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ORIGINAL RESEARCH

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Impostor phenomenon among urologists in Saudi Arabia

Meshari A. Alzahrani[1], Mohammed Shareef[2], Ibrahim Abunohaiah[3], Moataz I. Altokhais[4], Faisal Alsaleh[5], Diyaa Al Khalaf[6], Raed Almannie[3], Mohamad Habous[7], Basel O. Hakami[8], Saleh Binsaleh[3,*]

[1]Department of Urology, College of Medicine, Majmaah University, 11952 Al-Majmaah, Saudi Arabia
[2]Urology department, King Fahd Hospital, 42351 Al Madinah Al Munawwarah, Saudi Arabia
[3]Department of Surgery, Division of Urology, Faculty of Medicine, King Saud University, King Saud University Medical City, 12372 Riyadh, Saudi Arabia
[4]Department of Surgery, Division of Urology, King Saud University Medical City, 12372 Riyadh, Saudi Arabia
[5]College of Medicine, King Saud University, King Saud University medical city, 12372 Riyadh, Saudi Arabia
[6]College of Medicine, Dar Al Uloom University, 13314 Riyadh, Saudi Arabia
[7]Al-Themal medical center, 62454 Abha, Saudi Arabia
[8]Urology Department, King Faisal Medical City for Southern Region, 62527 Abha, Saudi Arabia

***Correspondence**
binsaleh@ksu.edu.sa
(Saleh Binsaleh)

Abstract

Impostor phenomenon (IP) is the persistent inability to believe that one's success is deserved or has been legitimately achieved due to one's efforts or skills. It is associated with burnout, anxiety and depression and can negatively impact the lives of the affected individuals. This study aimed to determine the prevalence of IP among urologists in Saudi Arabia. A cross-sectional study was conducted among practicing urologists and urologists-in-training in Saudi Arabia between November and December 2022. A self-administered questionnaire comprising questions on the sociodemographic characteristics and the Clance impostor phenomenon scale (CIPS) was distributed through email to all registered urologists in the Saudi Commission for Health Specialties database. A total of 155 urologists (143 men and 12 women) were enrolled in this study. The majority of the urologists (44.5%) were consultants, and the prevalence of the impostor phenomenon in this study was 27.7%. Nearly half of the urologists (49.7%) presented moderate levels of the phenomenon, 23.9% of the urologists demonstrated high levels, and 20.6% presented low levels. Only 5.8% of the urologists showed intense levels of the phenomenon. The phenomenon was significantly more prevalent among those in training (p = 0.010) and less prevalent among those with a subspecialty in endourology (p = 0.016). The prevalence of the impostor phenomenon among urologists was 27.7%. It was more commonly seen in resident urologists, and those with a subspecialty in endourology were less likely to be affected by this phenomenon.

Keywords

Impostor syndrome; Impostor phenomenon; Urologist; Saudi Arabia; Self-esteem

1. Introduction

Impostor phenomenon (IP) is the persistent inability to believe that one's success is deserved or has been legitimately achieved due to one's efforts or skills. It is associated with burnout, anxiety, depression and can negatively impact the professional and personal lives of the affected individuals [1]. The IP has been observed in high-achieving individuals who, despite their objective successes, fail to internalize their accomplishments and have persistent self-doubt and fear of being exposed as fraud or impostors [1]. Those high in the IP are characterized by attributing their success (but not their failures) to external sources such as luck and change [2].

There is a strong relationship between IP and perfectionism. Individuals with IP struggle with accurately attributing their performance to their actual competence (*i.e.*, they attribute success to external factors, such as luck or receiving help from others, and attribute setbacks as evidence of their professional inadequacy) [2]. Clance and Imes *et al.* [2] first described IP in their landmark article 1978 as "an internal experience of intellectual phoniness".

Although IP has mainly been studied among women, high levels of this phenomenon have been identified among men and various ethnicities and age groups [3, 4]. The IP has been reported to be associated with lower levels of self-esteem, and individuals fear they are less intelligent or capable than they are. Thus, they tend to drift away from applying to leadership roles, such as deanships or department heads, fearing failure [5]. Despite an increased prevalence of IP among younger individuals, it has been observed among senior faculty members. Gender, low self-esteem, and institutional culture are associated with higher rates of IP. In contrast, social support, success validation, positive affirmation, and personal and shared reflections prevent IP development [6]. The IP is an understudied topic in the medical field, especially among specified specialties. In a study among neurosurgeons with all levels of training (residents, fellows and attending surgeons), 81.6% showed moderate-to-intense signs of the phenomenon [7].

The IP has been reported among healthcare providers and was linked to burnout [3]. Even at pre- and post-graduate levels, such as medical students, ophthalmologists, neurologists,

general surgeons, internists pharmacists [8–15] and nurses [3]. Perfectionism and IP were two of the most predictive indicators of psychological distress; this relationship cannot be neglected, given the considerable mental and psychological consequences of such problems [16].

