

OVERCOMING IMPOSTER PHENOMENON IN ACADEMIC FACULTY: USING
COGNITIVE PROCESSING THERAPY TO ADDRESS DISTORTED PERCEPTIONS

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DEDICATION

For my grandmother, Carolyn, who inspired me with her strength and perseverance.

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ABSTRACT

Despite recent research into the effects of imposter phenomenon (IP) on academic faculty members, there has been no research on empirically tested, non-clinical interventions that could help individuals address the distorted cognitions that are related to IP. Using elements from Cognitive Processing Therapy (CPT), we developed and tested a workshop intervention to determine the impact on participants' imposter and Core Self Evaluation (CSE) scores, factors that influenced transfer of learning, the impacts that the workshop had on participants, and what changes can be made to increase the effectiveness. Results showed that after attending the workshop, academic faculty participants (n=19) reported lower imposter scores, increased CSE scores, and experienced increased agency over imposter thoughts and the resulting feelings and lower levels of pressure and anxiety. Based on follow-up focus groups, three main themes were identified regarding factors that had the most impact on participants' transfer of learning and ability to address imposter thoughts after the workshop. Implementation of the workshop as a faculty development tool is proposed, however further research is suggested to determine impact on work outcomes and generalizability to a larger population.

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I. Introduction

Recent research into the effects of imposter phenomenon on academic faculty members in higher education has indicated the need for more empirically tested interventions to address imposter concerns which have been shown to decrease job satisfaction and increase burnout (Hutchins, Penney & Sublett, 2017). In the highly competitive environment of academia, faculty members face increased pressure to procure funding and to conduct and publish research. The high level of stress that faculty members experience, caused by a disparity between excessive demands and limited resources, results in mental, physical, and behavioral responses that make university faculty highly susceptible to the distorted cognitions that are related to imposter phenomenon (Gmelch, Wilke & Lovrich, 1986, Knights & Clark, 2014).

Imposter phenomenon (IP) has been defined as an internal experience of intellectual fraudulence and began with the study of highly successful women who were unable to experience an internal sense of professional success despite many objective achievements (Clance & Imes, 1978). According to Harvey and Katz (1985), individuals who experience IP often believe that they have “fooled” others into overestimating their abilities, attribute success to luck or a mistake, and experience a fear of being exposed as a fake. Characteristics of IP include the inability to internalize success coupled with self-doubt and anxiety. Imposters experience a persistent insecurity concerning intelligence and ability, although they are often high achievers (Hutchins et al., 2017). Given the competitive nature of their demands, the pressure to be a high achiever is intense among academic faculty members which can make them susceptible to imposter concerns (Knights & Clark, 2014). The prevalence of IP in academia suggests the need to identify formal learning and development methods to help faculty address IP and offer productive ways to cope with their imposter experiences.

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The majority of research on how individuals can best cope with IP are either focused on clinical approaches or, at best, on anecdotal and untested approaches. For example, the use of therapy aimed at helping the patient recognize distorted and irrational imposter thoughts has been suggested. Group therapy has also been proposed to normalize the imposter experience and allow imposters to recognize the lack of reason involved in others' imposter thoughts, but neither has been tested (Clance & Imes, 1978; Clance & O'Toole, 1988). Existing research lacks empirically tested non-clinical interventions that could help individuals uncover irrational thought processes and practice new ways of thinking have been suggested to address the distorted views associated with IP.

My research builds and expands on previous studies regarding IP among academic faculty by designing and testing a workshop intervention for academic faculty to help them recognize and effectively address imposter cognitions and feelings. In this study, I tested the efficacy of a non-clinical intervention based on Cognitive Process Therapy (CPT), an evidence-based framework successfully used with veterans and other individuals who have experienced traumatic events or acute stress (Resick et al., 2014). The CPT framework includes activities to help participants recognize and alter irrational thinking patterns that contribute to them thinking and feeling like an imposter. The purpose of my study was to design and pilot test an IP workshop intervention with academic faculty using the Cognitive Processing Therapy framework. The workshop goal is to increase participant knowledge and skill in using CPT tools to effectively address imposter cognitions. My specific research questions include:

1. To what extent did the IP workshop influence participants' imposter and self-evaluation outcomes?
2. What factors influenced participants' transfer of learned skills between workshop sessions and after the workshop ended?

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3. What impacts did the workshop have on participants' coping skills and what changes can be made to the IP workshop to improve participant satisfaction, learning, and transfer outcomes?

