5 Impostor Syndrome in Graduate School

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1. Introduction

Congratulations for either beginning or continuing your journey as a psychology graduate student! From an outsider's perspective, attending graduate school can be viewed as a very exciting accomplishment. As such, family and friends likely shower you with supportive comments such as, "You're so smart!", "We had no doubt you'd get in!", "We always knew you'd be successful!" While you may certainly share in this excitement, you may also find yourself thinking: "Wow. I really got accepted into graduate school? This had to be a mistake!", "I doubt that I'm actually qualified.", "It's only a matter of time until everyone realizes I'm not as smart as they think."

If this internal dialogue sounds familiar it's likely that you've experienced (or are currently experiencing) what is formally known as the impostor syndrome, also referred to as the impostor phenomenon. However, don't worry, because all is not lost. You are indeed qualified, and you certainly do belong in your graduate program. Furthermore, you are not alone in experiencing impostor syndrome. On the contrary, the impostor syndrome is a common (yet seldom discussed) experience that is particularly salient in graduate school. Thus, the purpose of this chapter is to provide an overview of impostor syndrome, factors that may influence the intensity of impostor cognitions, and ways that graduate students can adaptively navigate these unhelpful ways of thinking.

2. What is Impostor Syndrome?

The impostor syndrome represents a maladaptive set of cognitions that impedes individuals' ability to internalize their own success and take pride in their accomplishments. Specifically, the impostor syndrome refers to internal beliefs of intellectual incompetence among high-achieving individuals that are typically accompanied by difficulties internalizing success and chronic fears of being discovered as a "fraud." Despite objective evidence of professional and/or academic success, individuals who endorse high levels of impostor syndrome often question how they

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have obtained a particular position or status ("How did I get into this graduate program?"), believe that they have somehow deceived those around them ("My acceptance into this program was due to some kind of error"), and worry that one day their self-perceived sense of fraudulence will be confirmed by others ("Someone will figure out that I don't belong").

While initially coined to capture the experiences expressed by high-achieving women (Clance & Imes, 1978), the impostor syndrome is a nearly ubiquitous experience. In fact, one study estimates that up to 70 percent of people in the United States (Matthews & Clance, 1985) will experience impostor syndrome at some point in their lifetime. To this end, scholars have established the relevance of impostor syndrome among both males and females in a range of different contexts including adolescents (Bernard & Neblett, 2018), high school students (Cromwell et al., 1990), undergraduate and graduate students (Cowie et al., 2018; Stone et al., 2018), faculty and professors (Hutchins, 2015; Hutchins et al., 2018), and medical professionals (Mattie et al., 2008; Villwock et al., 2016). In fact, even high-profile figures who have reached the pinnacle of success in their respective professions such as Maya Angelou, Michelle Obama, Tom Hanks, Ryan Reynolds, and Serena Williams (just to name a few) have spoken about their own experiences of impostor syndrome.

Despite its prevalence, impostor syndrome "represents a private, internal, emotional experience" (Lane, 2015, p. 117), which may prevent individuals from acknowledging or speaking about their feelings of intellectual incompetence, especially within highly competitive and evaluative contexts such as graduate school. Thus, while it is almost certain that you will encounter conversations about impostor syndrome with peers (and maybe even professors), don't be surprised if folks are hesitant to have in-depth conversations about the origins or severity of their impostor-related thoughts and feelings. With that being said, it is important to recognize that there may be variation in impostor experiences. For some, impostor syndrome is fleeting and manifests within acute instances of stress that may not cause any marked issues over time. However, for others, impostor syndrome represents a more chronic set of thoughts and feelings that can make their already difficult graduate school journey all the more stressful.

Chronic experiences of impostor syndrome are stressful and taxing, and erroneous self-perceptions of fraudulence (i.e., impostor syndrome thoughts) have even been linked to increased anxiety and depressive symptoms (Austin et al., 2009; Bernard et al., 2017; Cokley et al., 2017). Furthermore, individuals who experience impostor syndrome may also set extremely high standards of perfection; typically as a strategy to reduce the chances that they will somehow be "discovered" as a fraud (Clance & Imes, 1978; Clance & O'Toole, 1987). While these perfectionistic standards may manage the impressions of others, they may also cause individuals to become overly focused on negative evaluations, mistakes, and instances of falling short of their very high standards (i.e., perfection). For instance, although criticism, feedback, and failure represent normative experiences associated with graduate school (e.g., receiving extensive feedback on a research paper, having findings questioned at a research conference, not winning a competitive fellowship),

individuals who experience impostor syndrome may be more likely to internalize and misinterpret a lack of success as confirmatory evidence of their perceived lack of ability. As a result, they may experience increased anxiety about future academic-related evaluations. Thus, it follows that individuals with higher levels of impostor syndrome have also been found to report lower levels of self-esteem and lower levels of general and academic self-concept (Cokley et al., 2015; Schubert & Bowker, 2019). In light of this evidence, it is perhaps not surprising that the literature has connected impostor syndrome to symptoms of mental fatigue, exhaustion, and burnout among students pursuing advanced degrees (Legassie et al., 2008; Villwock et al., 2016).

3. Distinguishing Impostor Syndrome

The impostor syndrome has many similarities with other constructs relating to self-perceptions of competence, yet it represents a conceptually valid and distinct construct (Cozzarelli & Major, 1990; Kolligian Jr. & Sternberg, 1991). To avoid confusion, it is important to highlight the defining and differentiating characteristics of impostor syndrome from other conceptually similar constructs before moving forward. For example, impostor syndrome and self-efficacy, or an individual's beliefs regarding their abilities, appear to be similar in nature. However, at a conceptual level, an individual with low self-efficacy might feel and perform poorly on tasks, whereas an individual experiencing impostor syndrome may feel incompetent *in spite of* objective evidence of competence, such as a strong performance on an exam (Lane, 2015; Leary et al., 2000). Thus, while self-efficacy may accurately map onto an individual's performance on a particular task, feelings of impostor syndrome *are inconsistent and in conflict* with their high levels of objective success.

