristina Cabrera-Muffly[1]

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Abstract

Purpose of Review To define and describe imposter syndrome and stereotype threat with a focus on otolaryngology trainees and faculty. To describe how imposter syndrome and stereotype threat are detrimental to career advancement within otolaryngology. To identify individual, departmental, and systemic health system strategies to mitigate the effects of imposter syndrome and stereotype threat.

Recent Findings Imposter syndrome can affect anyone but disproportionately affects women, underrepresented minorities, and trainees or early career faculty. In a similar way, stereotype threat can derail advancement opportunities and disproportionately affects certain groups within otolaryngology. Helpful mitigation strategies have been described in the literature and are more effective when individual, departmental, and systemic approaches are combined.

Summary Self-development and joy in work rely on a positive, inclusive work environment. Mitigating burnout and stress includes addressing imposter syndrome and stereotype threat within otolaryngology, especially among groups that are more susceptible to these hindrances.

Keywords Imposter syndrome · Stereotype threat · Diversity equity and inclusion · Otolaryngology

Introduction

Imposter Syndrome

Imposter syndrome was first introduced in the literature in 1978 and was thought to be solely experienced by high-achieving women [1]. Over time it became clear that this did not only impact females or high-achieving individuals: it can impact any individual. Traditionally, imposter syndrome is identified when an individual feels like a fraud, fears discovery, and struggles with accepting success. Their actions will then usually stem from these beliefs [2]. For example, someone suffering from imposter syndrome might have increased anxiety during proficiency evaluations and might not attribute their achievements to their own abilities. Imposter syndrome has been a topic of interest in the medical community for the last decade and more so in the past few years. It has been found to occur more commonly in the medical community than in other fields, possibly for various reasons including being among a group of high-achieving peers and working in a career that demands extensive self-sacrifice [3••]. Some have suggested an association with female gender, [4, 5] underrepresented minorities, [6••]

✉ Cristina Cabrera-Muffly
Cristina.cabrera-muffly@cuanschutz.edu

Gabriela Heslop
GABRIELA.HESLOP@CUANSCHUTZ.EDU

Juliana Bonilla-Velez
Juliana.Bonilla-Velez@seattlechildrens.org

Erynne A. Faucett
eafaucett@ucdavis.edu

1 Department of Otolaryngology Head and Neck Surgery, University of Colorado School of Medicine, 12631 E 17th Ave, Rm 3110, Aurora, CO 80045, USA

2 Division of Pediatric Otolaryngology, Seattle Children's Hospital, Seattle, WA, USA

3 Department of Otolaryngology-Head and Neck Surgery, University of Washington School of Medicine, Seattle, WA, USA

4 Center for Clinical and Translational Research, Seattle Children's Research Institute, Seattle, WA 98101, USA

5 Department of Otolaryngology-Head and Neck Surgery, University of California, UC Davis Medical Center, Sacramento, CA, USA

and younger age [5•]. Studies have also found an association between imposter syndrome and burnout [3••, 4, 7], anxiety [8], and suicidal ideation [3••]. Among surgeons, it has been associated with intolerance of uncertainty and low confidence in problem solving skills [9]. Imposter syndrome has been thought to impact one's ability to lead, their professional development, and mental health [10].

Stereotype Threat

A psychological threat is when an individual perceives an environment to be stressful beyond their capacity for maintaining their well-being [11]. Stereotype threat is a type of psychological threat where an individual experiences stress as a result of being in a situation that involved the application of a negative stereotype about a group to which the individual belongs [12]. Shapiro and Neuberg have broken this into a multi-threat concept where there are multiple threats occurring in a single scenario. The first threat produces stress based on how an individual perceives oneself or the group to which they belong. The second threat produces stress because of how the nonstereotyped group views the individual or the stereotyped group. The third threat produces stress as a result of how the stereotyped group views the individual or itself [13]. Stereotype threat has been studied across multiple groups throughout society including females, African Americans, Latinx individuals, White male athletes, and the elderly. In medicine, evaluations of stereotype threat have focused on gender and surgical residency [14, 15•], professional identity formation and underrepresented in medicine learners [16•], and women in academic medicine [17, 18]. The consequences of stereotype threat are important and can be both momentary and long-term. Previously reported outcomes have included poor performance by the stereotyped individual, their detachment from the environment where the threat was experienced, and their detachment from the stereotyped group or aspects of the stereotyped group [19]. When facing a psychological threat, an individual undergoes the process of cognitive appraisal and then coping. Cognitive appraisal includes the individual's interpretation of the situation as a threat (as opposed to considering it a loss or challenge), how they grade the severity of the threat, and their perceived ability and resources to cope with the threat. Following cognitive appraisal, the individual copes with the threat. Their selected coping mechanisms depend on their cognitive appraisal of the event [20]. Coping has been categorized into social, problem-focused, emotion-focused, and meaning-focused. Examples of coping mechanisms include active coping, avoidance, support seeking, and positive cognitive restructuring [21].

