

## **RUHSMC Research Proposal**

### **1. Title:**

An Exploratory Study: The effects of impostor phenomenon among physicians of differing backgrounds

### **2. Background and Significance:**

Given the immense amount of knowledge that is expected and the sudden onslaught of responsibility that begins with residency training, it is no wonder that many physicians suffer from feelings of inadequacy in medical practice despite their academic accomplishments. These individuals often attribute their achievements to forces outside of their own control, rather than their own diligence, intelligence, or skill. Impostor phenomenon, which is characterized by “chronic feelings of self-doubt and fear of being discovered as an intellectual fraud,”<sup>1</sup> has been applied in recent literature to describe this inaccurate perception of incapability that many physicians face.

The medical profession involves making potentially life-altering decisions on a daily basis with limited room for error. Physicians suffering from impostor phenomenon may feel increased stress due to their perceived incompetence. This may contribute to the higher rates of mental illness among young physicians and other medical professions. A 1998 study by Henning et al found that 30% of a population of 477 medical, dental, nursing, and pharmacy students demonstrated a level of impostor phenomenon, which was found to be the strongest predictor of general psychological distress in this population.<sup>2</sup>

A 2004 study among 181 Family Medicine residents further revealed that about one third of the study population demonstrated impostorism. These residents who had high scores on the impostor scale also demonstrated levels of depression, anxiety, and low self-esteem, which may either predispose subjects to developing impostor phenomenon or which may be a result of suffering from impostor phenomenon itself.<sup>3</sup> However, qualitative studies exploring physicians’ experience with impostor phenomenon as it relates to mental health as well as methods of overcoming the issue are limited.

Our study aims to investigate the effects of impostor phenomenon among resident and attending physicians employed by Riverside University Health System as well as its relationship to level of medical training. We will evaluate additional demographic variables in hopes of discovering the characteristics of physicians that are associated with higher degree of impostor phenomenon within our study population, including a comparison between different specialties. We can compare the results of the relationship among different demographics and level of impostor phenomenon to those results from previous studies and hopefully shed light on aspects that put individuals at increased risk for impostor phenomenon.<sup>3,5-6</sup> We will also evaluate physicians’ subjective experience with impostorism, how they feel the phenomenon has affected their mental health, physicians’ coping mechanisms, and interventions the physicians feel would support those facing impostor phenomenon through focus group discussions. This will help direct the focus of physician well-being programs within RUHS to offer guided support to those suffering from impostor phenomenon and its potential mental health effects. Future studies may investigate relationship between impostor phenomenon and mental illness, as well as the impact of impostor phenomenon directed resident well-being programs on prevalence of impostor phenomenon and depression/anxiety.

### **3. Research questions:**

1. What is the effects of impostor phenomenon among resident and attending physicians employed by RUHS?
2. What characteristics of physicians may be associated with a higher degree of impostor phenomenon?
3. Do physicians facing impostor phenomenon feel impostorism affects their mental health?
4. What interventions do physicians feel can be implemented at RUHS to support those experiencing impostor phenomenon?
5. How do study participants feel about their results?

### **5. Specific Aims:**

1. To understand the effects of impostor phenomenon among RUHS resident and attending physicians
2. To determine potential characteristics of physicians that may be associated with a higher degree of impostor phenomenon
3. To understand how physicians feel impostor phenomenon affects their mental health
4. To determine what interventions physicians feel can be implemented at RUHS to support those experiencing impostor phenomenon
5. To understand how participants feel about their results
6. To share results with GME to assist with development of a physician wellness curriculum aimed at supporting those facing impostor phenomenon

### **6. Methods-Design:**

1. **Study design:** This will be a cross-sectional pilot study that will analyze data from our study population between the years of 2020-2021. We will administer online surveys to the participants followed by focus groups with individuals who consent to participation in the study. These focus groups were originally expected to be held in a meeting room in person; however, in light of the current Covid-19 pandemic, we will perform our focus groups online using a video chat platform.

Recruitment emails will be sent by GME to all resident and attending physicians employed by RUHS. The emails will consist of background information about the study, a copy of the consent to participation in the study, and researcher contact information for those who wish to participate in the study. Those who agree to participate in the study will receive an online link to our Google Forms survey in their email, which we will ask participants to complete individually prior to the focus group discussion. A meeting time for a conference call via Microsoft Teams will be coordinated with the participants. Participants will be given a passcode for entry into a private, encrypted Microsoft Teams call for group discussion. Multiple focus groups may be held if needed to accommodate participants' schedules.