Social anxiety and its associated symptoms also bear strong resemblance to impostor syndrome (Leary et al., 2000). However, social anxiety is marked by significant fears of scrutiny from *others*, which causes considerable impairment in social, academic, or vocational contexts (American Psychiatric Association, 2013). In contrast, individuals endorsing high levels of impostor syndrome are high-achieving and excel (Kumar & Jagacinski, 2006), despite disparaging *internal* beliefs of intellectual inferiority (Ross & Krukowski, 2003). As posited by Chrisman and colleagues (1995), impostor cognitions of intellectual incompetence may undergird desires to be perceived by others in a positive light, and as such serve as the impetus for social anxiety.

Finally, it is also important to distinguish impostor syndrome from stereotype threat – the threat of confirming a negative social stereotype about one's own group (Steele & Aronson, 1995). Although similar, research suggests that stereotype threat operates to impair performance when activated within specific evaluative settings and situations (Spencer et al., 2016). Conversely, impostor syndrome has been conceptualized to permeate beyond any one particular setting (Chrisman et al., 1995). As noted by McClain et al. (2016), "the nature of impostor syndrome as an emergent identity might allow impostor cognitions to be present across contexts and,

thus, may affect various domains" (p. 103). Therefore, the impostor syndrome may represent a chronic experience that is unbound to a specific context, thereby distinguishing it from the relatively situationally activated nature of stereotype threat.

4. Impostor Syndrome in Graduate School

The academic context is among the most fertile grounds for impostor syndrome to thrive, especially among graduate students. Why might this be? Pursuing a graduate degree is a major commitment that commonly uproots students, placing them within unfamiliar environments that sometimes are a considerable distance from friends and family. This major life transition can feel isolating, particularly at the onset of graduate school, as students are attempting to learn the ropes of a new academic institution. For some students, this transition may feel like a true "fish out of the water" moment, as they begin to learn the expectations and demands of being in graduate school ("You want *me* to see patients?!"). This is only compounded by the inevitable social comparisons made with cohort members and other graduate students. Indeed, although there is no "right way" to get into graduate school, it is easy to make assumptions about the intellect and capabilities of fellow cohort members who came straight from their undergraduate degree, who had impressive jobs before coming to graduate school, or who come into graduate school with other advanced degrees, at the expense of our own laurels. These comparisons only continue as students matriculate through their program as individuals begin publishing manuscripts, applying for competitive awards or fellowships, and defending theses and dissertations.

From its onset, pursuing a psychology graduate degree can be a particularly stressful time that is characterized by a constant state of evaluation by course professors (e.g., class performance), mentors (e.g., semester evaluations), research reviewers (peer review process), and even clinical patients, which may feel particularly anxiety-provoking and overwhelming. And although the pursuit of a psychology graduate degree comes with milestones worthy of celebration (e.g., having manuscripts published, presenting at conferences), these high points are infrequent and often overshadowed by the more mundane and stressful realities of pursuing a graduate degree (e.g., rejected manuscripts, competing responsibilities, personal demands) that can lead to the development of impostor syndrome.

5. The Impostor Cycle in Graduate School

Although graduate students may readily identify with impostor syndrome, it may be more challenging to provide a first-person account of the precipitating or sequential events that caused impostor cognitions. To this end, the "impostor cycle" represents one possible sequence of events and behavioral patterns that are typical of impostor syndrome and the manifestation of impostor cognitions (Sakulku & Alexander, 2011). As depicted in Figure 5.1, the impostor cycle begins with an academic- or graduate school-related task (e.g., an exam; teaching
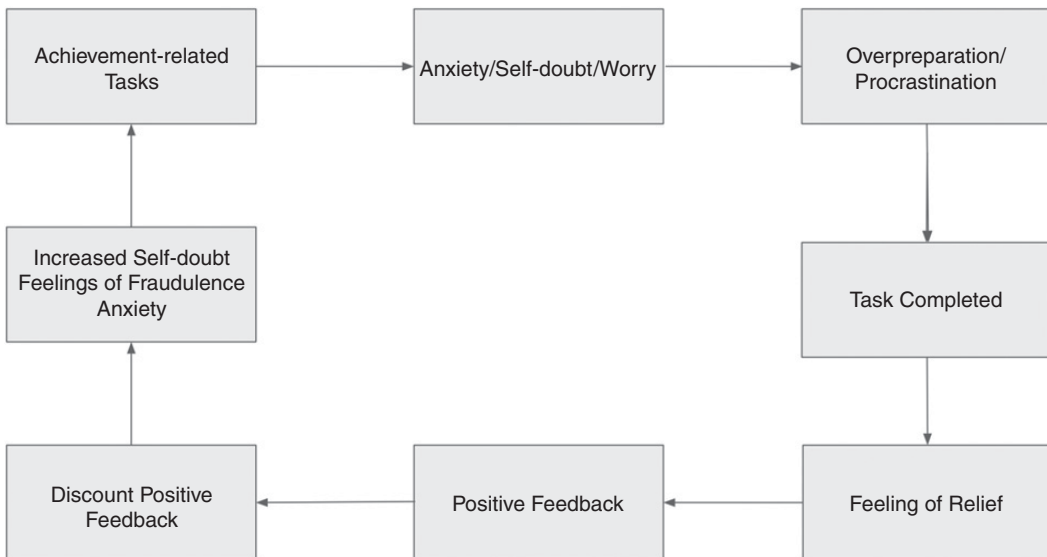
Figure 5.1 Impostor cycle (adapted from Sakulku & Alexander, 2011).