Diversity exists in many forms including gender, race, ability, language, weight, religion, social class, age, and sexual orientation. One person can present multiple facets of diversity, and each can contribute to identity development. Stereotypes are based on impressions that others form about a group. They also contribute to identity development as individuals navigate stereotypes throughout their life. Each facet of diversity presents a distinct opportunity for stereotyping, which can then have an impact on the beliefs one holds about themselves as they enter the medical environment. While medical schools, residency programs, and departments across the country work to increase their diversity, it is important to consider the barriers that diverse persons face when performing within the medical system. Imposter syndrome and stereotype threat are two well-studied psychological barriers that can compromise the success of the very people we desire to support. Employing interventions to overcome these barriers must be a focus on multiple levels including personal, departmental, institutional, and system. Here, we better characterize how these two psychological barriers present at each level, and we discuss level-appropriate tools that can be used to address them.

Overcoming Personal Barriers

Imposter syndrome is generally perceived as an individual's internal experience of self-appreciation [22]. This phenomenon is more common among high-performers and perfectionists who conceptualize their self-worth by their perceived achievements [23]. The personality traits that have served as an advantage to successfully become a physician can also make those in our profession more susceptible to negative consequences such as imposter syndrome and stereotype threat [23]. These individual susceptibilities can be further amplified in the high-intensity environment that characterizes the medical profession, notably the responsibility of managing people's health and making decisions with little room for failure [24]. The excessively demanding nature of the medical profession can be further accentuated in competitive subspecialties [23]. Over time, fraudulent feelings can contribute to states of anxiety, depression, and burnout and have a great cost to physician well-being [23].

Imposter syndrome can carry a large personal cost and is often difficult to recognize in oneself. Common behaviors among those with imposter syndrome include perfectionist tendencies and self-deprecating behavior [25]. Individuals are haunted by thoughts suggesting that they are "not good enough and carry a fear of "discovery" where their peers or superiors will "find out the truth" [25]. They often focus on their mistakes and feel shame or disappointment when they fail [25]. They can push themselves to the limit to prevent "exposure," not accepting when an effort is "good-enough,"

which in turn leads to a vicious cycle of effort, dissatisfaction, and fear that further damages self-esteem [25]. Individuals are not satisfied with or underestimate their achievements, often refusing their own success by describing it as "easy" or dismissing compliments from peers or superiors [25]. Over time, individuals become emotionally exhausted and unable to sustain their innate capabilities and fully contribute to their profession [26].

Imposter syndrome can have a significant impact on a person's mental health and wellness. The vicious cycle of negative self-attribution, lack of self-confidence, and, sometimes, self-sabotage can be mentally debilitating and contribute to mental illness such as anxiety and depression [24]. Individuals may set themselves "unattainable" goals that, over time, can lead to inability to cope with disappointment and failure and perpetuate a cycle of frustration and burnout [24].