This study contributes to the current imposter literature by testing a non-clinical workshop intervention in helping faculty members address imposter concerns as measured by their pre-post outcomes. In the next section, I review previous literature on imposter phenomenon, coping, and work outcomes. I also review Cognitive Processing Therapy (CPT), its use, and how it may be adapted for use in a non-clinical setting to address the distorted cognitions associated with IP.

II. Literature Review

Imposter Phenomenon

Imposter phenomenon research began with the study of highly successful women who expressed feelings of fraudulence and an inability to internalize success. Despite continued, objective evidence to the contrary, these women were not confident in their own intelligence and believed that they had tricked others into believing that they were smarter than they really were (Clance & Imes, 1978). Participants who experienced imposter thoughts often attributed their success to a mistake, luck, or being in the right place at the right time. Though researchers initially attributed imposter thoughts mostly to women, it has since been found that both men and women are likely to experience imposter thoughts, and that 70 percent of people have faced imposter experiences (Gravois, 2007). Some research has suggested that gender differences exist, however Hutchins et al. (2018) only found differences in the coping strategies used by imposters.

Imposter phenomenon is marked by a cycle of self-doubt, anxiety, maladaptive coping strategies such as overpreparing or procrastinating, and success which the imposter is unable to internalize, reinforcing their self-doubt and starting the cycle again (Clance & O'Toole, 1988). This cycle creates distorted cognitions within the imposter and leads to certain behaviors that help to maintain the imposter cycle. The imposter may participate in diligence or over-working in order to prevent being outed as a fraud, using charm to gain the approval of others, avoiding success, and downplaying their own intelligence (Clance & Imes, 1978). Research suggests that this cycle may begin to emerge during an individual's transition into adult life and the formation of their professional identity (Lane, 2015). Imposters often adopt avoidant coping strategies in order to maintain their "fraudulent" identity, which lead to burnout, exhaustion, and failure to realize their full potential (Clance & O'Toole, 1988; Hutchins et al., 2018).

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Recent research conducted among academic faculty, librarians, and research scholars in higher education suggest professionals in the academic setting may be especially susceptible to experiencing IP (Clark et al., 2014; Hutchins et al., 2017; Sharma, 2018). Brems, Baldwin, Davis, & Namyniuk (1994) argue that faculty members who struggle with IP may be less likely to welcome questions and create a positive learning environment for students. Reliance upon avoidant coping strategies, often associated with IP, may discourage imposters in academia from pursuing projects or assignments that expose them to potential criticism. The prevalence of IP in academia, and its implications for success of the organization, faculty, and students, suggests the need for exploration into formal and informal learning and development methods to address IP in faculty members and offer productive ways to cope with imposter experiences.

Previous research into possible interventions aimed at overcoming imposter phenomenon has been largely limited to a clinical setting. I found no previous research into empirically tested, non-clinical approaches that would be fitting for my research, which specifically addresses IP related to faculty members in a work setting. Studies have consistently suggested that a group setting would be most appropriate for IP intervention. Clance and Imes (1978) theorized that group therapy would allow patients to recognize the lack of reality in others' IP experiences, and recommended the use of specific Gestalt techniques to confront distorted cognitions.

Normalizing the imposter experience and social support have been suggested as important factors in addressing IP. One study reported that simply learning about IP and understanding that they were not alone in their experiences was relieving to participants (Lane, 2014). Whitman and Shanine (2012) also found that the higher level of social support participants with IP had, the more adaptive their coping strategies were, while those with less social support depended more heavily on avoidant coping.

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Core Self-Evaluation

Core self-evaluation (CSE) is an expansive personality trait that is reflective of the four individual traits of self-esteem, generalized self-efficacy, neuroticism, and locus of control (Judge & Cable, 1997). CSE has been described as a reflection of an individual's beliefs about their own competence, efficacy, and worthiness, factors that have been found to be highly correlated with imposter phenomenon (Judge, Erez, & Thoresen, 2003; McDowell, Grubb, & Geho, 2015). Researchers have found a significant relationship between CSE and job satisfaction and performance, and individuals with high CSE scores enjoyed higher levels of job satisfaction and sought and held more challenging positions (Johnson, Rosen, & Levy, 2008). Though there has not been extensive research connecting CSE and IP, the common factors that have been related to both suggest a possible relationship between the two. Leonhardt, Bechtoldt, and Rohrmann (2017), while studying the differences between imposters, found an inverse relationship between participants' level of IP and self-evaluation scores.