a lecture for the first time) in which one's performance will be evaluated or observed by others. Graduate students with higher baselines of anxieties stemming from fears of negative evaluation may attempt to alleviate these concerns by over-preparing (e.g., excessive studying; overworking to prepare for a client) or self-handicapping behaviors (e.g., procrastination) followed by frantic last-minute preparation. When the task is completed, individuals may experience a brief, yet temporary, sense of relief, which is often followed by positive feedback on per-formance or praise on successful completion of the initial task. Rather than interpreting positive feedback and objective success as evidence of their own intellectual ability, individuals experiencing impostor syndrome may minimize their accomplishments and instead attribute their success to over-preparation or luck, dependent upon how they approached the initial task. Previous research notes that individuals who experience impostor syndrome hold fixed beliefs about the mechanics of success, and as a result do not equate over-preparation or hard work as a sign of true intellectual ability (Clance, 1985). Thus, when faced with the next task, fears of negative evaluation or failure may only be heightened as impostor cognitions lead individuals to believe that their previous success was erroneous and outside of their control, therefore reinforcing tendencies to over-prepare.

While the impostor cycle represents a general pattern of beliefs and behaviors that may occur throughout graduate school, it is important to acknowledge that this cycle may look different as students matriculate through their program. As an example of these differences, we contrast the experiences of hypothetical first-year and fifth-year students.

5.1 First-Year Student

Serena is a first-year graduate student attending a prominent graduate school in clinical psychology. Serena did not take a gap year after receiving her undergraduate degree and transitioned immediately to her graduate program. As Serena begins her program, she is surprised to find that many of her cohort members are older, have more research and clinical experience than she does, and seem to be more comfortable and familiar with course content than she is. When faced with her first graduate research paper as a part of a psychological neuroscience course, Serena experiences significant anxiety and worry that she may fail, and fears that if she fails, others in her program will find out that she is not qualified to be in graduate school. In efforts to combat this anxiety, Serena spends the next two months leading up to writing the paper conducting extensive literature reviews that extend well-beyond the scope of the research paper, frequently at the expense of other academic, professional, and personal responsibilities. Following completion of this paper, Serena experiences an initial sense of relief when she receives a high score on her assignment and positive praise from her professor, but is disheartened when she overhears her peer mention that she received a higher passing score and that her assignment was written only a day before the due date. Upon hearing this, Serena begins to question the grade, and positive feedback, thinking to herself "I only received this grade because of the excessive amount of work I put into this paper. How am I going to keep this up?" This internal dialogue increases feelings of self-doubt, causing this impostor cycle to continue as she is faced with her next exam.

5.2 Fifth-Year Student

Robert, a fifth-year graduate student in clinical psychology, is working to complete his dissertation. Although a highly successful student, Robert is feeling overwhelmed with his growing "to-do" list and finds himself worrying and doubting that he will ever be able to complete his project. Although knowing that a draft of the introduction chapter of his dissertation is due to his advisor next week, Robert remains focused on other negligible tasks such as references and figures that prevent him from working on the content of the introduction. "I'll cross that bridge when I get to it," he thinks to himself, until the day before it is due, which leads to Robert frantically working on a draft of his introduction well into the night. In finishing a draft of his introduction chapter, Robert experiences a short-lived bout of relief, until he receives an email with his advisor's feedback. Initially panicked, Robert is surprised to see that the feedback he received is overwhelmingly positive. However, realizing that he has several more sections of the paper to write, Robert feels that he may have "pulled one over" on his advisor, and thinks to himself "I got lucky on writing this one. How many more times can I keep doing this before my advisor figures me out?" This external attribution of success to uncontrollable factors such as luck or good fortune makes Robert feel especially anxious, knowing that his advisor will be reading additional chapters that are increasingly complex to write. As such,

Robert may become apprehensive of writing more demanding chapters in fear that he will not be able to replicate the same quality of work, thus causing the impostor cycle to repeat itself.

While these vignettes are just two examples of what the impostor cycle may look like, they serve to exemplify similar impostor-related patterns in very different situations. To be sure, there is no "right way" to experience impostor syndrome, and you may find yourself resonating more with one vignette over the other, a combination of both, or neither. Further, while the examples provided above explain the basic pattern of the impostor cycle, they in no way capture the complexity of the ways in which this cycle may manifest. Indeed, a myriad of factors at the individual and contextual level can individually and conjointly impact the saliency of impostor syndrome. Accordingly, we provide below an abbreviated review of some of the empirical correlates of impostor syndrome.

6. Correlates of Impostor Syndrome

As mentioned earlier, the graduate school setting is a prime environment for impostor experiences to surface and thrive. Thus, it is important to be aware of where impostor syndrome comes from and what makes it worse. Despite its inception more than 30 years ago, there is little consensus as to where impostor syndrome originates. Several studies have hypothesized various origin points, with some suggesting familial messages (Clance & Imes, 1978), others suggesting self-presentational concerns (Leary et al., 2000), and others suggesting that it may be societal messages and experiences (Bernard & Neblett, 2018; Stone et al., 2018). While we may not be able to precisely locate where experiences of impostor syndrome stem from, there is an abundance of research that may shed light onto what makes impostor syndrome worse.

A general consensus in the literature is that impostor syndrome does not exist in a vacuum. Rather, the prevalence, salience, and impact of impostor syndrome within graduate school can be considerably influenced by several individual and contextual factors. To this end, a brief review of these factors is warranted, as some (or many) may resonate with experiences you have had to navigate as you have prepared to begin your graduate degree in psychology, or as you have matriculated through your program. However, as a caveat, the overview presented below represents a brief review of individual and contextual factors related to impostor syndrome and by no means is exhaustive. A more detailed analysis of these factors can be seen in other papers (Bernard & Neblett, 2018; Bravata et al., 2019; Peteet et al., 2015a; Sakulku & Alexander, 2011; Stone et al., 2018).

