

## BRIEF REPORT

# Impostor Phenomenon Among Family Medicine Residency Program Directors: A CERA Study

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## ABSTRACT

**Background and Objectives:** Impostor phenomenon (IP) can be described as feelings of inadequacy that exist despite apparent success. Although IP may be related to multiple important outcomes in physicians, it has not been examined among residency program directors (PDs).

**Methods:** The seven-item Leary Impostorism Scale (LIS) was added to the 2021 Council of Academic Family Medicine Educational Research Alliance (CERA) PD survey. In addition to standard questions, we surveyed PDs about their likelihood to leave their role, whether they started their PD role due to an unexpected transition, their beliefs concerning workplace evaluations relative to self-assessed performance, and their perceived support in completing PD responsibilities.

**Results:** Of the 257 PDs included in the survey (response rate approximately 41%), 28% (N=71) reported no IP. IP did not statistically differ across gender or race. LIS scores were lower among Hispanic/Latino respondents, but only 8% of our sample (N=20) identified as Hispanic/Latino. LIS scores did not significantly differ by PD likelihood to leave their position or for PDs starting their position due to a sudden transition. Respondents who felt that evaluations overestimated actual performance had higher LIS scores, as did those with lower levels of perceived support in completing administrative responsibilities and those with less time in their PD role.

**Conclusions:** Most PD respondents did not report high levels of IP. Short duration of PD role, lack of programmatic support, and negative self-evaluations were correlated with higher levels of IP. Future research should examine interventions or resources to help those with IP thrive.

## INTRODUCTION

Impostor phenomenon (IP) describes an intense experience of intellectual and professional fraudulence, often experienced in high-achieving individuals.<sup>1,2</sup> Given the intensity of medical culture, IP has been examined in medical professionals and trainees and is associated with higher burnout, more anxiety and depression, and lower self-compassion and self-esteem.<sup>3–5</sup> IP has been found to occur in almost a quarter of male and half of female medical students.<sup>5,6</sup> Studies have suggested that IP is more prevalent in females and individuals identifying as underrepresented in medicine (URiM).<sup>2,7,8</sup>

A limitation of IP research is that the majority of studies examine individuals in training or early in their medical careers. Recent qualitative research highlights IP as a challenging component of professional identity formation in early-career physicians,<sup>9</sup> suggesting that IP may lessen as professional identities solidify. Similarly, a quantitative study

showed that IP among attending surgeons is lower than among residents.<sup>10</sup> However, no studies have exclusively evaluated IP among physician leaders such as residency program directors (PDs),<sup>6,10</sup> which is critical data given PDs' significant influence in medical education. For PDs, career-related variables, such as suddenly transitioning into a new role or lack of organizational support, may influence IP, as could individuals' interpretation of workplace feedback.<sup>11–13</sup> This study aimed to quantify the prevalence of IP in family medicine residency PDs and to examine associations with demographic and career experience variables.

## METHODS

This project was part of a study conducted by the Council of Academic Family Medicine Educational Research Alliance (CERA) and was approved by the American Academy of Family Physicians Institutional Review Board in September 2021.

Survey data were collected between September and October 2021.<sup>14</sup>

Our study used the seven-item Leary Impostorism Scale (LIS), which measures feelings of being an impostor or fraud using first-person statements on a five-point scale from 1=“Not at all characteristic of me” to 5=“Extremely characteristics of me.”<sup>15</sup> The LIS correlates with other IP measures, has good construct validity, has intermediate content validity and interpretability, and has intermediate to strong internal consistency.<sup>15–17</sup> Additionally, we developed four questions to capture PD career experiences.

We excluded respondents who did not complete the LIS questions. By summing responses to the questions, we calculated one LIS score per respondent. LIS scores range from 7 to 35 and were analyzed on a continuum. We considered a score of 7 (minimum possible) to reflect no IP. Due to ordinal, nonnormally distributed data, we used Mann-Whitney U tests ( $\alpha=0.05$ ) to compare LIS scores across PD demographic and career-related variables.

## RESULTS

CERA identified 631 PDs, of whom 275 (44%) responded to the survey. Of those, 18 (6.5%) were excluded for not completing the LIS questions. Our study included responses from 257 PDs, representing 41% of all PDs identified by CERA (Table 1). The average LIS score was 11.4, the median was 10, the range was 7 to 35, the distribution was right-skewed, and 28% of respondents (N=71) reported no IP (Figure 1).

The four questions we developed to capture PD career experiences are shown in Table 2. LIS scores did not differ by gender or race. Hispanic/Latino PDs had significantly lower LIS scores, indicating lower IP, compared to non-Hispanic/Latino PDs. However, only 8% of respondents (N=20) identified as Hispanic/Latino. Sixteen percent of respondents (N=42) indicated that they were likely to leave their position within the next year. LIS scores did not differ across those likely to leave versus those neutral or unlikely to leave. Nearly half of respondents (49%, N=125) started their role due to an unexpected transition, and LIS scores did not differ across those with versus without a sudden transition. Seven percent of responding PDs (N=17) agreed that evaluations overestimated their actual performance and had higher LIS scores compared to those who felt neutral or disagreed. Nearly half of respondents (45%, N=116) reported not having all the support they needed to complete their responsibilities, and they had higher LIS scores compared to those who felt neutral or well-supported. LIS scores were higher for respondents who had spent less time in their PD role (<4 years vs 4+ years).