Cognitive Processing Therapy (CPT)

Cognitive processing therapy (CPT) is an evidence-based treatment developed to address post-traumatic stress disorder (PTSD) and has been a successful tool in working with combat veterans and assault victims (Chard et al., 2012) to help them overcome distorted cognitions resulting from traumatic experiences. Patients are taken through a 12 session process where they are asked to explore the nature of their trauma through writing an impact statement, a description of how the traumatic event impacted them and their view of themselves, others, and the world. Patients are taken through several process interventions that help them identify distorted beliefs attributed to the incident and use specific tools to challenge and ultimately reframe their beliefs (Sobel, Resick, & Rabalais, 2009).

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Cognitive processing therapy has been found to be an effective treatment for decreasing the maladaptive cognitions associated with PTSD. Sobel et al.(2009) found a significant increase in adaptive responses to the traumatic event and decrease in maladaptive responses when comparing the impact statements of patients before and after CPT (2009). Because imposters make similar cognitive errors and remain stuck in problematic thinking patterns to PTSD and trauma survivors, CPT would allow them to examine the primary belief patterns that fuel their imposter thoughts (Ehlers & Clark, 2000; Hutchins et al., 2017).

III. Methodology

Sample

The sample (n=31) was limited to academic faculty in order to determine the effect of the intervention specifically on this population. The pilot participants were recruited from university faculty located at an urban research-intensive university and through a professional organization for faculty members. Participants were recruited for three different sessions offered in 2018 and 2019. Two workshops were offered at the university (n=25) and one at a professional faculty organization's annual conference (n=6).

The final sample included 87% female, 57% White, 17% Hispanic, 9% Asian, 9% Black, and 8% not identified. The sample also consisted of assistant (19%), associate (26%), clinical (4%), and full (4%) professors as well as instructional faculty (4%). 40% of participants classified their rank as "other" and 2% were not identified.

Workshop Intervention

To ensure a valid and appropriate use of CPT in a non-clinical setting, my advisor (Dr. Holly Hutchins) and I consulted with Dr. Anka Vujanovic, Associate Professor of Psychology and Director of the Trauma and Stress Studies Center (TaSSC) at the University of Houston, in the design of the workshop intervention. Dr. Vujanovic and two of her doctoral students advised on adapting the 12 step CPT process to a non-clinical setting with faculty participants. To ensure validity on the adapted content, Dr. Vujanovic and her students reviewed the revised content (workshop agenda, content, and assessments) and we made edits based on their feedback.

The revised content was then used to design a psycho-educational workshop (Overcoming Your Inner Critic: A Faculty Workshop on Managing Imposter Cognitions),

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focused on helping participants address maladaptive thoughts and beliefs and learn specific tools to help build productive thinking patterns. Prior to the first workshop session, and in addition to the online surveys (Time 1) and IRB, participants were also asked to view an instructional webinar on how to write their imposter impact statement to bring to the first workshop session. An impact statement is a written statement in which the participant describes how a traumatic event has affected them and how they view themselves, others, and the world (Resick et al., 2007.).

The workshop included three CPT process tools to help participants identify and challenge distorted thoughts. Each tool was presented to the participants in worksheet format and explained by the facilitator. Examples were provided that represented academic faculty examples. Participants completed the three tools individually and shared their work in dyads.

1. The *A-B-C Worksheet* helped the participants break down their impact statement by identifying the “activating event,” the “stuck point” (belief that they developed in response to the event), and the consequence or how the belief made them feel.
2. The *Challenging Questions Worksheet* included a list of questions that challenges their problematic belief.
3. The *Patterns of Problematic Thinking Worksheet* included seven patterns of thinking that reinforce negative, maladaptive beliefs and self-defeating behaviors. We believe that these problematic thinking patterns are the same cognitive habits developed by imposters that bolster self-doubt.

The workshops were divided into two, two-hour sessions. With the exception of the conference workshop which offered the sessions across two consecutive days, the majority of the participants (83%) had a week between sessions. A week separation allowed participants to

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reflect on their workshop experience and begin practicing the CPT skills introduced in the first session.