6.1 Individual-Level Factors

Existing research has documented a wide range of individual characteristics relevant to graduate students that may set the stage for and ultimately perpetuate impostor syndrome. For example, at its core, impostor syndrome reflects a wide set of

psychologically disparaging cognitions that stem from an internalized fear of negative evaluation (Vergauwe et al., 2014). Furthermore, several studies have documented an inverse association between self-esteem and impostor syndrome (Chrisman et al., 1995; Kolligian Jr. & Sternberg, 1991; Neureiter & Traut-Mattausch, 2016; Topping & Kimmel, 1985). As such, some have argued that impostor syndrome actually represents an underlying self-esteem issue, especially among graduate students (Schubert & Bowker, 2019).

Several personality traits that are associated with higher baselines of anxiety, worry, and interpersonal concern have also been shown to be positively associated with impostor syndrome. More specifically, neuroticism has been found to be a particularly robust predictor of impostor syndrome (Ross et al., 2001). As discussed in previous research, higher levels of neuroticism may increase risk for internal distress, self-doubt, and poor self-evaluations (Bernard et al., 2002), which may be especially prominent within evaluative contexts (e.g., graduate school) in which criticism and failure is possible (Chae et al., 1995). In addition to neuroticism, personality traits characterized by exceptionally high-performance standards and/or concerns (i.e., perfectionism) have been recurrently implicated as predictors of impostor syndrome (Cokley et al., 2018). Altogether, perfectionism can be viewed as a double-edged sword for psychology graduate students that may inadvertently lead high-achieving students to experience impostor syndrome.

To further illustrate how individual factors may contribute to impostor syndrome, let's revisit the vignette of Serena. Serena considers herself to be particularly attuned to how others may view her, and also considers herself to be a bit neurotic at times. By going above and beyond in her studies to perfect her academic and research projects, Serena has developed an impressive CV that has also come with the admiration of her peers. However, Serena is also aware that the excessive amount of time and energy invested into each of these projects may have been in excess to the actual project requirements. As such, Serena finds that these high self-imposed standards have made her develop the habit of comparing herself to others, focusing on her perceived inadequacies more than strengths, and internalizing and overgeneralizing instances where high standards are unable to be met (e.g., equating not earning the highest grade in the class to failing as a graduate student).

6.2 Contextual-Level Factors

At the contextual level, the challenges and demands of graduate school can generate feelings of alienation that may further amplify risk for impostor cognitions (Peteet et al., 2015a). For some, the internalized belief of intellectual incompetence may stem from being the first in their family to attend college or to pursue an advanced degree, which has been shown to intensify impostor syndrome within competitive academic environments (Canning et al., 2020; Craddock et al., 2011). Scholars suggest that the unique challenges reported by first-generation college students (e.g., parental unfamiliarity with college, familial pressures to excel, lack of financial resources, competing personal and academic obligations, limited mentorship;

Pascarella et al., 2004) are also relevant among first-generation graduate school students (Cunningham & Brown, 2014). Thus, first-generation students may feel less prepared and equipped to excel in psychology graduate school programs with few mentors or opportunities to dispel these beliefs, especially when compared to non-first-generation peers who may have a greater array of financial, professional, and academic resources at their disposal. To be sure, this does not mean that individuals who are not the first in their families to attend graduate school do not experience similar stressors; however, first-generation students may be more at risk to report such challenges, and in turn may also be at an increased risk for impostor cognitions.

Apart from first-generation status, an extensive body of literature has also documented the intersection of impostor syndrome with unique cultural issues associated with one's race and ethnicity. More specifically, research indicates that undergraduate and graduate students of color are at a heightened risk for impostor syndrome, in large part, due to the salience and impact of stressors associated with one's racial minority status (e.g., racial discrimination, negative stereotypes), which may compound stress related to general academic demands (Cokley et al., 2013; Peteet et al., 2015a). It has been argued that experiences of race-based mistreatment among students of color can be perceived as confirmatory evidence of one's already internalized sense of intellectual incompetence (Bernard et al., 2017), thereby increasing fears of negative evaluation from peers and professors. Interestingly, qualitative studies have also found that when students of color discuss factors that may shape impostor cognitions, the awareness of underrepresentation within the academy is frequently referenced (Craddock et al., 2011; Stone et al., 2018). Thus, it is perhaps not surprising that recent research has found students of color to report higher rates of impostor syndrome within academic contexts that are less diverse (i.e., predominantly White institutions), relative to those who attend predominately non-White institutions (i.e., historically Black colleges/universities; Bernard et al., 2020). With students of color being considerably under-represented within psychology programs and in the field of psychology as whole, it follows that some have made the case that graduate students of color may be particularly susceptible and vulnerable to the noxious effects of impostor syndrome (Bernard et al., 2018; Cokley et al., 2017; Peteet et al., 2015b).

As an applied example of the impact of contextual factors on impostor syndrome, let's revisit the above vignette of Robert, who is completing his dissertation. During his entire five-year graduate tenure, he noticed that he was the only African American person (student or professor) in the graduate program. This racial under-representation (i.e., a contextual feature of the academic environment) may engender impostor cognitions and cause Robert to question his belongingness in the academic space ("No one else in the graduate program looks like me. Maybe I don't belong here?"); thoughts that are akin to embedded themes in impostor cognitions (i.e., questioning one's intellectual competence and belongingness). In addition, Robert may have had to also contend with discriminatory treatment and negative stereotypes that suggest African Americans are anti-intellectual or only

gained entry into academic programs because of affirmative action initiatives, both of which can worsen the impostor syndrome over time (Cokley, 2015; Ogunyemi et al., 2020).

