

Family Medicine Residents and the Impostor Phenomenon

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Background and Objectives: *Some family medicine residents often doubt their ability to become competent family physicians. Individuals who believe themselves to be less intelligent and less competent than others perceive them to be are described in the psychological literature as having the “impostor phenomenon.” This study sought to determine the prevalence of the impostor phenomenon in family medicine residents. **Methods:** We conducted a mail survey of all 255 family medicine residents in Wisconsin. The survey included the Clance Imposter Scale and two scales measuring depression and anxiety. **Results:** A total of 185 surveys were returned, for a 73% response rate. Forty-one percent of women and 24% of men scored as “impostors.” Impostor symptoms were highly correlated with depression and anxiety. **Conclusions:** About one third of family medicine residents believe they are less intelligent and less competent than others perceive them to be. These residents suffer psychological distress and do not believe they will be ready to practice family medicine after graduation. Teachers may assist these learners by letting them know such feelings are common and by providing regular, timely, and positive feedback.*

(Fam Med 2004;36(4):248-52.)

Some family medicine residents doubt their ability to become competent physicians despite consistently excellent evaluations and test scores. Such professional uncertainty may be a personality characteristic, a by-product of residency training, or a normal professional developmental process. Residents who question their own competence may perform better due to enhanced motivation, or they may suffer distress during the already-stressful residency training years.

Clance and Imes¹ first described the “impostor phenomenon” in high-achieving women who believe themselves to be less intelligent and less competent than others perceive them to be. Subsequent studies have since documented that the impostor phenomenon occurs in both men and women^{2,3} at similar levels. Individuals with the impostor phenomenon believe they have achieved success by fooling others into believing they are intelligent and capable. They live with the fear that they will be discovered as intellectual frauds, and this fear has been shown to cause psychological distress. Indeed, Clance and O’Toole² found that feelings

of inadequacy, such as those accompanying the impostor phenomenon, affect individuals’ ability to function at their highest level. Chrisman and Pieper⁴ found that the impostor phenomenon was associated with high levels of depression and anxiety, while September et al⁵ showed that college students with higher impostor scores demonstrated poorer self-acceptance.

Henning⁶ surveyed medical, nursing, dentistry, and pharmacy students and measured impostor traits and levels of perfectionism. She measured psychological distress using the Brief Symptom Inventory by Derogatis and Spencer.⁷ Thirty percent of students frequently had impostor feelings, and 28% of students scored in the clinical range of psychological distress. The strongest predictor of medical student distress was the impostor score. More-recent publications focus on personality characteristics and coping mechanisms of impostors with varying results.⁸⁻¹²

Medical students frequently ask about the volume of knowledge required of a family physician as they consider specialty choice,¹³ but it is not known whether the need to acquire knowledge causes more stress for family medicine residents than for other professionals in training. Family medicine residents do, however, spend significant time rotating with other specialists

who demonstrate extensive knowledge in narrowly focused areas of medical practice. Exposure to these specialists might further exacerbate family medicine residents' fears regarding their ability to practice the broad range of family medicine.

This study's goal was to determine the prevalence of impostor feelings in family medicine residents and whether impostor scores are associated with anxiety and depressive symptoms. If family medicine educators are able to identify the residents who are most distressed by their fears of professional inadequacy, they might be able to minimize that distress during training and help these young family physicians better realize their professional goals.

Methods

Funding for this study was provided by the University of Wisconsin (UW) Department of Family Medicine small grants program. The UW institutional human subjects committee approved the study protocol.

Survey Methods

All 225 family medicine residents in Wisconsin were mailed a cover letter inviting participation, a return-addressed postcard to indicate participation, the study instrument, and a candy bar as a thank you. As an incentive to participate, residents who returned the postcard were eligible to win one of two \$500 cash prizes. Using the Dillman¹⁴ method, reminder postcards were sent 1 week after the initial mailings, and second surveys were sent to nonrespondents at 3 weeks. A random sample of 50% of nonrespondents received follow-up phone calls from a research assistant.