## DISCUSSION

Our study found a lower prevalence of IP in PDs compared to prior studies of IP in medical trainees and medical students.<sup>3,6</sup> While 72% of PDs in our study (N=186) had an LIS score higher than the minimum possible score of 7, indicating some level of IP, a much smaller subgroup of PDs reported IP levels at the upper end of the LIS. We also found higher levels of IP in PDs

who had spent less than 4 years in their role. Those findings suggest that IP may diminish as PDs gain experience and spend more time in professional roles. A qualitative study of professional identity formation among early career physicians also supports this interpretation; the researchers described IP as a part of a developmental process of learning to “fit in” to a professional role.<sup>9</sup>

PDs in our study who reported inadequate support had higher IP than those who perceived adequate support. This effect could relate to an external locus of control or stress from societal or institutional expectations.<sup>18,19</sup> Additionally, respondents who felt that evaluations overestimated their actual performance reported higher levels of IP. Qualitative research has suggested that this occurs “at the extreme end of the spectrum of self-doubt.”<sup>7</sup> This finding may be amplified by perfectionistic tendencies.<sup>20</sup> Despite these findings, only 16% of respondents (N=42) reported planning to leave their position within the next year, indicating that the current average PD term may be longer than previously reported.<sup>21</sup>

Several of our findings contradict existing literature. Unlike previous research correlating IP, burnout, and leaving a role, we did not find higher IP among PDs likely to leave their position.<sup>22</sup> While previous research has reported correlation between IP and sudden transitions in starting a new role, we did not find this correlation among PDs.<sup>11</sup> We found no difference in IP across gender, in contrast to prior studies showing higher IP in women, but consistent with one study showing no difference in IP across gender in business managers.<sup>2,7,20</sup> Hispanic/Latino PDs reported lower levels of IP, which was surprising given the additional challenges faced by URiM physicians.<sup>8</sup> Our findings suggest that individuals in PD roles may have different characteristics than previously studied medical students and residents.<sup>6,7</sup>

Our study had several limitations. While our response rate was similar to prior CERA studies, our results may not generalize to PDs who did not respond or to other medical specialties. The number of residency PDs is constantly changing, so we could not report the exact representativeness of our sample. All data is self-reported and cross-sectional. Our data was limited to information collected within the 2021 CERA survey.

PDs have considerable responsibilities and influence on medical trainees; therefore, understanding the unique challenges and needs of this population is important. This study provided novel evidence that the prevalence of IP may be lower among experienced family medicine PDs than among physicians earlier in their careers. However, while IP may be a component of professional identity formation, seeking to understand a subgroup of individuals experiencing IP at a higher level or for a longer duration than their peers may be beneficial. Future research should examine associations between IP and institutional support for PDs, self-evaluations, and length of time in the PD role.<sup>23</sup> Further work is also needed to determine optimal interventions and resources to help address IP.

## Presentations

This study was presented at the 2023 STFM Annual Spring Conference in Tampa, Florida, April 30–May 2, 2023.

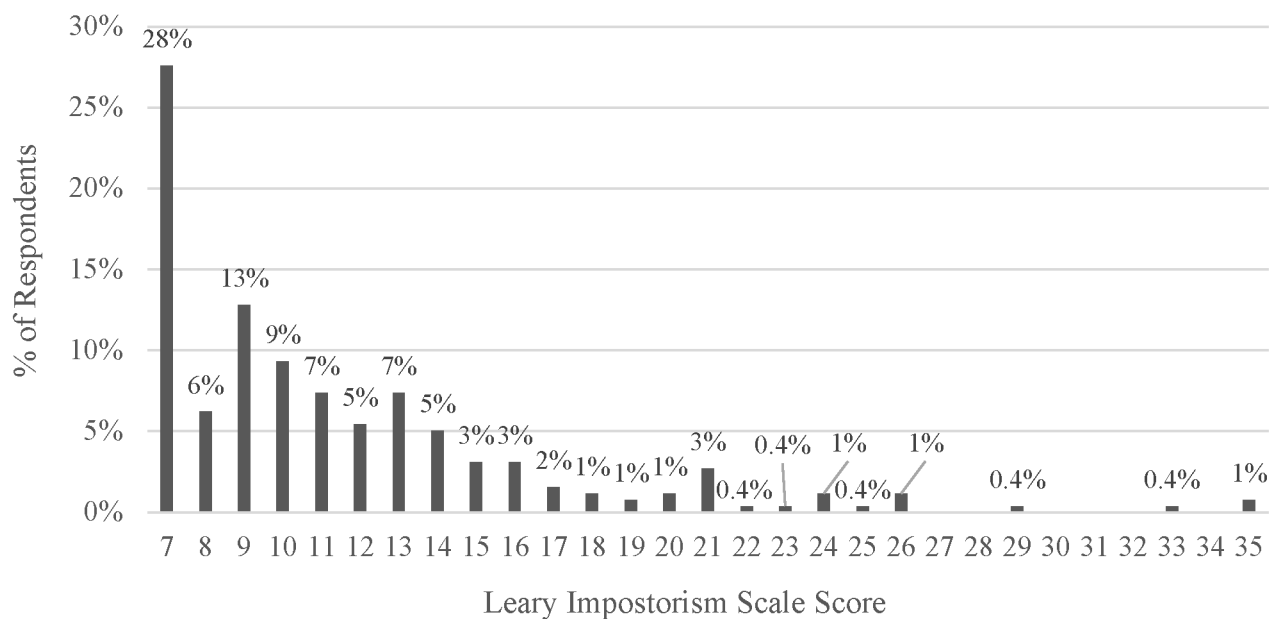
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**TABLE 1.** Respondent Demographics (N=257)