7. Navigating Impostor Syndrome

If you find yourself resonating with the content of this chapter, you may be thinking "That's great, but what do we do if we have impostor cognitions? How do we treat it?" With respect to these questions, there is good news and there is okay news. The good news is that conversations about impostor syndrome have ballooned in recent years, with some discussions taking center stage at national conferences (Jaremka et al., 2020), making it easier to share experiences and find others who are going through the same thing. The okay news is that only a handful of research has investigated interventions for impostor syndrome. Although limited, this extant research provides valuable insights as to strategies or approaches that can systematically address impostor syndrome.

So, what can be done to alleviate the effects of impostor syndrome? First, if impostor syndrome is disrupting your day-to-day functioning in key areas (school, work, relationships, sleep) then you should consider seeking help from a mental health professional. One great source for help are the university counseling centers, which often support students who experience academic stress, which often includes impostor syndrome. Although impostor syndrome is not formally listed in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM), mental health practitioners are typically aware of impostor syndrome and its associations with anxiety and depression. Indeed, several studies have discussed the utility of cognitive-behavioral interventions that are frequently used by mental health professionals (e.g., cognitive-behavioral therapy) to manage anxious and depressive symptoms, such as uncontrollable worry or decreased motivation, and target distorted or maladaptive cognitions that are related to impostor syndrome (Bernard et al., 2017, 2018). In addition, mental health professionals may know of other resources for managing impostor feelings, such as counseling support groups for graduate students.

Beyond seeking help from a mental health professional, two scientific studies offer more insight as to how to overcome impostor feelings. In the first study, Zanchetta and colleagues (2020) sought to assess how well a coaching intervention reduced impostor feelings. The researchers randomly assigned participants to a coaching intervention (treatment) or training intervention (control). Topics in each group included, but were not limited to, creating measurable goals, taking inventory of their abilities, and then completing an activity that helped participants internalize their identified abilities. Although the coaching and training interventions involved nearly identical activities, participants in the coaching intervention received one-on-one coaching to process the activities, whereas individuals in the training condition processed the activities in a small-group format. In all, the coaching intervention was more effective in reducing levels of impostorism. However,

what's really important to note is that each intervention involved *learning* about and *discussing* the fear of negative evaluations and the value of not hiding mistakes from others. This is particularly noteworthy given the key role that fears of negative evaluations play in manifestations of impostor syndrome (Clance, 1985; Clance & Imes, 1978). Moreover, the researchers found that acknowledging and discussing fears of evaluation, via the coaching intervention, was the only statistically significant component of the intervention that reduced impostor thoughts and feelings. Thus, above all else, talking about your impostor-related thoughts and feelings to others (e.g., peers, mentors) may be among the more effective ways to reduce the salience of impostor syndrome.

In the second study, researcher Jonathan Cisco (2020) tested the effectiveness of an academic skills training intervention that was specifically designed to reduce impostor feelings in graduate students. This group format intervention aimed to increase students' comfort with reading and synthesizing academic articles, a common task for graduate students. Four 90-minute interventions were used to (1) introduce and discuss impostor syndrome experiences; (2) normalize the commonness of cultivating scientific literary skills while in graduate school, as opposed to developing those skills prior to graduate school; (3) develop and practice skills for reading academic journals; and (4) develop and practice skills for writing literature reviews. Altogether, the study provided evidence that the academic skills training intervention significantly reduced levels of impostor syndrome for graduate students in the treatment groups relative to students in the control group, and the intervention decreased impostor cognitions across the duration of the intervention (pre-test and post-test levels). Thus, taking steps to discuss and normalize that novel skill acquisition continues well into graduate school may be useful in reducing social comparisons, which may in turn reduce internal perfectionistic pressures that underlie impostor cognitions.

Altogether, the above discussion and available empirical evidence for reducing impostor cognitions can be summarized into four takeaways that may help with managing impostor syndrome. The four takeaways are as follows:

1. Seek professional help if you experience distress that impacts your functioning.
2. Actively resist the temptation to hide your perceived flaws and mistakes.
3. Possibly alone or with a professional, use deep reflection to examine fear of being negatively evaluated.
4. Recognize that skills needed in graduate school are often developed during graduate school (not prior to), and that those skills can improve through support and training.

Beyond the existing empirical evidence, there may be additional strategies one can employ to help prevent or mitigate impostor cognitions and the related stress, anxiety, and depressive symptoms. To this end, five research-informed strategies are presented next. First, it is important to be able to identify *if* and *when* you are experiencing the impostor syndrome. Paying close attention to the vignettes presented in this chapter, reading about other's experiences of impostor syndrome in

books or pop culture writings, or accessing educational resources (e.g., TED Talks, empirical papers, conference workshops) may increase your ability to recognize common signs and situations that are related to the impostor syndrome. These strategies may be useful in helping individuals to identify and label internal thoughts of impostorism that may have otherwise gone unnoticed (e.g., "My research paper probably only received high marks because Dr. Mulki is such a nice person").

Second, individuals who experience impostor syndrome may feel a need to hide "deficient" or imperfect parts of themselves from others, which aligns with empirical evidence that suggests shame and the impostor syndrome are positively correlated (Cowman & Ferrari, 2002). However, hiding one's suffering and distress may cause an individual to become more isolated and disconnected from crucial social supports that can normalize the impostor experiences and offer positive support. In fact, research suggests that social support is negatively related to impostor syndrome (Bravata et al., 2019). Therefore, it may be especially important to remain connected to social supports during distressful impostor syndrome experiences. As detailed above, sharing impostor experiences with others can be therapeutic and may actually help to normalize (and even challenge) distorted self-perceptions and beliefs regarding one's own intellectual ability.