The survey will consist of 3 parts:

- a. Online informed consents authorizing use of personal anonymous information will be obtained from study participants with risks and benefits of survey participation explained in an email and on Google Forms at the start of the survey.
- b. The surveys will consist of questions regarding personal background information of participants. The following key points will be addressed under demographics:
  - Gender

- Age
  - Race
  - Specialty
  - Level of training
  - Medical degree type
  - Previous experience in the medical field
- c. The Clance Impostor Phenomenon Scale will be administered as the final portion of the survey.

2. **Study subjects:**

- a. Inclusion: all American- trained residents and attending physicians of any specialty employed by RUHS
- b. Exclusion: non-physicians (e.g. medical students) and physicians who are not employed by RUHS
- c. Recruitment: We will ask GME coordinators at RUHS to distribute a widespread email to physicians employed by RUHS who meet inclusion criteria.

3. **Sampling Method:** All residents and physicians employed by Riverside University Health System will be offered participation.

4. **Method of assigning subjects to study groups:** Not applicable

5. **Intervention:** Not applicable

6. **Control:** Not applicable

**7. Data collection:**

The study will consist of individual survey completion followed by focus group discussion.

Surveys will consist of background/demographic questions and the Clance Impostor Phenomenon Scale to determine presence and severity of impostor phenomenon in participants.

As described by Chrisman et al in a study on the validation of the Clance Impostor Phenomenon Scale, CIPS has been demonstrated to have high internal reliability and related to, but markedly differentiated from, constructs of depression, self-esteem, and social anxiety, allowing for discrimination between the impostor phenomenon and syndromes of negative affectivity.<sup>4</sup>

The Clance Impostor Phenomenon Scale is a 20 item instrument used to assess for impostor phenomenon characteristics and if present, to what severity they experience this phenomenon. Each of the 20 statements will contain numbered responses ranging from “not at all true” (corresponding with a score of 1) to “very true” (corresponding with a score of 5). The total score will be calculated for each survey with the following score key to determine severity of impostor phenomenon:

Score  $\leq$  40: few Impostor characteristics

41-60: moderate Impostor Phenomenon experiences

61-80: frequent Impostor feelings

> 80: intense Impostor Phenomenon experiences

Per the Clance Impostor Phenomenon Scale, a higher score indicates a more frequent and serious interference of impostor phenomenon in a person’s life.<sup>4</sup>

After completion of the survey, respondents will be debriefed with an interpretation of their score. A sample debrief is as follows:

“According to this survey, you demonstrate [few/moderate/frequent/intense] Impostor characteristics. Individuals demonstrating Impostor characteristics often attribute their achievements to forces outside of their own control, rather than their own diligence, intelligence, or skill. Recent research has noted that this phenomenon is commonly experienced by medical students and other health care professionals. A higher score (per the scoring system above) indicates a more frequent and serious interference of Impostor Phenomenon in a person’s life. According to previous research, this may lead to ‘fear, stress, self doubt,’ and discomfort with your achievements, which may have a negative impact on your psychological well-being. However, this may or may not accurately represent your true experiences. It is important for the physician surveyed to reflect on his or her own experiences and evaluate if further action aimed at reducing feelings of impostorism is necessary to improve his or her well-being.”

One of our team members will serve as the scribe for the group discussion following the survey and debrief. After the focus groups are completed, we will group together responses along with survey results in an excel spreadsheet and analyze common themes presented in discussion.

Confounding variables:

- Previously diagnosed mental health disorder, either treated or untreated
- Foreign medical school graduates
- Board/ITE scores
- Legal actions/lawsuits
- Socioeconomic upbringing (physicians in family, family income)
- Locus of control

Participants will not be asked specific questions to determine whether confounding variables are present. However, it is possible for this information to be provided by the participants voluntarily during discussion. Even if not mentioned during the focus group, the variables will be considered in our study discussion as these factors may impact individuals’ experiences with impostor phenomenon and its effects on mental health.

Responses to survey questions and transcripts from the group discussion will be compiled in an Excel spreadsheet, which will be saved as an encrypted file and stored in a secure, county network, password protected drive. This will be accessible only at the hospital or through secured remote desktop access. All of the data that is collected as part of this project is owned by the hospital. The PI and co-investigators of this project will be responsible for management and sharing of the research data. Data will be evaluated for errors/completion by the PIs. There will be no personal health information collected or stored with the data.

## **8. Evaluation or Main Outcomes:**

**Primary outcome:** Understanding of the effects of impostor phenomenon among resident and attending physicians employed by RUHS

**Secondary outcome:** Understanding of what interventions physicians feel can be implemented at RUHS to support those experiencing impostor phenomenon

**9. Sample size:** Will be determined by number of voluntary responses to survey.

## **10. Data analysis:**

Responses from the survey questions will be analyzed to determine prevalence and severity of impostor phenomenon among our study population, as well as its potential correlation between specific demographics/background characteristics. We will use subjective data from participants' experience to understand what interventions will help support participants who may be adversely affected by the results of this study. This data may also be used to help resolve potential ethical concerns that arise by simply conducting mental health research.