The workshop sessions included an introduction to imposter phenomenon and the background of CPT and its relevance to the workshop, a facilitated discussion around specific topics, and a discussion of practice assignments that participants completed outside of the workshop sessions. The facilitators presented participants with the worksheets that were adapted from the CPT manual and strategies for using them to combat imposter thoughts. Participants completed dyadic assignments during the sessions, which included sharing their impact statement with a partner, identifying stuck points, and discussing their patterns of problematic thinking. In between sessions, participants were asked to complete parts of the worksheets using skills presented during the first workshop. At the end of the second session, participants re-wrote their impact statements using the CPT tools to reframe their thoughts and beliefs about the imposter episode and shared it a dyadic partner. The workshop facilitators did not review the original or reframed impact statements.

Instruments

Participants were asked to complete Time 1 and Time 2 assessment to measure change as a result of the workshop intervention and a workshop satisfaction evaluation after each session. Participants were also invited to participate in a focus group to further discuss their use and perceived impact of the workshop skills. Each instrument is detailed below.

Clance Imposter Phenomenon Scale (CIPS). Before the first workshop session, participants completed an online survey that included informed consent (IRB) and Time 1 scales of the *Clance Imposter Phenomenon Scale (CIPS)*, a 20 item scale that identifies if the individual

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exhibits IP characteristics and to what extent by presenting the participant with a series of scenarios. Participants rate each statement using a Likert scale, with responses ranging from 1 = strongly disagree to 5 = strongly agree. Sample CIP items include “I can give the impression that I’m more competent than I really am” and “I sometimes think I obtained my present position or gained my present success because I happened to be in the right place at the right time or knew the right people.” The CIPS has been compared to other impact scales (i.e., Harvey & Katz, 1985) and found to have consistent ($>.80$) reliability and discriminant validity for measuring IP when compared with other imposter scales (Chrisman et al., 1995). For this sample, the CIPS reliability was $a=.92$.

Core Self Evaluation (CSE). Participants were also asked to complete the Core Self Evaluation Scale (CSES), which is a measure of four core personality traits - self-esteem, generalized self-efficacy, neuroticism, and locus of control - that are linked to an individuals’ beliefs about themselves (Judge & Cable, 1997; Judge et al., 2003). The CSES includes 12 Likert scaled items (1 = strongly disagree to 5 = strongly agree), with sample items including “I am confident I get the success I deserve in life” and “Sometimes when I fail I feel worthless.” The CSES was empirically tested and found to be valid and reliable for measuring the four core traits as well as life satisfaction, job satisfaction, and job performance (Judge et al., 2003). For this sample, the CSE reliability was $a=.86$.

Workshop Assessments. After each workshop, participants were asked to complete an evaluation to measure their understanding of imposter cognitions, ability and confidence with using CPT tools to challenge imposter related thinking patterns, participant satisfaction, and which components of the workshop were most and least helpful. Approximately three months

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after the workshop, participants were sent another survey link to complete (Time 2) of the CIPS and CSES.

Focus Groups. Participants (n=14) also volunteered to participate in focus groups to gather information regarding participants' experiences with using their new skills and how the workshops affected their experience with imposter episodes. Dr. Hutchins led each focus group and used an interview protocol to ask the participants five questions that addressed participants' experiences since the workshops, how they used the tools presented or skills that they learned, impacts that participants experienced as a result of the workshops, implications for the future, and suggestions regarding how the workshops were conducted.

The focus groups lasted 45 minutes and were recorded using Zoom. I took notes during the focus group and subsequently transcribed the interviews into a Microsoft Excel document for analysis. Both Dr. Hutchins and I reviewed the data from the focus groups independently and then came together to review the themes they identified. During the first review, inter-rater reliability was at 90%. We discussed and resolved areas of differences in our reviews and agreed upon three representative themes from the focus group data.

IV. Results

The purpose of my study was to test a non-clinical workshop intervention designed to help academic faculty members overcome the distorted cognitions related to imposter phenomenon. In the following section, I discuss the pre and post-workshop results that identify changes in participants' CIPs and CSE scores and the themes extracted from participants to responses during the focus groups to identify factors that influenced participants' transfer of learning during and after the workshops. Finally, I report the focus group responses and results from the workshop satisfaction surveys to determine how participants were impacted by the workshop and identify potential changes to future workshops that will increase participant satisfaction and transfer of learning.