People with imposter syndrome can employ several coping mechanisms that can be costly in the long-term. These are unconscious behaviors to manage the anxiety of waiting to be "found out" or exposed. They can include [1] holding back or flying under the radar, [2] over-preparing and hard work, [3••] use of charm and perceptiveness, [4] procrastinating, [5•] never finishing, [6••] maintaining a low or ever-changing profile, [7] and self-sabotage [27]. These maladaptive strategies can help with anxiety but at a high cost to the individual. Some of the costs include holding back on sharing ideas or asking questions, avoiding more challenging opportunities or assignments, being overlooked for promotions, taking constructive feedback too personally, procrastinating on important projects, frequent job changes, and sabotage of successes, thereby causing unnecessary psychological stress and fatigue [27]. These affect the organization by having fewer ideas and solutions, more lost opportunities, reduced talent pool, inachieving goals, costly hiring searches, and lost productivity and burnout [27]. Imposter syndrome can halt career progression and impact the profession, hospital systems, and patient care [24].

For some, the problem and the solution are individual and internal, where their self-doubting mindset causes them to misjudge their own merit and abilities. As such, it can affect people from different backgrounds and stages of their career. For others, these feelings of inferiority have been exacerbated by external factors, erroneous social paradigms, or expectations that come from a toxic environment, society, and/or culture [26]. In support of this claim, imposter syndrome has been recognized more frequently among particular groups such as women, underrepresented in medicine (URiM), early career professionals, or those who work in academic settings [3••, 6••]. A cross-sectional study of surgeons across specialties showed that male and older-age surgeons demonstrated lower levels of imposter syndrome and perfectionism, and higher assertiveness, while the opposite was observed among women and younger surgeons [5•]. In these situations, addressing imposter syndrome requires systemic solutions that lead to repairs to our culture [26].

The mechanisms by which vulnerable groups are at higher risk of imposter syndrome can also be attributed, at least in part, to the presence of stereotype threat. Stereotype threat among those who identify as part of a particular group can lead to stress, negative mood (anxiety, frustration, disappointment, and sadness), increased monitoring of one's behavior, greater emotional regulation, reduction in mental capacity, and a decrease in motivation; all of which impair performance [17]. The effect of intersectionality among vulnerable groups can further increase the risk for individuals. Among students, impostor syndrome was a stronger predictor of mental status than the stress of their minority status [6••]. Additional factors that contribute to imposter syndrome among women, URiM, and early career professionals will be further described.

Women

Women are under-represented in surgery, especially in leadership and academic roles [28•]. Varied sources of women's underrepresentation have been proposed and encompass issues around life balance, workload and parental leave entitlements, availability of role models and mentors, sexual discrimination and harassment, implicit bias, and epistemic injustice (occurs when stereotyping unfairly distorts judgments about an individual's expertise) [28•]. In-depth semi-structured interviews with Australasian women surgeons have reported four types of bias affecting women surgeons: (1) workplace factors such as access to parental leave and role models, (2) epistemic injustices which can impact their credibility, trust, and authority between surgeons and their patients and colleagues, (3) stereotyped expectations such as being more responsible for meeting the emotional needs of patients, and (4) objectification [28•]. The additional stressors from subtle or overt messages in toxic environments, implying that women do not belong, can instill self-doubt and contribute to loss of self-esteem, burnout, and quitting specific jobs or the profession [26]. Individual traits and group social behaviors that enable imposter syndrome should be identified and modified as an initial step in improving these toxic environments [26]. These pressures can have an effect on how women perceive and value themselves and can lead to changes in work practices that can accumulate and/or interact to create more serious harm [28•].

Presence of imposter syndrome can hinder career advancement. Data shows that women tend to succeed in purely meritocratic environments such as college and medical school. To achieve professional success, additional support and social resources are needed, such as knowing the

right people, having name recognition, and putting oneself up for opportunities [22]. Presence of imposter syndrome can further accentuate these structural barriers, which are higher for women and can lead to exclusion from collaboration and opportunities for professional advancement [22]. The self-perception of being unqualified could lead to significant career setbacks and missed opportunities [23]. Some academic centers have recognized that highly qualified candidates can escape search committee radars because these are usually populated with those with the confidence or connections to gain notice [22]. Thus, intentional implementation of strategies that require minorities to be considered for senior roles has been proposed to ameliorate bias and help remedy the pipeline disparity in leadership [22].