To our knowledge, this phenomenon has not been well-examined among urologists worldwide. Hence, this study aimed to assess the prevalence and severity of IP among licensed urology residents, fellows and consultants in Saudi Arabia.

2. Materials and methods

All urologists registered and licensed by the Saudi Commission for Health Specialties (SCFHS) in Saudi Arabia were invited to participate in the study between November and December 2022.

A retrospective cross-sectional questionnaire was distributed to licensed urologists by mailing them to their personal email addresses. The questionnaire, which was administered through an online platform, SurveyMonkey®, included questions on the sociodemographic characteristics (*i.e.*, gender and level of training) and the incidence of IP using the Clance IP scale (CIPS). This 5-point scale is a validated survey consisting of 20 questions to assess the characteristics and severity of IP. Urology residents, fellows and consultants registered at SCFHS in Saudi Arabia were included in this study, whereas those from other specialties, interns and medical students were excluded. Signed informed consent forms were collected from all participants before conducting the survey. The responses to the questions in the questionnaire were voluntary and anonymous.

Descriptive statistics are presented as counts and proportions (%) for all categorical variables and as means and standard deviations for continuous variables. Cronbach's alpha to measure item reliability is 0.922, indicating excellent internal consistency. Relationships between IP and the sociodemographic characteristics of the urologists were assessed using the Chi-square test. A p-value of ≤ 0.05 was considered statistically significant. The data were analyzed using the Statistical Packages for Social Sciences (SPSS, version 26; IBM Corp, Armonk, NY, USA).

3. Results

The questionnaire was filled out by 155 urologists. Table 1 presents the sociodemographic characteristics of the enrolled urologists. Nearly all respondents were men (92.3%), and 63 (40.6%) worked in the central region. Approximately 44.5% of the urologists were consultants, with 40.6% working in the Ministry of Health hospital.

Fig. 1 demonstrates the distribution of the fellowship subspecialties in the study sample. The most common fellowship subspecialty was andrology and infertility (20.6%), followed by endourology (16.1%) and pediatric (8.4%); nearly half of the responders (49.7%) did not pursue any subspecialty.

The prevalence of IP in this study was 27.7% (Table 2). The mean score on the CIPS was 53.4 ± 15.3. Furthermore, 20.6%, 49.7%, 23.9% and 5.8% of the participants presented mild, moderate, high and intense levels of the phenomenon, respectively.

TABLE 1. Sociodemographic characteristics of the enrolled urologists (n = 155).

Study variable	n (%)
Gender	
Male	143 (92.3%)
Female	12 (7.7%)
Region of working	
Central region	63 (40.6%)
Western region	43 (27.7%)
Northern region	27 (17.4%)
Eastern region	19 (12.3%)
Southern region	3 (1.9%)
Level of training	
Resident	30 (19.4%)
Registrar	44 (28.4%)
Fellow	12 (7.7%)
Consultant	69 (44.5%)
Type of hospital†	
Academic/University hospital	32 (20.6%)
Military hospital	34 (21.9%)
Ministry of health hospital	63 (40.6%)
Private hospital	42 (27.1%)

†*Variable with multiple response answers.*

TABLE 2. Prevalence of impostor phenomenon based on the Clance IP scale scores (n = 155).

Impostor variables	n (%)
Impostor phenomenon score (mean ± SD)	53.4 ± 15.3
Level of impostor phenomenon	
Impostor (score ≥62)	43 (27.7%)
Normal (score <62)	112 (72.3%)
The severity of impostor phenomenon	
Mild (score ≤40)	32 (20.6%)
Moderate (score 40–60)	77 (49.7%)
High (score 61–80)	37 (23.9%)
Intense (score >80)	9 (05.8%)

SD: standard deviation.

The relationship between the phenomenon and the sociodemographic characteristics of the urologists is shown in Table 3. The prevalence of IP was statistically significantly higher among residents (p = 0.010) and significantly lower among urologists with a subspecialty in endourology (p = 0.016). No significant differences in IP were observed based on gender, region of work and type of hospital ($p > 0.05$).