With recent research alluding to the fact that impostor syndrome may diminish in intensity as individuals become more acclimated and experienced with a particular context or task (Rudenga & Gravett, 2019), a third strategy is to adopt a growth mindset to manage impostor cognitions. Put forth by psychologist Carol Dweck and colleagues, a growth mindset suggests an individual's abilities can grow over time, versus remaining fixed and unchangeable (Dweck & Yeager, 2019; Yeager & Dweck, 2012). In other words, your skills and abilities as psychology graduate students, such as scientific writing or analyzing statistical data, are not fixed but instead can be improved over time. In fact, Zanchetta and colleagues' (2020) above impostor syndrome empirical intervention uses Dweck's mindset framework to conceptualize how a growth mindset could prevent or reduce the impact of impostor cognitions. Specifically, the authors suggest that a fixed mindset can cause individuals to be fearful and avoid constructive feedback that is important for their professional development. Conversely, embracing a growth mindset allows one to recognize that their skills and abilities are malleable, which can be furthered by feedback.

The fourth strategy targets the context of impostor syndrome. As mentioned previously, impostor syndrome does not happen in a vacuum. It is not fully explained by a lone individual characteristic, but instead is likely influenced or exacerbated by the surrounding context. Given that recent research points to a mental health crisis among graduate students, especially for marginalized students (Evans et al., 2018), graduate programs and faculty mentors should continue to create healthier graduate environments. For instance, a systemic approach to preventing or alleviating impostor syndrome distress may be to craft policies that promote self-care and school–life balance. Graduate student associations and committees can also advocate for and put forward possible systemic solutions. At the least, these efforts could require

academic programs and graduate schools to widely acknowledge and validate the existence of impostor syndrome in graduate school. Ideally, acknowledgment of this type could give individual graduate students permission to acknowledge their own distress and resultantly seek support.

8. Conclusion

As you prepare or continue to embark on your graduate journey, we hope that this discussion has provided some insight into impostor syndrome, which represents a common experience that will more than likely rear its head on more than one occasion! Despite what this internal dialogue of being an impostor may lead you to believe, questioning your own competence does not reflect an internal fatal flaw, but rather a normative experience that is particularly prevalent within graduate school. Accordingly, it is important to remember that you do belong in graduate school, you are competent, and that many skills are expected to be developed during graduate school, and not prior. As such, we hope this discussion about impostor syndrome adds structure to your current or upcoming graduate school experience and equips you with the knowledge and resources that will help you recognize and challenge thoughts and feelings that question the validity of your own intellectual ability.

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REFERENCES

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. Washington, DC: American Psychiatric Publishing.

Austin, C. C., Clark, E. M., Ross, M. J., & Taylor, M. J. (2009). Impostorism as a mediator between survivor guilt and depression in a sample of African American college students. *College Student Journal*, *43*(4), 1094–1109.

Bernard, D., & Neblett, E. (2018). A culturally informed model of the development of the impostor phenomenon among African American youth. *Adolescent Research Review*, *3*(3), 279–300. https://doi.org/10.1007/s40894-017-0073-0

Bernard, D. L., Lige, Q. M., Willis, H. A., Sosoo, E. E., & Neblett, E. W. (2017). Impostor phenomenon and mental health: The influence of racial discrimination and gender. *Journal of Counseling Psychology*, *64*(2), 155–166. https://doi.org/10.1037/cou0000197

Bernard, D. L., Hoggard, L. S., & Neblett, E. W. (2018). Racial discrimination, racial identity, and impostor phenomenon: A profile approach. *Cultural Diversity & Ethnic Minority Psychology*, *24*(1), 51–61. https://doi.org/10.1037/cdp0000161

Bernard, D. L., Jones, S. C. T., & Volpe, V. V. (2020). Impostor phenomenon and psychological well-being: The moderating roles of John Henryism and school racial composition among Black college students. *Journal of Black Psychology*, *46*(2–3), 195–227. https://doi.org/10.1177/0095798420924529

Bernard, N. S., Dollinger, S. J., & Ramaniah, N. V. (2002). Applying the big five personality factors to the impostor phenomenon. *Journal of Personality Assessment*, *78*(2), 321–333. https://doi.org/10.1207/S15327752JPA7802_07

Bravata, D. M., Watts, S. A., Keefer, A. L., Madhusudhan, D. K., Taylor, K. T., Clark, D. M., Nelson, R. S., Cokley, K. O., & Hagg, H. K. (2019). Prevalence, predictors, and treatment of impostor syndrome: A systematic review. *Journal of General Internal Medicine*, *35*(4), 1–24. https://doi.org/10.1007/s11606-019-05364-1

Canning, E. A., LaCosse, J., Kroeper, K. M., & Murphy, M. C. (2020). Feeling like an imposter: The effect of perceived classroom competition on the daily psychological experiences of first-generation college students. *Social Psychological and Personality Science*, *11*(5), 647–657. https://doi.org/10.1177/1948550619882032

Chae, J.-H., Piedmont, R. L., Estadt, B. K., & Wicks, R. J. (1995). Personological evaluation of Clance's imposter phenomenon scale in a Korean sample. *Journal of Personality Assessment*, *65*(3), 468–485. https://doi.org/10.1207/s15327752jpa6503_7

Chrisman, S. M., Pieper, W. A., Clance, P. R., Holland, C. L., & Glickauf-Hughes, C. (1995). Validation of the Clance imposter phenomenon scale. *Journal of Personality Assessment*, *65*(3), 456–467.