URiM

Similar to women, groups who are underrepresented are at higher risk of imposter syndrome [6••]. In a mixed methods study of racial/ethnic stereotype threat among medical students, 82% of Black, 45% of Asian, 43% of Latinx, and 4% of White students were identified as experiencing high levels of stereotype threat on the Stereotype Vulnerability Scale (SVS). Stereotype threat was lived through experiences of standing out, reliving past experiences, and witnessing microaggressions that collectively depleted their cognitive resources and interfered with learning [29]. Other studies among medical students have had similar findings [30]. Knowing a surgeon with a shared identity has been reported to enhance the sense of belonging among students [30].

The factors contributing to this increased risk and how it can impact URiM's work environment and career advancement are similar to those described for women. There is little known on the effects of imposter syndrome or stereotype threat among physicians who experience intersectionality among minority groups. In a 2022 narrative review, there were only 13 articles identified in the literature that discuss the experiences of Black women medical students and residents during their education. The authors suggest that without centering Black women or using an intersectional lens, researchers could be invalidating the lived experiences of this population [31].

Ongoing culture changes and recognition of the benefits of diversity, inclusion, and equity have changed from laudatory to expected and may contribute to improving the toxic environments and their effects on people from URiM [26]. Imposter syndrome has been described as the symptom, while inequity is the disease and requires solutions at the systems level [22].

Early Career Physicians

The frequent transitions in roles and responsibilities lived early in the medical profession, from medical student clinical rotations to each post-graduate year of residency and fellowship, and to starting their job in clinical practice, place early career physicians in new environments where they are more likely to doubt themselves or their abilities [23].

As a core physiologic truth, it is important to find balance. Contrary to imposter syndrome, the Drunning–Kruger effect describes people who overestimate their abilities in areas where they have low performance and has been described in medical education [32, 33]. Wellness likely exists at the center of these two extremes.

Overcoming Practice Barriers

Stereotypes are oversimplified beliefs about groups of people. As described in the introduction, stereotype threat is defined as the tension caused by perceived stereotypes about a certain group defined by ethnicity, gender, or sexual identity. Studies have shown that after eliminating stereotype threat, URiMs performed as well as anyone else [12]. The impact of stereotype threat on trainees and those in academia includes stress, anxiety, self-doubt, and fear which can often contribute to imposter syndrome. The significant levels of imposterism experienced by some minority groups also lead to higher levels of anxiety and discrimination-related depression [34].

Mitigating the effect of negative stereotypes is essential for the professional development of faculty, particularly minorities and women. Imposter syndrome has been associated with burnout, emotional and physical exhaustion, depression, and anxiety. Furthermore, it fosters self-doubt and impacts ability to receive feedback, resiliency, well-being, and success. At the faculty level, those who experience imposter syndrome may be less likely to apply for promotions related to their fear of failure. This can lead to decreased diversity in leadership positions within academic medicine. To increase representation of diversity, equity, and inclusion within academic medicine and strengthen the pipeline of diverse candidates, imposter syndrome needs to be recognized and addressed at a departmental level. Although there are studies showing evidence that interventions to address imposter syndrome are effective in reducing feelings of imposterism, [35•] clear tools and strategies that focus on imposter syndrome and diversity are lacking. In response to the lack of tools, a module was created to provide an interprofessional framework for medical trainees, faculty, staff, and program leadership to understand, acknowledge, and confront imposter syndrome while promoting diversity, equity, and inclusion through interactive didactics [36]. Leaders of divisions and departments can better support their faculty, especially those of minority ethnic groups, through self-reflection of assumptions about individuals from minority ethnic groups, as well as minimizing the impact of stereotyping and bias to create a more inclusive work

environment. Engagement from department leaders has been found to contribute to improved academic performance/growth and reduce burnout and attrition among women and minorities in academic medicine [17, 37•, 38]. This has been found as a means of intervention to help lessen tendencies of imposter syndrome in vulnerable populations. In addition, faculty mentors should recognize characteristics of imposter syndrome, especially as they manifest in minority trainees [39]. There are many resources available on how to overcome imposter syndrome (such as those listed in Table 1) that mentors could share with their mentees. Mentors should encourage an inclusive environment with members that can recognize, respond, and combat biases.

