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Impostor phenomenon in healthcare simulation educators

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ABSTRACT

Background
Impostor phenomenon is the overwhelming feeling of intellectual phoniness and has been linked to decreased job satisfaction and increased levels of stress, depression and burnout. As education and healthcare institutions rely on simulation to train the current and future healthcare workforce, there is a need to improve our understanding of impostor phenomenon in the healthcare simulation context. This study investigated the prevalence of impostor phenomenon in simulation educators and examined the effect of work-related characteristics on impostor phenomenon in the simulation educator community.

Methods
In total, 148 simulation educators from nine countries participated in an online survey. Along with questions related to demographic characteristics, impostor phenomenon was measured using two scales, the Clance Impostor Phenomenon Scale (CIPS) and the Leary Impostorism Scale (LIS). Independent variables included gender, time spent on simulation activities per week, years working in simulation and team size.

Results
Impostorism was identified in 46.6% of simulation educators. A multivariate analysis of variance revealed no statistically significant interactions or main effects of gender, time spent on simulation activities per week, years working in simulation and team size on impostor phenomenon. Impostor phenomenon does not discriminate based on gender; it does not disappear with experience; and it is present regardless of the size of team.

Conclusions
Impostor phenomenon is prevalent across the healthcare simulation educator community. Given the negative impact impostor phenomenon has on well-being and career development, educators, employers and professional societies need to acknowledge the prevalence of impostor phenomenon and start a conversation to build awareness about impostor phenomenon in the healthcare simulation community. Bringing the conversation into the open is the first step to acknowledging feelings of impostorism and developing strategies to break the cycle.

What this study adds

- Impostor phenomenon is prevalent in the healthcare simulation educator community.
- Impostor phenomenon does not discriminate based on gender; it does not disappear with experience; and it is present regardless of the size of the team.
- Employers and professional societies need to develop strategies to reduce impostor feelings, which will increase the well-being, job satisfaction and career development of simulation educators.

Background

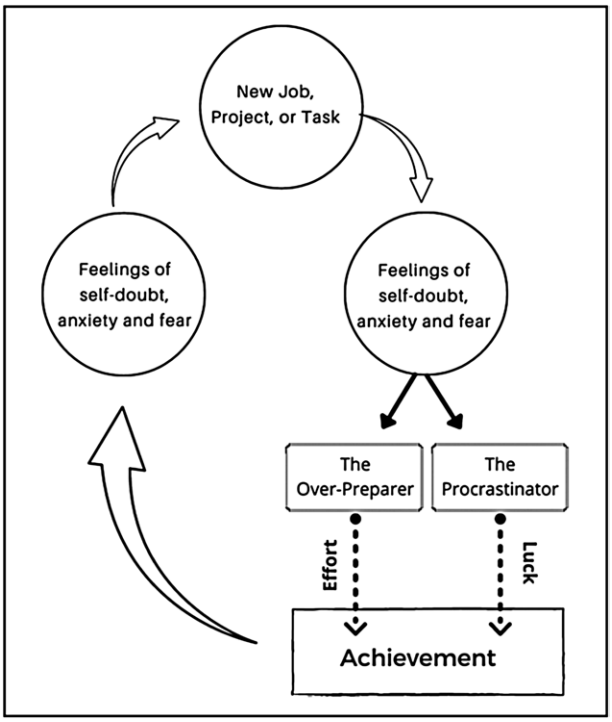
Described as an internal feeling of intellectual phoniness, impostor phenomenon is where an individual experiences the overwhelming feeling that any minute now they will be found out, and that someone is going to discover that they are a fraud [1]. Those who experience impostor phenomenon believe that any success they may have achieved is simply a mistake or that it was achieved through pure luck, and despite evidence to the contrary, they experience overwhelming fear that their world is about to come crashing down [1,2].

Clance et al [3] describe the impostor experience as a self-perpetuating cycle that starts with a new job, project or task (Figure 1). Clouded by feelings of self-doubt, anxiety and fear, the individual will usually proceed by following one of two paths: over preparation or procrastination. While both paths will ultimately achieve success, the joy is short-lived with the 'over-preparer' believing that to achieve the success they needed to put in much more *effort* than their peers, and the 'procrastinator' believing that *luck* was once again on their side and they have fooled everyone. Any initial thoughts of achievement are quickly suppressed as feelings of self-doubt, anxiety and fear of being found out resurface and the cycle begins again.