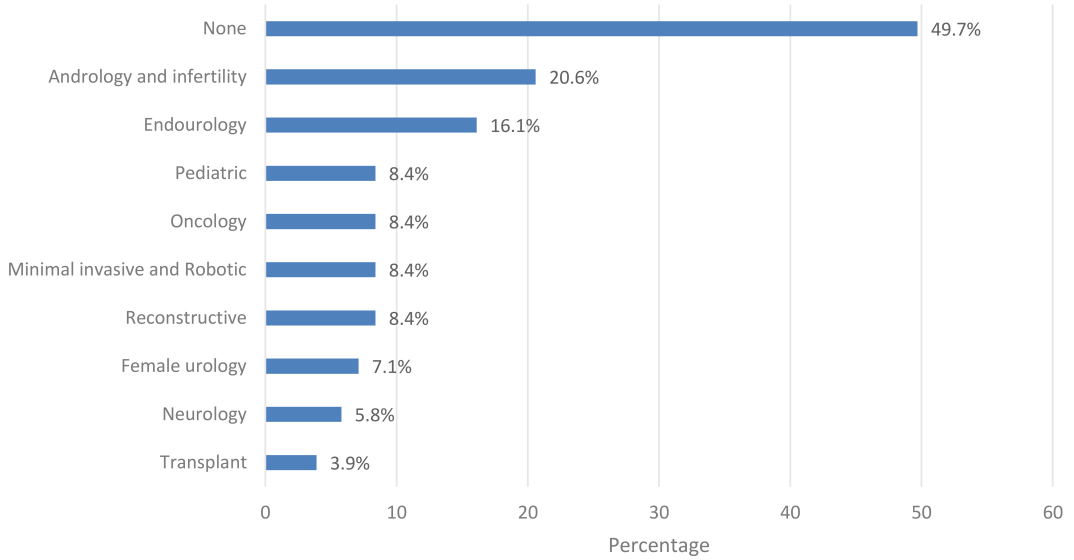

FIGURE 1. Distribution of the fellowship subspecialties in the study sample.

TABLE 3. Relationship between impostor phenomenon and the sociodemographic characteristics of the urologists (n = 155).

Factor	Impostor n (%) (n = 43)	Normal n (%) (n = 112)	*p*-value§
Gender			
Male	38 (88.4%)	105 (93.8%)	0.262
Female	5 (11.6%)	7 (6.3%)	
Region of working			
Inside central region	18 (41.9%)	45 (40.2%)	0.849
Outside central region	25 (58.1%)	67 (59.8%)	
Level of training			
Resident	14 (32.6%)	16 (14.3%)	
Registrar/Fellow	17 (39.5%)	39 (34.8%)	0.010**
Consultant	12 (27.9%)	57 (50.9%)	
Type of hospital†			
Academic/University	10 (23.3%)	22 (19.6%)	0.619
Military hospital	10 (23.3%)	24 (21.4%)	0.806
Ministry of health hospital	19 (44.2%)	44 (39.3%)	0.578
Private hospital	7 (16.3%)	35 (31.3%)	0.060
Fellowship subspecialty†			
Endourology	2 (4.7%)	23 (20.5%)	0.016**
Andrology and infertility	7 (16.3%)	25 (22.3%)	0.405
Reconstructive	2 (4.7%)	11 (9.8%)	0.298
Minimal invasive and robotic	3 (7.0%)	10 (8.9%)	0.695
Female urology	2 (4.7%)	9 (8.0%)	0.462
Neurourology	2 (4.7%)	7 (6.3%)	0.703
Oncology	3 (7.0%)	10 (8.9%)	0.695
Transplant	2 (4.7%)	4 (3.6%)	0.755
Pediatric	5 (11.6%)	8 (7.1%)	0.367

†*Variable with multiple response answers;* §*p-value has been calculated using the Chi-square test; **Significant at p < 0.05 level.*

4. Discussion

The prevalence of IP among urologists in Saudi Arabia was determined in this study. To the best of our knowledge, this is the first study to evaluate the psychological occurrence of this phenomenon among urologists in Saudi Arabia. It is important to assess the prevalence of this condition, given the challenging environment associated with the job.

Among the 155 urologists who participated in the study, the prevalence of IP based on the CIPS was 27.7%, with a mean IP score of 53.4 $\pm$ 15.3. These findings were in accordance with the results of previous systematic and scoping reviews by Bravata *et al.* [3] and Gottlieb *et al.* [6]. According to Bravata *et al.* [3], the prevalence of IP among students and clinicians ranged from 9% to 82%, depending on the cutoff points or questionnaire used, whereas Gottlieb *et al.* [6] reported that the prevalence of IP among physicians and physicians in training ranged between 22% and 60%. Similar findings were reported in a recent study comprising medical students in Riyadh, Saudi Arabia [17]. These results indicate that appropriate measures must be taken to address the occurrence of IP among healthcare providers. Modifiable features of the clinical learning environment enhance IP and can thus be addressed to reduce IP and promote learning among physicians-in-training.