## **11. Ethical- Human Studies considerations**

Ethics approval will not be obtained prior to beginning the study as there will be no interventions performed on participants. All study subjects will participate voluntarily and will be given informed consents prior to survey participation.

There will be no personal identifiers in the survey questions; however, there is an inadvertent risk that researchers may be able to identify participants based on their demographics due to the small sample size. This risk will be explained in the informed consent. The survey will be conducted using Google Forms, which does not record IP addresses and prevents further jeopardy of anonymity.

The focus group discussion will be held via Microsoft Teams, which is another secure platform that encrypts network communications and contains intricate features aimed at preventing security compromise. There is another inadvertent risk of personal information discussed during the focus group being discussed outside of the meeting by other participants despite plea for privacy. Participants will be warned of this risk as well as the opportunity to leave the study at any time. Further, participants will not be asked any personal questions directly during the focus group, and disclosure of any information by participants will be entirely voluntary.

There is a potential risk for the groups having higher prevalence of impostor phenomenon of feeling emotional distress from the publication of these survey results. However, public knowledge of this information may persuade group leaders to implement changes to improve the wellness of these participants. This risk will be explained in the informed consent.

## **12. Timeline**

The research project is expected to take approximately 12 months to complete from onset.

## **References**

1. Maqsood H, Shakeel HA, Hussain H, et al. The descriptive study of impostor phenomenon in medical students. International Journal of Research in Medical Sciences. 2018;6(10):3431. doi:10.18203/2320-6012.ijrms20184031
2. Henning K, Ey S, Shaw D. Perfectionism, the impostor phenomenon and psychological adjustment in medical, dental, nursing and pharmacy students. Medical Education. 1998;32(5):456-464. doi:10.1046/j.1365-2923.1998.00234.x

3. Oriel K, Plane MB, Mundt M. Family medicine residents and the impostor phenomenon. *Family Medicine*. 2004;36(4).  
<https://www.ncbi.nlm.nih.gov/pubmed/15057614>.
4. Chrisman SM, Pieper W, Clance PR, Holland C, Glickauf-Hughes C. Validation of the Clance Impostor Phenomenon Scale. *Journal of Personality Assessment*. 1995;65(3):456-467. doi:10.1207/s15327752jpa6503\_6
5. Villwock J, Koester LA, Harris TM. Impostor phenomenon and Burnout Among American Medical Student: a pilot study. 2013;7: 364-369
6. Legassie J, Zibrowski EM, Goldszmidt MA. Measuring Resident Well-Being: Impostors and Burnout Syndrome in Residency. *Journal of General Internal Medicine*. 2008;23(7):1090-1094. doi:10.1007/s11606-008-0536-x
7. Feel like a fraud? American Psychological Association  
<https://www.apa.org/gradpsych/2013/11/fraud>. Accessed March 12, 2019
8. Jaruwan Sakulku, James Alexander. The impostor Phenomenon. *International journal of Behavioral Science* 2011, vol 6No1, 75-97.
9. Jennifer Villwock, Lindsay A Koester, Tucker M Harris. Impostor syndrome and among American medical student: a pilot study. 2013;7 ; 364-369.
10. Kathy Oriel, MD. Mary Beth plane, PhD; Marlon Mundt, MS. Family Medicine resident and the Impostor Phenomenon. *FamMed* 2004;36(4):248-52
11. Ladonna KA, Ginsburg S, Watling C. "Rising to the Level of Your Incompetence." *Academic Medicine*. 2018;93(5):763-768. doi:10.1097/acm.0000000000002046
12. Legassie J, Zibrowski EM, Goldszmidt MA. Measuring Resident Well-Being: Impostors and Burnout Syndrome in Residency. *Journal of General Internal Medicine*. 2008;23(7):1090-1094. doi:10.1007/s11606-008-0536-x
13. Sakulku, J. (1). The Impostor Phenomenon. *The Journal of Behavioral Science*, 6(1), 75-97  
Hamza Maqsood, Hassan Abdullah, Hamza Hussain. The descriptive study of impostor syndrome in medical students. 2018
14. Shohreh Ghorbanshirodi, The relationship between Self-Esteem and emotional intelligence with impostor syndrome among medical student of Guilan and Heratsi universities.
15. Young V. *The Secret Thoughts of Successful Women: Why Capable People Suffer from the Impostor Syndrome and How to Thrive in Spite of It*. New York: Crown Business; 2011