At a departmental level, effective tools and strategies to identify and handle imposter syndrome are limited, but there have been some noted interventions. A facilitator-guided 30- to 45-min intervention for internal medicine residents, which included self-reflection, think-pair-share, and large-group discussions, was found to promote wellness among trainees [40]. The intervention promoted a desire for feedback and helped trainees realize that they could ask others for help and were not alone in their feelings. A 1-day interprofessional educational workshop where participants completed the Clance Impostor Phenomenon Scale (CIPS), listened to didactics, and engaged in discussion helped clinical nurse specialist students feel a sense of liberation and empowerment [36]. Based on pre- and post-module CIPS responses, there was a decrease in imposter syndrome scores at the end of the semester. These interventions show the strength of modules and workshops in improving awareness of imposter syndrome and providing strategies that help reduce the impact of imposterism in healthcare professionals. Targeted interventions for specific groups could lead to development of effective tools to mitigate the impact and sequalae among sufferers of imposterism. An eight-item assessment instrument was created by Ogynyemi et al., known as the Young Imposter Syndrome instrument. This interactive workshop on imposter syndrome has been found to increase perceptions and knowledge regarding imposter syndrome. The materials can be adapted for relevance to various audiences [35•].

Overcoming Systems Barriers

Stereotype threat and imposter syndrome both affect how physicians develop their professional identity. This process, known as professional identity formation (PIF), begins even before medical school and is dependent on perceptions about physicians in general, the infrastructure in medicine, and personal experiences. Formative experiences in medical school often help students identify their specialty choice. Surgeons themselves have described their professional identity formation as "learning to be a perfectionist, accountable, self-manage, be resilient, and learning to be self-critical, sometimes with the unintended consequence of seeming neurotic" [41]. In addition, diversity in surgical specialties

Table 1 Personal strategies to overcome imposter syndrome [22–24, 27]

1. Break the silence. Recognizing that there is a name for fraudulent feelings and that you are not alone can be liberating.
2. Separate feelings from fact. There will be times when you will feel unintelligent and inept. Everyone experiences these feelings. Self-reflection and reframing by seeking specific feedback from people you trust, identifying positive attributes, and focusing on what can be learned from a negative experience can help separate perception from reality.
3. Recognize fraudulent feelings in the context of the environment. A sense of belonging fosters confidence. If you are different than others in your environment, it can be natural to feel that you don't "fit in". If you are the "first" of a group to achieve something, there can be added pressure to represent your entire group. Avoid attributing your self-doubt as a sign of ineptness but is a normal response.
4. Accentuate the positive. Strive for excellence when it matters most and avoid perseverating over routine tasks. Consider keeping a list of accomplishments and revisit it when you experience self-doubt.
5. Develop a healthy response to failure. Learn from your mistakes and continue the path to life-long learning and professional development.
6. Right the rules. Do not operate under misguided rules such as "I should always know the answer". You don't always have to be right or do everything alone. Let go of perfectionism and practice humility. Consider seeking support groups or group therapy with peers which can be particularly therapeutic. Physicians may be reluctant to participate unless these groups are carefully designed to normalize and destigmatize imposter feelings and provide a safe environment in which to share experiences openly.
7. Develop a new script. When in situations that trigger your imposter feelings, acknowledge that new situations can trigger uncertainty at the beginning. Surround yourself with strong mentors, sponsors, or others who can support and help you.
8. Visualize success. Spend time visualizing successes in your mind before important meetings, presentations, or other accomplishments. Aligning actions and decision-making with your core values and internal compass. Gives a "big picture" view of a situation and help reduce feelings of insecurity. Consider pursuing coaching.
9. Reward yourself. Take the time to celebrate your victories. Strategies could include maintaining diaries of accomplishments or pursuing self-care with mindfulness and meditation.
10. "Fake it until you make it". Don't wait until you feel confident to put yourself out there. Taking risks can build your confidence.
11. Consider deemphasizing our professional identities. Real impact is based not on titles or recognition, but on cultivating kindness and enhancing others' lives.

lags other fields. Women and URiMs, who are more likely to experience stereotype threat in this challenging culture, are more likely to view identity as an important factor in specialty selection and less likely to pursue surgery [30, 42].