Impact on Imposter and Core Self Evaluation Scores

The first research question assessed the participants' perceived change in their imposter (CIPS) and core self-evaluation scores (CSE) as a result of the workshop. I analyzed median differences between participant Time 1 and Time 2 scores using the Wilcoxon Signed Rank test. I chose this method due to the small sample size ($n=19$, completed T1 and T2 measures) and comparison of repeated measures. As a non-parametric alternative to the repeated measures t-test, the Wilcoxon converts scores into ranks and compares them at Time 1 and Time 2. I chose to compare the median instead of mean because the small sample size could cause the mean to be artificially affected and therefore skew the results. The results indicate a significant difference in participants' CIPS score between Time 1 (Mdn = 3.45) and Time 2 (Mdn = 3.1, $z = -2.585$, $p = .010$). Additionally, participants' reported lower CSE scores during Time 1 (Mdn = 3.17) than Time 2 (Mdn = 3.38, $z = -2.68$, $p = .007$). These results indicate that participants' imposter scores decreased and core self-evaluation increased after attending the workshops. These

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findings indicate not only a significant change in CIPS and CSE scores between Time 1 and Time 2, but also a notable relationship between CIPS and CSE scores. Although I used a different method for analysis, these results are similar to findings reported by Leonhardt et al. (2017) which noted an inverse relationship between CIPS and CSE scores. Participant CIPS and CSE scores were also negatively correlated at both Time 1 ($r = -.676, p = .000$) and Time 2 ($r = -.690, p = .002$). Thus, as CIPS scores decreased CSE score increased.

Transfer of Learning and Factors Influencing Transfer Success

My second research question examined how participants were able to apply their learning and the factors that influenced their application and maintenance of learning (transfer of training; Burke & Hutchins, 2008) after the workshop. I analyzed data from the workshop evaluations ($n=24$) to collect participants' immediate reaction, learning, and transfer intentions from the workshop. Participants noted that the most helpful parts of the workshop were working in dyad partnerships, learning and practicing with the tools in session, and sharing their stories and hearing the stories of other. Evaluations also showed (Table 1) that 100% of participants either strongly agreed or agreed that they felt prepared to use the skills that they learned during the workshop.

I then analyzed post-workshop focus groups ($n=14$) and identified three main themes regarding what participants felt was most impactful in using the CPT skills taught in the workshop to combat imposter thoughts and which workshop features were most influential to participants' transfer of their skills post-workshop. Each are reviewed below with representative rich quotes.

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Table 1. Workshop Evaluation Responses

Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure
I have enhanced my understanding of how to effectively use CPT tools to challenge my imposter-related thinking patterns.	70.8%	29.2%	0.0%	0.0%	0.0%
I have increased my ability to effectively use CPT tools to challenge my imposter-related thinking patterns.	50.0%	45.8%	0.0%	0.0%	4.2%
I have increased my confidence to effectively use CPT tools to challenge my imposter-related thinking patterns.	54.2%	41.7%	0.0%	0.0%	4.2%
Discussing how to address my imposter cognitions in a group setting was helpful to me learning the workshop skills.	83.3%	16.7%	0.0%	0.0%	0.0%
I feel prepared to continue using the skills I gained to challenge my distorted thoughts about being an imposter.	75.0%	25.0%	0.0%	0.0%	0.0%
As a result of the overall workshop, I intend to use CPT tools the next time I have an imposter thought(s) that causes me distress.	78.3%	21.7%	0.0%	0.0%	0.0%

Recognition and Normalization of Imposter Cognitions. Many participants described the impact of normalizing the imposter experience after learning about IP in the workshop and hearing the experiences of others. Simply knowing that they were not alone in their experience of feeling like an imposter was comforting and helped them avoid internalizing imposter thoughts. One participant shared the impact of having a shared vocabulary and understanding that she was not alone:

I now have a sense of awareness to recognize imposter thoughts - to have a vocabulary to use that helps me define and recognize it. I also see it in my colleagues and my friends and it helps me understand where they are coming from. The vocabulary was the thing that helped me really understand it. Knowing that there are terms, that it really is something, not just my paranoia or anxiety.