Survey Instrument

The survey instrument consisted of five scales and took 15 minutes to complete. The survey instrument was piloted tested with 15 younger professional department employees, family medicine fellows, and early career faculty.

The first scale on the survey was the validated,⁴ internally reliable³ Clance Impostor Scale. This scale is composed of 20 items that subjects rate on a 5-point scale of agreement (Table 1). No normative data exist for the impostor scale. Clance and Imes¹ originally described degrees of impostor feelings, with a score over 62 indicative of "intense impostor feelings." Since then, a clinical cutoff of 62 has been established,^{3,5,6} we used this cutoff level in our study.

Two scales were used to measure anxiety: the widely used, validated, and reliable State Anxiety Scale and the Trait Anxiety Scale¹⁵ by Spielberger. The State Anxiety Scale score consists of 20 statements with a 4-point scale of agreement addressing current feelings (eg, "I feel calm, I feel jittery"). The Trait Anxiety Scale score asks subjects to describe how they usually feel ("I feel

secure, I make decisions easily"). Depression was measured using nine questions probing *Diagnostic and Statistical Manual, Fourth Edition* (DSM-IV) criteria.^{16,17} Finally, self-esteem was measured using the most common measure of self-esteem, the Rosenberg Self-esteem Scale.¹⁸

The instrument also included six questions written by the authors. These questions asked residents about their perception of training adequacy, readiness to practice family medicine, and availability of family medicine role models. The questions were included because we hypothesized that responses to these questions might be associated with impostor feelings.

Data Analysis

Association of binomial variables was performed using chi-squared analysis. Pearson correlation coefficients were generated for continuous variables. Statistically significant variables were then used in multivariate analysis to predict impostor scores.

Results

Response Rates

The initial and follow-up mailings to 255 residents resulted in 181 responses (174 surveys and seven refusals). A random 50% sample of the 74 nonrespondents was contacted by phone. Of the 37 contacted, three were no longer in a residency program and were ineligible. Eight participated, seven stated they would participate but never returned the survey, two declined, and three had participated but had not returned the lottery postcard, so their participation had not been recorded. Fourteen never returned phone calls and were lost to follow-up. In all, 194 residents responded, 185 (73%) by participating and nine (3.5%) by declining participation. To protect resident physician privacy, demographic data were not collected on nonparticipants.

Subject Demographics

Ninety-eight respondents (53%) were women, and 87 (47%) were men. The mean age was 33 years, with a range of 26–57 years. Sixty-five percent of respondents reported being married or living with a partner, 31% were single, and 4% were divorced or widowed. Respondents consisted of 47 first-year (25%), 68 second-year (37%), and 68 third-year residents (37%). Two respondents reported that they were fourth-year residents.

Impostor, Depression, and Anxiety Scores

Forty-one percent of women scored as impostors, compared to 24% of men ($P=.02$). Thirty-seven percent of women and 27% of men were depressed. Women scored higher on the Trait Anxiety Scale but not on the State Anxiety Scale (Table 2).

Table 1

The Clance Impostor Scale*

Question	Mean Score	(SD)
• I have often succeeded on a test or task even though I was afraid that I would not do well before I undertook the task.	3.7	(0.8)
• I tend to remember the incidents in which I have not done my best more than those times I have done my best.	3.4	(1.1)
• If I'm going to receive a promotion or gain recognition of some kind, I hesitate to tell others until it is an accomplished fact.	3.4	(1.2)
• I can give the impression that I'm more competent than I really am.	3.3	(1.0)
• I often compare my ability to those around me and think they may be more intelligent than I am.	3.2	(1.1)
• If I receive a great deal of praise and recognition for something I've accomplished, I tend to discount the importance of what I have done.	3.0	(1.1)
• I often worry about not succeeding with a project or on an examination, even though others around me have considerable confidence that I will do well.	3.0	(1.1)
• It's hard for me to accept compliments or praise about my intelligence or accomplishments.	2.9	(1.1)
• I feel bad and discouraged if I'm not "the best" or at least "very special" in situations that involve achievement.	2.9	(1.2)
• I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt.	2.8	(1.0)
• I rarely do a project or task as well as I'd like to do it.	2.8	(1.0)
• Sometimes I'm afraid others will discover how much knowledge or ability I really lack.	2.8	(1.2)
• When people praise me for something I've accomplished, I'm afraid I won't be able to live up to their expectations of me in the future.	2.7	(1.1)
• I avoid evaluations if possible and have a dread of others evaluating me.	2.6	(1.1)
• I'm disappointed at times in my present accomplishments and think I should have accomplished much more.	2.6	(1.1)
• I'm afraid people important to me may find out that I'm not as capable as they think I am.	2.6	(1.1)
• When I've succeeded at something and received recognition for my accomplishments, I have doubts that I can keep repeating that success.	2.4	(1.0)
• 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.	2.3	(1.1)
• At times, I feel my success has been due to some kind of luck.	2.3	(1.1)
• Sometimes I feel or believe that my success in my life or in my job has been the result of some kind of error.	1.8	(.9)