As the cycle repeats and feelings of self-doubt, anxiety and fear intensify, it becomes harder to break the cycle which can result in a 'persistent state of physical and emotional depletion' [5, p. 179]. The consequences of impostor phenomenon not only have a negative impact on the individual but can also have ramifications for the employer. When experiencing intense feelings of impostorism, employee well-being is affected, with impostor phenomenon linked to decreased job satisfaction and increased levels of stress, depression and burnout [6,7]. Studies investigating the impact of impostor phenomenon in the workplace have revealed that impostors do not feel comfortable in their roles resulting in decreased organizational engagement and that many do not feel deserving of their position, feeling that they secured it by pure luck, which adversely impacts their career progression [8–10].

Once those experiencing impostorism have been identified, studies suggest that social support can be an effective strategy to break the cycle and alleviate the negative impact of impostorism [5,9,11]. Social support is defined as 'the active, informational, and/or emotional assistance that is provided to an individual by others' [5, p. 196]. Participating in informal peer support groups where experiences are discussed may assist in normalizing the individual's experiences, with formal mentoring programmes serving as an opportunity to reinforce that successes were earned and not a result of luck [5].

Figure 1 : The impostor phenomenon cycle (adapted from Williams [4]).



The pathway to becoming a simulation educator is as unique as the individual educators themselves. For some, it is their passion to teach that attracts them to the simulation educator role, but for others, it is their clinical expertise that frequently leads to the allocation of teaching roles [12,13]. Depending on the work environment, an educator may work on their own or as part of a larger team. As a member of a team, an educator may feel part of a community that shares knowledge and aids in the formation of professional identity through social interactions. The theory of communities of practice as described by Wenger [14] draws on four components of social learning theory: 1) meaning, 2) practice, 3) community and 4) identity, all of which are interconnected. For those who work on their own, membership in professional societies may provide the community of practice they need to develop into the role of simulation educator [15]. The need to compare self to others, referred to as social comparison orientation, forms part of the self-evaluation process [16].

Transitioning to a new role involves not only acquiring new knowledge and skills but also new behaviours and attitudes, often resulting in the formation of a new professional identity [17]. It is this transition phase that Van Gennep's theory on the rites of the passage referred to

as 'liminality'; individuals reconstruct their identity and in the process of 'becoming' a simulation educator, they can experience professional identity ambiguity, resulting in anxiety, a lack of self-confidence and feeling like a fraud – characteristics of impostor phenomenon [18].

Originally reported in high achieving women in 1978 in a study by Clance and Imes [19], impostor phenomenon has been studied in various populations, including college and university students [20,21], managers [22], librarians [23] and academics [24]. Within healthcare, there have only been a few studies examining impostor phenomenon in the current workforce [11,25,26], with interest predominantly focused on those entering the workforce for the first time as they are developing their professional identity [27–30]. A recent scoping review of professional identity and the influence of impostor phenomenon in healthcare education noted the paucity of literature on the influence of impostor phenomenon on educators, highlighting the need for further research into the prevalence of impostorism and strategies to support those impacted by it [18].

As education and healthcare institutions rely on simulation to train the current and future healthcare workforce, there is a need to improve our understanding of impostor phenomenon in the healthcare simulation context. The aim of this study is to investigate the prevalence of impostor phenomenon in simulation educators and examine the effect of work-related characteristics on impostor phenomenon in the simulation education community.

Methods

Participants and procedure

The study was approved by the Human Ethics Research Office of The University of Western Australia (RA/4/20/5061). An invitation to participate in the study along with a link to an online survey was posted in online forums and distributed via email to simulation communities. The participants were introduced to the research objectives and informed about the voluntary nature of their participation and the confidential use of data. After confirming their informed consent, respondents proceeded to complete the survey. Completing the survey took approximately 20 minutes. Participants did not receive any incentives or compensation for participating in the study.