By influencing whether individuals pursue medicine in general and otolaryngology as a specialty, stereotype threat and imposter syndrome are threatening not only to the individual but to the entire healthcare system. Effects include a shallower talent pool when students are influenced away from surgical specialties, decreased retention and promotion rates among those who struggle with belonging, and lack of congruence between demographics of the population and those of health providers. To mitigate these effects, system leaders must address imposter syndrome and stereotype threat at both the individual and system levels.

System leaders can lessen the effects of imposter syndrome by creating a supportive learning and working environment. Establishing support requires a multifaceted approach that should encourage mentorship and self-reflection. "Although physicians have higher levels of personal resilience than workers in other fields, they have lower levels of self-valuation. This factor translates into many physicians being empathetic with others but self-critical and perfectionistic with themselves" [3••]. Resetting the cultural expectation that physicians are expected to be superhuman into one of authenticity and support for one another should come from the institution and healthcare organizations [3••]. Clearly communicating that imposter syndrome is common and prevalent among high achievers resets the expectation of perfectionism. Encouraging senior physicians to share their "failure resume" to illustrate the number of times they have faced challenges and setbacks can help to normalize disappointments during a long medical career [3••].

Creating the infrastructure for strong mentor–mentee relationships to develop is critical for success. Additionally, mentors must be given the tools to allow for positive change in their mentees, such as leadership training and coaching [43]. Once trust is established, mentors can provide objective and realistic assessments, focusing on facts of accomplishments and attributing them to skill and ability rather than external factors [44, 45]. Mentors can help to shift away from a fixed to a growth mindset by encouraging self-reflection, goal-setting, and avoiding comparison with others [44]. Mentors must understand that in order to be valuable, feedback must reconcile with the self-assessment of the individual [46]. Encouraging self-determination and autonomy, and emphasizing mastery over performance can assist in overcoming the self-doubt associated with imposter syndrome [45].

As described above, women, as a group, face specific stereotype threats, including the "assumption that women's communal nature makes them unfit for traditionally male roles" and the idea that "female leaders in male-dominated fields who appear ambitious and competitive are violating prescriptive gender stereotypes" [17]. In the former, women are viewed as poor leaders while in the latter are viewed as unlikeable [17]. Women are socialized to frame suggestions as questions and minimize their ambitions in mixed-gender environments, which can delay promotion and recognition of their efforts [22]. The situation becomes more complex when intersectionality of identity is present. A Black woman, for example, may be stereotyped as "angry" when raising a valid complaint. Isolation can hurt both women and minorities in medicine [37•]. Important conversations that occur only in the male operating locker rooms or at social functions where underrepresented minorities may feel less comfortable (i.e., country club golf courses) can significantly undermine belonging.

Leaders and health organizations also have a responsibility to mitigate stereotype threat, both directly and by coaching others. Similar to imposter syndrome, communicating about and defining stereotype threat within healthcare organizations is a helpful first step [17]. Other effective techniques include promoting identity safety and building leadership opportunities for women and underrepresented minorities [17]. In clinical situations, supervising attendings were able to promote a safe learning environment by clearly defining acceptable behavior for patients, reassuring them about the quality of the trainee's care, and correcting misperceptions about the trainee [29]. Creating a teaching moment and providing time for reflection after a stereotype threat event were also shown to be helpful [29]. This can be generalized into similar allyship behaviors for colleagues.

Health organization strategies to promote wellness among physicians have demonstrated that it is not enough to rely on individuals to decrease burnout and increase joy in work [47]. Strategies employed by leaders of departments and hospital systems are critically important to change the culture around imposter syndrome and stereotype threat in conjunction with individual efforts. Specific interventions can help every member of the medical staff become a fully engaged and collaborative physician.

Conclusions

Imposter syndrome and stereotype threat affect individuals at all levels of the medical system hierarchy, from medical students to faculty, but disproportionately impact trainees and junior faculty members, women, and URiMs. Both imposter syndrome and stereotype threat increase stress, anxiety, and burnout while decreasing opportunities for promotion and accomplishment. While recognition of the problem and

strategies by the individual are critical, departments and health systems also have a responsibility to address and mitigate imposter syndrome and stereotype threat to create positive change.

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Declarations

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