Cisco, J. (2020). Using academic skill set interventions to reduce impostor phenomenon feelings in postgraduate students. *Journal of Further and Higher Education*, *44*(3), 423–437. https://doi.org/10.1080/0309877X.2018.1564023

Clance, P. R. (1985). *The impostor phenomenon: When success makes you feel like a fake*. New York: Bantam Books.

Clance, P. R., & Imes, S. A. (1978). The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research & Practice*, *15*(3), 241–247. https://doi.org/10.1037/h0086006

Clance, P. R., & O'Toole, M. A. (1987). The imposter phenomenon. *Women & Therapy*, *6*(3), 51–64. https://doi.org/10.1300/J015V06N03_05

Cokley, K., McClain, S., Enciso, A., & Martinez, M. (2013). An examination of the impact of minority status stress and impostor feelings on the mental health of diverse ethnic minority college students. *Journal of Multicultural Counseling and Development*, *41*(2), 82–95. https://doi.org/10.1002/j.2161-1912.2013.00029.x

Cokley, K., Awad, G., Smith, L., Jackson, S., Awosogba, O., Hurst, A., Stone, S., Blondeau, L., & Roberts, D. (2015). The roles of gender stigma consciousness, impostor phenomenon and academic self-concept in the academic outcomes of women and men. *Sex Roles*, *73*(9–10), 414–426. https://doi.org/10.1007/s11199-015-0516-7

Cokley, K., Smith, L., Bernard, D., Hurst, A., Jackson, S., Stone, S., Awosogba, O., Saucer, C., Bailey, M., & Roberts, D. (2017). Impostor feelings as a moderator and mediator of the relationship between perceived discrimination and mental health among racial/ethnic minority college students. *Journal of Counseling Psychology*, *64*(2), 141–154. https://doi.org/10.1037/cou0000198

Cokley, K., Stone, S., Krueger, N., Bailey, M., Garba, R., & Hurst, A. (2018). Self-esteem as a mediator of the link between perfectionism and the impostor phenomenon. *Personality and Individual Differences*, *135*, 292–297. https://doi.org/10.1016/j.paid.2018.07.032

Cowie, M. E., Nealis, L. J., Sherry, S. B., Hewitt, P. L., & Flett, G. L. (2018). Perfectionism and academic difficulties in graduate students: Testing incremental prediction and gender moderation. *Personality and Individual Differences*, *123*, 223–228. https://doi.org/10.1016/j.paid.2017.11.027

Cowman, S. E., & Ferrari, J. R. (2002). "Am I for real?" Predicting impostor tendencies from self-handicapping and affective components. *Social Behavior and Personality*, *30*(2), 119–125.

Cozzarelli, C., & Major, B. (1990). Exploring the validity of the impostor phenomenon. *Journal of Social and Clinical Psychology*, *9*(4), 401–417. http://dx.doi.org.libproxy.lib.unc.edu/10.1521/jscp.1990.9.4.401

Craddock, S., Birnbaum, M., Rodriguez, K., Cobb, C., & Zeeh, S. (2011). Doctoral students and the impostor phenomenon: Am I smart enough to be here? *Journal of Student Affairs Research and Practice*, *48*(4), 429–442. https://doi.org/10.2202/1949-6605.6321

Cromwell, B., Brown, N., Sanchez-Huceles, & Adair, F. L. (1990). The impostor phenomenon and personality characteristics of high school honor students. *Journal of Social Behavior and Personality*, *5*(6), 563–573.

Cunningham, A. T., & Brown, W. A. (2014). The role of psychological well-being in first generation graduate students. *National Association of Students Affairs Professional Journal*, *14*(1), 51–77.

Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological Science*, *14*(3), 481–496. https://doi.org/10.1177/1745691618804166

Evans, T. M., Bira, L., Gastelum, J. B., Weiss, L. T., & Vanderford, N. L. (2018). Evidence for a mental health crisis in graduate education. *Nature Biotechnology*, *36*(3), 282–284. https://doi.org/10.1038/nbt.4089

Hutchins, H. M. (2015). Outing the imposter: A study exploring imposter phenomenon among higher education faculty. *New Horizons in Adult Education and Human Resource Development*, *27*(2), 3–12. https://doi.org/10.1002/nha3.20098

Hutchins, H. M., Penney, L. M., & Sublett, L. W. (2018). What imposters risk at work: Exploring imposter phenomenon, stress coping, and job outcomes. *Human Resource Development Quarterly*, *29*(1), 31–48. https://doi.org/10.1002/hrdq.21304

Jaremka, L. M., Ackerman, J. M., Gawronski, B., Rule, N. O., Sweeny, K., Tropp, L. R., Metz, M. A., Molina, L., Ryan, W. S., & Vick, S. B. (2020). Common academic experiences no one talks about: Repeated rejection, impostor syndrome, and burnout. *Perspectives on Psychological Science*, *15*(3), 519–543. https://doi.org/10.1177/1745691619898848

Kolligian Jr., J., & Sternberg, R. J. (1991). Perceived fraudulence in young adults: Is there an "imposter syndrome"? *Journal of Personality Assessment*, *56*(2), 308–326. https://doi.org/10.1207/s15327752jpa5602_10

Kumar, S., & Jagacinski, C. M. (2006). Imposters have goals too: The imposter phenomenon and its relationship to achievement goal theory. *Personality and Individual Differences*, *40*(1), 147–157. https://doi.org/10.1016/j.paid.2005.05.014

Lane, J. A. (2015). The imposter phenomenon among emerging adults transitioning into professional life: Developing a grounded theory. *Adultspan Journal*, *14*(2), 114–128. https://doi.org/10.1002/adsp.12009