* Instrument scoring: 1=not at all true, 2=rarely, 3=sometimes, 4=often, 5=very true

SD—standard deviation

Impostor scores were correlated with depressive symptoms ($r^2=.45$, $P<.0001$), with Trait Anxiety ($r^2=.65$, $P<.0001$), and State Anxiety ($r^2=.39$, $P<.0001$). Impostor scores did not vary with year of training, residency program, age, or marital status. Those who scored highest on the Impostor Scale had the lowest self-esteem as measured by the Rosenberg Self-esteem Scale ($r^2=-.63$, $P<.0001$).

Only one of the survey questions written by the authors was associated with impostor feelings. Seventy-five percent of impostors worry they will not be ready to practice after graduation, compared to only 41% of those not scoring as impostors ($P<.0001$). Sixty percent of women and 43% of men ($P=.02$) worry they will "not be ready to practice full-range family medicine" after graduation. Eighty-five percent of respondents worried about the volume of knowledge required to provide good care to a wide variety of patients when they chose family medicine as a specialty. Eighty-nine percent feel they are obtaining the knowledge and experience they need to become competent family physicians.

Most subjects (93%) felt they had family physician role models they wanted to emulate, and a similar ma-

jority (84%) felt that specialists they worked with valued family physicians. Multivariate analysis was performed using gender, depression, anxiety, year of residency, and Trait Anxiety to predict the impostor phenomenon. When Trait Anxiety was controlled, gender no longer predicted impostor feelings. Depression, trait anxiety, and self-esteem remained statistically significant in this model (Table 3).

Discussion

Our study found that about one third of family medicine residents scored as impostors, meaning that they do not feel as intelligent or competent as others perceive them to be, and women were more likely to score as impostors than were men. Women were more likely to be depressed and have troublesome scores on the Trait Anxiety scales. Family medicine residents who have high scores on the Impostor Scale also struggle with depression, anxiety, and self-esteem, which are highly interrelated.

These same residents are concerned they will not be prepared to practice family medicine after residency graduation. In contrast, almost 90% of respondents, whether impostors or not, felt they were obtaining the

training they needed to become competent family physicians. Thus, all agree the training is adequate, but the impostors still worry they will not be prepared for practice. Whether these residents are more likely to restrict their scope of practice after graduation is unknown.

Prevalence of impostor symptoms does not vary with year of residency, which may be counterintuitive to those who work regularly with trainees. A longitudinal survey following a cohort throughout their training process into practice could elucidate whether “once an impostor, always an impostor” or whether impostor tendencies tend to resolve spontaneously with time and experience.

Theories regarding the etiology of the impostor phenomenon are many. Clance and Imes¹ theorize that the impostor phenomenon originates with dynamics within one’s family of origin. Harvey and Katz¹⁹ view the impostor phenomenon as a transient developmental experience associated with changes in responsibilities. McIntosh²⁰ argues that societal messages about gender contribute to the impostor phenomenon in women.