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Participants also repeatedly noted an improved recognition of imposter thoughts. In the focus group responses, the terms “recognized” and “realized” were used 12 times across 12 statements in relation to imposter thoughts. Faculty members felt that they were better able to recognize when imposter concerns arose in their daily life and that they were able to slow down their thinking and walk away from projects, instead of resorting to previous avoidant coping strategies, such as overworking, denial, or isolation. Several participants described they were able to reengage with projects after taking time away from them to confront problematic thinking and challenge their imposter thoughts. Reflecting on his experiences since the workshop, one participant described how he applied some of the workshop tools around a project he was completing:

Over the Christmas break I was working with some colleagues in Mexico and I had to do a chapter for a book we are publishing, and because of some illness and some family visiting from out of town that got delayed. I was holding up sending it to the review. That was the trigger. (I kept telling myself) “If you were as smart as you think or as everyone thinks you are you would have been able to manage all this and finish the book chapter and finish the manuscript, you’re just a fake.” Being able to just stop the train wreck that is your mind and reframing your narrative. Looking for evidence of the contrary, all that we talked about.

Participants also described that adaptive coping skills were reinforced by sharing their imposter concerns with others who had similar experiences and having their feelings validated. One participant described how she utilized this strategy when confronted with imposter thoughts around taking on a new role:

A new task or goal makes it flare up for me. One of the most beneficial things for me was having a colleague and friend in the group. The only strategy I used was to reach out to someone and tell them that I’m over preparing and exhausted. Just to say it out loud to someone who can validate that I am having imposter thoughts. It doesn’t mean that I can stop it from happening. But I can recognize it better.

Strategies to Challenge IP Cognitions. A second theme that emerged from the focus groups was the impact of the tools that were provided to help challenge imposter thoughts.

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Participants mentioned using each of the three CPT tools: Challenging Questions (5), Problematic Thinking Patterns (3), and identifying Stuck Points (3). Many participants reported that they had experienced emotional learning that allowed them to adapt the knowledge and skills from the workshop into their everyday lives, making them easier to use when imposter thoughts arose.

Participants mentioned that the Challenging Questions worksheet, used to help participants question their problematic beliefs, was most useful tools from the workshop (mentioned 5 times across 14 responses). Participants reported being able to use the challenging questions as situations as arose - either individually or with a trusted peer - without having to use the worksheet itself. One participant shared the experience of having others help her challenge her own imposter thoughts:

Fortunately, my husband kind of did the challenging questions part for me, which helped me get into the patterns of problematic thinking. That just kind of thinking about why I think those things about myself and the situation. It has been difficult but very useful.

The Patterns of Problematic Thinking worksheet helps participants identify patterns in their own thinking that reinforce negative beliefs and self-doubt and work towards correcting them. One participant shared her experience with adapting this tool and being able to identify her distorted thinking patterns. She described the value of learning to identify and confront imposter thoughts as they arose, even if she was not using the worksheets from the workshop:

The workshop taught me that this is a tractable problem and that in the space of one session to the next, I could make progress in busting incidents of imposter. Once I learned that that was possible, it didn't really matter to me how I did it. The value is you teach people that it's possible, but it doesn't necessarily follow that everyone is going to use those particular tools. I did adapt them. I wrote on the mirror a lot and said stuff like, "This is just the imposter."

Finally, participants described that understanding what stuck points were and how they contribute to their experiences was extremely useful in helping challenge imposter thoughts.

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After learning to identify stuck points and challenge negative thinking patterns, participants rewrote their impact statements using the CPT tools to reframe their thoughts about the imposter episode. A common experience reported by participants was being able “to take back control of their thoughts” after learning to understand their stuck points and re-writing their imposter impact statement. One participant described that although she was already familiar with these tools outside of the workshop through professional counseling sessions, rewriting her impact statement helped her understand how she could use them in her everyday life to challenge her stuck points and avoid creating new ones.

I did rewrite my story a couple of times. Rewriting the story or rethinking about it helped to notice how narratives get stuck and hardened over time. So being more open to the revising and reposting of things certainly impacts you. It reintroduces that element of possibility back. It helped me take back control of how I reacted. That is the difference between something happens and the reaction, I don't need to get stuck on that reaction. Returning to the original story was very helpful. I have used tools with other experiences since the workshop. These are tools that are coming from other readings and therapy, but doing this assignment helped me get more serious about putting the tools to action in my general life and in my work. Yesterday, the one that I used was to be aware that I was being triggered by something and that it was not going to turn into a stuck point.