Leary, M. R., Patton, K. M., Orlando, A. E., & Wagoner Funk, W. (2000). The impostor phenomenon: Self-perceptions, reflected appraisals, and interpersonal strategies. *Journal of Personality*, *68*(4), 725–756. https://doi.org/10.1111/1467-6494.00114

Legassie, J., Zibrowski, E. M., & Goldszmidt, M. A. (2008). Measuring resident well-being: Impostorism and burnout syndrome in residency. *Journal of General Internal Medicine*, *23*(7), 1090–1094. https://doi.org/10.1007/s11606-008-0536-x

Matthews, G., & Clance, P. R. (1985). Treatment of the impostor phenomenon in psychotherapy clients. *Psychotherapy in Private Practice*, *3*(1), 71–81. https://doi.org/10.1300/J294v03n01_09

Mattie, C., Gietzen, J., Davis, S., & Prata, J. (2008). The imposter phenomenon: Self-assessment and competency to perform as a physician assistant in the United States. *Journal of Physician Assistant Education*, *19*(1). http://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=19419430&AN=31961842&

h=SL%2BagtpAwPoRb0K28c1%2BRVYlGxfgi9LGhct0KiSKFJhbKJyxWGujA4FyxdzZc%2B%2BdFti5VxpJL4%2FT25%2BbrOTLww%3D%3D&crl=c

McClain, S., Beasley, S. T., Jones, B., Awosogba, O., Jackson, S., & Cokley, K. (2016). An examination of the impact of racial and ethnic identity, impostor feelings, and minority status stress on the mental health of Black college students. *Journal of Multicultural Counseling and Development*, *44*(2), 101–117. https://doi.org/10.1002/jmcd.12040

Neureiter, M., & Traut-Mattausch, E. (2016). An inner barrier to career development: Preconditions of the impostor phenomenon and consequences for career development. *Frontiers in Psychology*, 7. https://doi.org/10.3389/fpsyg.2016.00048

Ogunyemi, D., Clare, C., Astudillo, Y. M., Marseille, M., Manu, E., & Kim, S. (2020). Microaggressions in the learning environment: A systematic review. *Journal of Diversity in Higher Education*, *13*(2), 97–119. https://doi.org/10.1037/dhe0000107

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, *75*(3), 249–284. https://doi.org/10.1080/00221546.2004.11772256

Peteet, B. J., Brown, C. M., Lige, Q. M., & Lanaway, D. A. (2015a). Impostorism is associated with greater psychological distress and lower self-esteem for African American students. *Current Psychology*, *34*(1), 154–163. https://doi.org/10.1007/s12144-014-9248-z

Peteet, B. J., Montgomery, L., & Weekes, J. C. (2015b). Predictors of imposter phenomenon among talented ethnic minority undergraduate students. *The Journal of Negro Education*, *84*(2), 175–186.

Ross, S. R., & Krukowski, R. A. (2003). The imposter phenomenon and maladaptive personality: Type and trait characteristics. *Personality and Individual Differences*, *34*(3), 477–484. https://doi.org/10.1016/S0191-8869(02)00067-3

Ross, S. R., Stewart, J., Mugge, M., & Fultz, B. (2001). The imposter phenomenon, achievement dispositions, and the five factor model. *Personality and Individual Differences*, *31*(8), 1347–1355. https://doi.org/10.1016/S0191-8869(00)00228-2

Rudenga, K. J., & Gravett, E. O. (2019). Impostor phenomenon in educational developers. *To Improve the Academy*, *38*(1), 1–17. https://doi.org/10.1002/tia2.20092

Sakulku, J., & Alexander, J. (2011). The impostor phenomenon. *International Journal of Behavioral Science*, *6*(1), 73–92.

Schubert, N., & Bowker, A. (2019). Examining the impostor phenomenon in relation to self-esteem level and self-esteem instability. *Current Psychology*, *38*, 749–755. https://doi.org/10.1007/s12144-017-9650-4

Spencer, S. J., Logel, C., & Davies, P. G. (2016). Stereotype threat. *Annual Review of Psychology*, *67*(1), 415–437. https://doi.org/10.1146/annurev-psych-073115-103235

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*(5), 797–811. https://doi.org/10.1037/0022-3514.69.5.797

Stone, S., Saucer, C., Bailey, M., Garba, R., Hurst, A., Jackson, S. M., Krueger, N., & Cokley, K. (2018). Learning while Black: A culturally informed model of the impostor phenomenon for Black graduate students. *Journal of Black Psychology*, *44*(6), 491–531. https://doi.org/10.1177/0095798418786648

Topping, M. E., & Kimmel, E. B. (1985). The imposter phenomenon: Feeling phony. *Academic Psychology Bulletin*, *7*(2), 213–226. http://psycnet.apa.org/psycinfo/1986-20664-001

Vergauwe, J., Wille, B., Feys, M., Fruyt, F. D., & Anseel, F. (2014). Fear of being exposed: The trait-relatedness of the impostor phenomenon and its relevance in the work context. *Journal of Business and Psychology*, *30*(3), 565–581. https://doi.org/10.1007/s10869-014-9382-5

Villwock, J. A., Sobin, L. B., Koester, L. A., & Harris, T. M. (2016). Impostor syndrome and burnout among American medical students: A pilot study. *International Journal of Medical Education*, *7*, 364–369. https://doi.org/10.5116/ijme.5801.eac4

Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, *47*(4), 302–314. https://doi.org/10.1080/00461520.2012.722805

Zanchetta, M., Junker, S., Wolf, A.-M., & Traut-Mattausch, E. (2020). "Overcoming the fear that haunts your success" – The effectiveness of interventions for reducing the impostor phenomenon. *Frontiers in Psychology*, *11*, 1–14. https://doi.org/10.3389/fpsyg.2020.00405