It is unclear from the results of our study whether worry related to the impostor phenomenon causes anxiety and depression, whether anxiety and depression make one more susceptible to impostor tendencies, or if both are related to an unknown common variable. The fact that impostor scores were more highly correlated with Trait Anxiety than State Anxiety could suggest that these tendencies are more of a personality characteristic exacerbated during training rather than caused by the training process.

Without normative data for young professionals in other fields, there is no way to know whether family medicine residents are unique among medical residents or among other young professionals. In discussions regarding the impostor phenomenon, resident physicians note that medical training necessitates that young physicians play an impostor role of sorts: the first day of residency they are called “doctor” but do not feel themselves to be the knowledgeable physician they

associate with that title. During informal discussions, residents also felt that family medicine training may exacerbate this tendency through rotations in which residents spend a month as an obstetrician, a month as a cardiologist, etc.

The psychological literature offers limited approaches to assist those with impostor feelings. Clance and Imes²¹ recommend frequent, specific feedback to help those who doubt their abilities. Specific, timely feedback that clarifies the specific behavior the learner performed well may help demonstrate why others perceive them to be capable. More-generalized feedback is dismissed by impostors as further evidence that they are “fooling people.” Clance and Imes additionally recommend careful time management strategies to break cycles that can reinforce impostor feelings.

Limitations

Limitations of this study include the lack of normative data for the Clance Impostor Scale among the population in general, in young professionals, and in other medical specialties. The Clance Impostor Phenomenon Scale also has limitations in that all questions are scaled in the same direction—the numeral one always corresponds to lack of the impostor phenomenon and the numeral five to presence of the phenomenon, thus threatening internal validity of the instrument. Further, our sampling was a convenience sample of family medicine residents in Wisconsin who may not represent family medicine residents across the nation. In addition, to protect resident privacy, no demographic data were collected for nonrespondents, preventing us from assessing the degree to which selection bias may have occurred.

Conclusions

If the family medicine residents surveyed are representative, a substantial proportion of our junior colleagues are struggling with their professional self-esteem. Teachers of family medicine have a responsi-

Table 2

Gender Differences in Responses Among Respondents

	Men	Women	P Value
Mean impostor score	54.3	58.5	.03
Percent impostors	24%	41%	.02
Depressed	26%	37%	.07
State Anxiety score	38.0	40.1	.18
Trait Anxiety score	38.0	41.6	.01
Self-esteem score	32.5	31.9	.35

Table 3

Multivariate Analysis to Predict Impostor Scores

Variable	Coefficient Estimate	F Value	Pr>F
Self-esteem	-0.98	20.32	0.0001
Depression	.66	4.2	0.042
Residency year	—	1.55	0.20
Residency year 1	3.63	—	—
Residency year 2	6.82	—	—
Residency year 3	6.89	—	—
Trait Anxiety	0.53	25.59	0.0001
Gender female	1.35	.85	0.3572

bility to assist these trainees to experience a smoother transition into independent family physicians. Family medicine residents who are struggling might obtain some solace just by knowing their experience is common, occurring among one third of their peers, according to the results of this study. Learners may also benefit by understanding that some feelings of self-doubt are normal in family physicians throughout their careers. By sharing our own reservations about poor outcomes, management decisions, or staying current with the literature, we offer reassurance for learners who feel they could "never be as smart as the faculty." Perhaps it is our own impostor feelings as teachers that make us less likely to share our own misgivings.

Finally, taking the time to touch base with trainees on an informal basis can help identify those who might be anxious or depressed, and teachers may encourage such trainees to seek out appropriate resources. Impostor feelings among family medicine residents deserve further study to better determine the import of these feelings on learning and practice. If these residents are choosing limited practice models after graduation, that has an influence on our specialty. The impostor phenomenon and its association with anxiety and depression raises the question of all three contributing to physician burnout. As educators and mentors, we understand our responsibility to assist learners to become caring, competent physicians. We also have a responsibility to help them believe in their own capability.

Acknowledgments: Thanks to Stacey Plahn for her outstanding assistance throughout the project and to the University of Wisconsin Department of Family Medicine for research grant support.

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