Workshop Setting and Experiential Learning. The third theme was the effect that the format and setting of the workshop itself had on the participants’ understanding of the tools and ability to apply them afterwards. Although not specifically asked, participants shared that there were aspects of the workshop aside from the tools that helped them feel more prepared to challenge imposter thoughts. These included practicing with the tools during the workshop, the small group setting, and learning and experimenting in a safe space. Participants specifically mentioned how working in dyads to share their imposter experiences and practice with using the tools helped them normalize their imposter experiences. Many participants described affirming it was to hear the stories of their dyad partner and others in the workshop:

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One of the really powerful pieces for me was to share my imposter incident and get that out in the open because the previous assumption was that I would be shamed for feeling that way. I heard the person that I was talking with share their experience with me and what happened to them, it really hit me over the head - Oh my god, I'm not the only one. Sharing, getting it out in the open and getting the cloak of secrecy off of it. And hearing from someone else. While this is probably not universal, it is a very fundamental, human way of thinking.

Other participants specifically noted the importance of having the opportunity to practice using the tools. One faculty member shared the impact of learning about the tools and then being given the opportunity to practice the application of them:

I think that the balance between giving a description of what the tools were and where they came from and how to use them, and then letting us use them and practice was good. I can't imagine how it would be different.

Describing his experience with writing the impact statement, another participant shared the importance of actually doing the writing exercise instead of just sharing it aloud, even though it was difficult and he resisted doing it.

The telling each other the story and getting the reaction of the other person and then the actual experience of rewriting it and actually doing it by hand, which I fought tooth and nail. That was magnificent.

Data from the post-workshop evaluations and the focus groups revealed that the aspects of the workshops that most impacted transfer of learning were the recognition and normalization of the imposter experience, the strategies that were provided to challenge imposter thoughts, and the workshop setting, including dyadic groups and practical application of the tools. When participants heard the stories of other faculty members and realized that they experienced the same reoccurring and overwhelming self-doubt, it helped them to recognize the problematic thoughts in their own stories. Participants applied the tools that were provided to help challenge irrational thoughts to their own imposter experiences, creating an emotional learning experience and supporting transfer of learning after the workshop. The small group setting where participants could share with others and working in dyadic partnerships to practice applying their

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new knowledge and skills to their own personal experiences further reinforced the participants' ability to apply these skills after the workshops.

Impacts and Suggestions for Future Changes

The third research question identified the impacts that the workshop had on participants and ways that the workshops could be adjusted in the future to improve participant satisfaction, learning, and transfer outcomes. I evaluated open-ended responses from the workshop evaluations (n=24) and the post-workshop focus groups (n=14) to ascertain how participants were impacted by the workshops, which components of the workshops were most useful to participants, and what, if any, changes should be made in the future.

Participants reported experiencing increased agency over their thoughts and ability to recognize imposter cognitions as a thinking error. Many participants described that they were able "to take back control and give themselves permission" to manage their own feelings and situation. One participant shared his experience of realizing the inaccuracies in his own story:

I realized that I was telling myself a story and that story wasn't completely accurate and it's easy to let that story take a life of its own and influence everything else. But that's not reality. The reality is that there were some real extenuating circumstances that prevented me from delivering what I said I was going to deliver on time. By owning that and reaching out to people and saying "this is what's going on", I stopped telling that fake story that it was about me and I wasn't good enough. Being able to recognize that there is a story emerging and that that story is not 100% accurate and challenging it.

Participants also described learning to understand their own emotions that occurred as a result of problematic thinking. They were able to not only change the way they thought about a situation, but the way they felt about it as well. One participant described the impact of being able to overcome not just the thought, but the feeling that she was not enough:

I didn't use anything specific - maybe "What is the Evidence." But there was emotional learning that occurred. There is the cognitive aspect of it, but the emotional aspect - it's like triumph. That was the most helpful thing. It doesn't matter how I do it. I do it, and I

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know I can. [HH: What do you mean triumph?] I am good enough, I am strong enough, I am smart enough, I am whatever - and all the times I told myself that I wasn't, it was just IP. Once I recognized that and realized that I could beat that cognition, regardless of how I did it. The value is that you teach people that it can be done, how they do it may not matter.

Many participants reported feeling relief and less pressure and anxiety as a result of attending the workshop. One participant shared the physical impact of having the space to give herself permission to work at her own pace:

There was a physicalness that surprised me when I knew what I was doing and could recognize it. I didn't realize I had been holding my breath. Less anxiety. There are different ways of doing this because people learn in different ways, for me it has always been the cognitive. Being able to see a term and put it in a sentence. For me, that makes it more concrete. One of the things I have given myself permission for is - I can pick up the manuscript when I feel like, instead of the pressure of I have to do it. That has given me some space that I haven't had in the past.