Approximately half of the current study's urologists (49.7%) were categorized as having moderate levels of IP. In comparison, the remaining 23.9%, 5.8% and 20.6% of the urologists had high, intense and mild levels of the phenomenon, respectively. These results are similar to those reported in a study from India [18], where 44.7% of the participants demonstrated moderate levels, 47.3% showed high levels, and only 5.3% showed intense levels of IP. However, in Pakistan [19], a high prevalence (54.5%) of severe IP was noted among medical students, followed by moderate (38.1%), very severe (4.76%), and mild (2.6%) levels in Saudi Arabia [20]. Mascarenhas *et al.* [18] showed that medical interns with more substantial IP characteristics had lower self-esteem and vice versa, indicating that high self-esteem levels and low IP characteristics are propitious for efficient medical practice. A recent study in Saudi Arabia reported that IP is prevalent among surgical and medical residents [20]. These findings indicate the need for additional studies on IP in different workplaces. The working environment may explain the age difference and healthcare provider specialty in the severity of IP.

A recent review reported the majority of studies found no link between the IP and academic year of training among medical students, residents and physicians, but the personal characteristics were linked to detrimental consequences on mental health [16]. The findings of the present study revealed that resident urologists were more likely to demonstrate the characteristics of IP, whereas urologists with a subspecialty in endourology were less likely to exhibit impostorism. These results were consistent with those of a study by Leach *et al.* [21], wherein surgical residents scored significantly higher on the CIPS than general surgeons. However, in a study by Almatrafi *et al.* [20], surgical residents and residents in their first years of residency showed higher levels of IP, although not statistically significant ($p > 0.05$). In addition, other factors did not significantly affect the IP scores of the residents. In one study, one-quarter of young undergraduate medical students experienced IP; moreover, IP was significantly related to burnout indices in this age group [22]. Thus, it is in our best interests to reassess the aspects of medical education (such as shame-based learning and overall teaching style) and improve the medical learning environment.

Several studies have reported that there were no significant differences between men and women in terms of the characteristics of IP [21, 23–25]. Similarly, no significant relationships between the level of IP and gender were observed in the current study; however, this finding is subject to further investigations due to the unequal distribution of cases. On the contrary, various other studies have reported significant differences in the IP level between men and women [6, 20, 22]. Women respondents exhibited significantly higher impostor feelings than men respondents in these studies. In a recent systemic review on IP, women presented with significantly higher rates of impostor feelings than men. In contrast, other studies found no differences in IP rates between men and women [3]. This discrepancy could be related to the fact that most of the early IP-related studies focused on women. Although women do experience IP, half of the studies examining the gender effect observed no differences in the incidence rates of IP between men and women.

Many medical professionals experience IPS when talented and accomplished colleagues surround them [26]. Among employed populations, a systematic review reported that nineteen of the included articles described IP among employed people. Five of these studies were IP reported among nurses and physicians [3].

As urologists and health professionals, this was undoubtedly the case for us as we began our medical careers, constantly comparing ourselves to others and feeling we fell short of their expectations. Depression and anxiety are usually co-occurring with impostor sentiments due to IP. People with IP should be thoroughly examined for depression and anxiety and treated with evidence-based therapies in the absence of specific treatment recommendations for IP. People with IP frequently believe they are the "only one" who feels this way, making them feel even more alone [3]. All health professionals and organizations should know about impostor feelings, regardless of gender. A recommendation for group therapy where colleagues or employees talk about their self-doubt and failure might be especially beneficial. Clinicians and other accomplished professionals might be hesitant to join such groups unless they are specifically created to mainstream and destigmatize impostor feelings and offer a secure setting for the candid sharing of experiences [3].

Comprehensive modifications in medical education must consider the relationship between medical culture, professional identity construction, IP and perfectionism. Longitudinal research will aid in determining the relevance of these findings for professional identity formation and medical education.

One of the major limitations of this study is the sample size. A larger sample size could generate better results and provide a more precise interpretation of IP among urologists. In addition, the gender difference in this study might result in insufficient statistical power to generate true significance. Additionally, the cut-off value used for the CIPS (*i.e.*, low *vs.* high IP) has

never been validated. Finally, the cross-sectional nature of the study makes it prone to disadvantages, such as the cause-and-effect relationship and bias.

5. Conclusions

The prevalence of IP among urologists in Saudi Arabia was 27.7%. Furthermore, the incidence of IP was higher in resident urologists than other urologists, whereas those with a subspecialty in endourology were less likely to develop this phenomenon. IP can lead to psychological disorders if not adequately addressed. Thus, health authorities should ensure that the mental health conditions of the physicians are intact to be able to deliver the best quality of care to their patients. Nonetheless, additional studies providing valuable insights into this field are warranted.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

AUTHOR CONTRIBUTIONS

SB—conceptualization, funding acquisition, project administration and supervision; MS and BOH—data curation and formal analysis; MAA, MS, IA, MIA, FA, DAK and BOH—investigation; SB, RA—methodology; MAA—resources and software; SB, RM and MH—validation and visualization; MAA, MS, IA, MIA, FA, DAK and BOH—writing-original draft; SB, RA, MH and MAA—writing-review and editing.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was approved by the King Saud University Institutional Review Board (approved number: E-22-7090). All responders provided written informed consent.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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