	% (n) of respondents
<b>Gender</b>	
Male	52 (133)
Female	46 (119)
Other or unspecified	2 (5)
<b>Ethnicity</b>	
Hispanic/Latino	8 (20)
Non-Hispanic/Latino	89 (230)
Unspecified	3 (7)
<b>Race</b>	
Non-White	15 (38)
White	79 (203)
Unspecified	6 (16)
<b>Total years as a program director</b>	
<1 year	6 (16)
1 to <4 years	33 (86)
4 to <10 years	35 (90)
10+ years	25 (63)
Unspecified	1 (2)
<b>Type of residency program</b>	
Community	81 (208)
University/military	17 (44)
Other or unspecified	2 (5)
<b>Residency size</b>	
<19	43 (110)
19–31	42 (107)
>31	16 (40)
<b>Size of the community the residency is located in</b>	
Less than 30,000	11 (27)
30,000 to 74,999	13 (34)
75,000 to 149,000	22 (57)
150,000 to 499,999	26 (68)
500,000 to 1 million	12 (30)
More than 1 million	15 (39)
Unspecified	1 (2)
<b>Percentage of current faculty that identify as underrepresented in medicine</b>	
0%	23 (58)
<5%	16 (42)
6%–10%	16 (42)
11%–20%	18 (47)
21%–30%	8 (21)
31%–50%	9 (23)
>50%	8 (21)
Unspecified	1 (3)

**FIGURE 1.** Distribution of Leary Impostorism Scale Scores



**TABLE 2.** Distribution of Responses and Leary Impostorism Scale Scores Across Program Director Demographics and Experiences

	% (n) of respondents	Leary Impostorism Scale median (IQR)	Leary Impostorism Scale average (SD)	P value*
<b>Demographic-related variables**</b>				
<b>Gender</b>				.29
Male	53 (133)	10 (7-13)	10.8 (4.1)	
Female	47 (119)	10 (8-14)	12.1 (6.2)	
<b>Ethnicity</b>				.001
Hispanic/Latino	8 (20)	7 (7-9)	8.6 (2.6)	
Non-Hispanic/Latino	92 (230)	10 (8-13)	11.6 (4.9)	
<b>Race</b>				.85
Non-White	16 (38)	10 (8-13)	11.8 (6.3)	
White	84 (203)	10 (7-13)	11.4 (4.9)	
<b>Career experience-related variables</b>				
<b>I am likely to leave my position as program director within the next 12 months.</b>				.69
Likely or highly likely	16 (42)	10 (8-13.8)	12.3 (6.9)	
Neutral, unlikely, or highly unlikely	84 (215)	10 (7-13)	11.2 (4.5)	
<b>I started my role as program director due to a sudden or unexpected transition.</b>				.70
Agreed or strongly agreed	49 (125)	10 (7-13)	11.3 (5.3)	
Neutral, disagreed, or strongly disagreed	51 (132)	10 (7.8-13)	11.5 (5.1)	
<b>I feel that informal feedback and/or summative evaluation overestimate my actual performance as program director.</b>				<.001
Agreed or strongly agreed	7 (17)	14 (11-21)	15.7 (5.0)	
Neutral, disagreed, or strongly disagreed	93 (240)	10 (7-13)	11.1 (5.1)	
<b>I have as much support as I need to complete all my program director responsibilities.</b>				.001
Neutral, agreed, or strongly agreed	55 (141)	9 (7-12)	10.6 (4.6)	
Disagreed or strongly disagreed	45 (116)	11 (9-14)	12.4 (5.7)	
<b>Total years as a program director</b>				.002
<4 years	40 (102)	11 (8-15)	12.8 (6.0)	
4+ years	60 (153)	9 (7-13)	10.6 (4.4)	

\*P values are from Mann-Whitney U tests.

\*\*Respondents who were missing data for a question were excluded from the analysis of that variable (shown as “other” or “unspecified” respondents in Table 1).

Abbreviations: IQR, interquartile range; SD, standard deviation