In the post-workshop evaluations and during the focus groups, participants were asked for suggestions for ways to improve the workshops in the future, including what should be kept or removed. Participants said that they would like to have more time in session for the partner activities and practicing using the tools. Participants also mentioned that communication between the two sessions would be helpful to reinforce learning, and suggested reminders about practicing with the tools, and ways to keep the information fresh in their minds between sessions. Many participants expressed an interest in staying connected to other participants and ways to continue to practice the tools after the workshops (mentioned in nine responses across focus groups and post-workshop evaluations).

V. Discussion

Building on previous research on imposter phenomenon in the academic workplace, I explored the effectiveness of a non-clinical workshop intervention based on CPT to help faculty members recognize and address imposter thoughts. I also identified the factors that affected transfer of learning, the impacts that they had on participants, and changes that can be made to the workshops for future use. In the next section, I discuss the limitations of the study and implications for future research and application.

Limitations

Although my research has the benefit of providing an empirically tested non-clinical approach to addressing imposter phenomenon, which has not been addressed in previous research, I recognize that certain limitation exist with this study. First, the sample size of participants that completed both Time 1 and Time 2 for CIPS and CSE scores (n=19) is too small to generalize results. However, some of the findings, such as the correlation between CIPS and CSE scores, are similar to findings in previous research, which supports the validity of the data (Leonhardt et al. 2017). Plans for future research are to continue conducting workshops and collecting summative data in order to refine the workshop for distribution to a larger population. The sample is also limited to academic faculty members; therefore results cannot be generalized to a broader population outside of higher education.

Another limitation is the length of time between the workshops and the focus groups (about 90 days). I wanted to allow participants enough time to apply what they learned in the workshops in order to collect information about transfer of learning. However, when responding to questions about the workshop itself, it is possible that the participants may have experienced

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recall decay, which is the inability to accurately recall events over time (Henrichs, 1970). In future iterations, information could be collected through focus groups or surveys in shorter intervals for a longer period of time to help prevent recall decay and create a more robust longitudinal study.

Implications for Future Research

My research found that participants' CIPS scores decreased from Time 1 to Time 2, indicating reduced IP characteristics, however my findings are limited by the small sample size and short time frame of this pilot workshop study. The research could be expanded by applying it to a larger sample across more higher education institutions. My last research question identified ways in which the workshop could be improved, including allowing the participants more time during the session to practice with the tools and ways or reminders to practice outside of the sessions. Further research could refine the workshops to see if allowing for more practice is effective for increasing participants' ability to apply skills outside of the workshop and further decrease CIPS scores. Additionally, this study could be expanded over a longer time frame to study long-term effects on CIPS and CSE scores and participants' continued ability to apply concepts and skills from the workshops over time.

This study is specifically designed to address IP in higher education faculty members. However, future research could apply this framework to other professional settings to determine if the workshops could be used to address IP concerns in other non-faculty roles. Previous research has shown that IP has an adverse effect on emotional exhaustion and job satisfaction (Hutchins et al., 2018). Reducing imposter concerns in other professional settings could contribute to higher job satisfaction, employee engagement, and reduced turnover.

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Implications for Practice

Faculty development is crucial to providing a successful experience for students in higher education. Parkman (2016) argues that the negative effect that IP has on job satisfaction for faculty members also has residual effects on the students they teach and that addressing imposter concerns can help universities retain students and faculty by creating a more inviting atmosphere. Supplying faculty members with support and an effective intervention to address imposter thoughts and beliefs should be a critical concern for faculty development. The study found that faculty members felt better equipped to address imposter thoughts after attending the workshops and experienced a sense of relief and reduced anxiety. If implemented as a faculty development initiative, the workshop could help increase job satisfaction and effectiveness of faculty members, also contributing to student success.

Conclusions

The results indicate that, after the workshops, participants exhibited fewer IP characteristics and more positive evaluations of their own competence and worth. Participants reported that they felt more capable of addressing imposter thoughts, which they attributed to an increased recognition and normalization of the imposter experience, and the experiential learning that took place during the workshops and prepared them with strategies to confront imposter cognitions as they arose. Overall, the workshops were effective at helping participants increase their ability to deal with imposter experiences. Further research is needed to determine the generalizability to larger or non-academic settings, and if potential changes to the workshops would further increase participants' ability to manage imposter thoughts. Future research is also suggested to examine the impact the workshop has on work outcomes that are related to imposter phenomenon.

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