The study participants were 148 simulation educators (77% female), from nine countries, with 86 (58.1%) aged between 40 and 55 years. The largest proportion of participants (n = 81; 54.7%) were qualified as nurses and/or midwives, with 59 (39.9%) reporting their highest tertiary qualification as a doctoral degree. Forty-nine (33.1%) had worked in healthcare simulation for between 11 and 15 years, with 48 (32.4%) spending more than 33 hours a week in simulation activities. Almost all respondents (92.6%) were members of a professional society, 84 (56.8%) reported completing between 21 and 100 hours of instructor training and 79 (53.4%) certified as simulation educators. In relation to professional identity, 92 (62.2%) primarily identified as a simulation educator. Table 1 details the demographic characteristics of the sample.

Table 1: Demographic characteristics and percentage categorical impostors of the full sample (N = 148) and within demographic categories of the sample

	Sample size	Percentage 'impostors'[a]
Full sample	148 (100%)	46.6%
Gender		
Male	34 (23%)	44.1%
Female	114 (77%)	47.4%
Country currently working		
Australia	33 (22.3%)	54.5%
Canada	7 (4.7%)	71.4%
Denmark	3 (2.0%)	66.7%
Portugal	1 (0.7%)	0.0%
Singapore	2 (1.4%)	0.0%
Thailand	1 (0.7%)	100%
Turkey	1 (0.7%)	0.0%
United Kingdom	10 (6.8%)	50%
United States of America	90 (60.8%)	42.2%
Qualifying discipline		
Medicine	26 (17.6%)	38.5%
Nursing/midwifery	81 (54.7%)	46.9%
Paramedicine/pre-hospital	6 (4.1%)	50%
Pharmacy	1 (0.7%)	100%
Physiotherapy	4 (2.7%)	50%
Podiatry	1 (0.7%)	100%
Psychology	3 (2.0%)	66.7%
Others including non-healthcare qualifications	26 (17.6%)	46.2%
Highest tertiary qualifications		
No Tertiary Qualification	4 (2.7%)	100%
Bachelor Degree	17 (11.5%)	23.5%
Graduate Certificate/ Diploma	13 (8.8%)	76.9%
Master's Degree	55 (37.2%)	52.7%
Doctoral Degree	59 (39.9%)	37.3%
Years working in healthcare simulation		
1 to 5 years	33 (22.35%)	66.7%
6 to 10 years	43 (29.1%)	44.2%
11 to 15 years	49 (33.1%)	36.7%
16 years and over	23 (15.5%)	43.5%
Size of healthcare simulation team		
1 person	17 (11.5%)	52.9%
2 to 5 people	56 (37.8%)	48.2%
6 to 10 people	40 (27%)	37.5%
More than 10 people	35 (23.6%)	51.4%
Hour spent per week in healthcare simulation activities		
1 to 8 hours	25 (16.9%)	44%
9 to 16 hours	31 (20.9%)	45.2%

Table 1: Continued

	Sample size	Percentage 'impostors'[a]
17 to 24 hours	22 (14.9%)	50%
25 to 32 hours	22 (14.9%)	45.5%
33 to 40 hours	48 (32.4%)	47.9%
Simulation instructor training		
0 to 7 hours	21 (14.2%)	42.9%
8 to 20 hours	17 (11.5%)	70.6%
21 to 50 hours	42 (28.4%)	45.2%
51 to 100 hours	42 (28.4%)	50%
Greater than 100hrs	26 (17.6%)	30.8%
Healthcare Simulation Educator Certification		
Yes	79 (53.4%)	35.4%
No	69 (46.6%)	59.4%
Membership in a professional society		
Yes	137 (92.6%)	46%
No	11 (7.4%)	54.5%
Primary professional identity		
Healthcare Simulation Educator	92 (62.2%)	41.3%
Other professional identity	56 (37.8%)	55.4%

[a]A cut-off score of 61 out of 100 was used to categorize simulation educators as 'impostors' based on the scoring schema for the CIPS by Clance [2] where a score of 61 and above suggests frequent to intense impostor phenomenon experiences in the 20-item version of the CIPS.

Measures

Impostor phenomenon was measured using two scales: the Clance Impostor Phenomenon Scale (CIPS) and the Leary Impostorism Scale (LIS). The LIS is a 7-item unidimensional instrument measuring a person's sense of being an impostor or fraud. The scale required responses to statements such as *I'm afraid people important to me may find out that I'm not as capable as they think I am* on a 5-point Likert scale: 1 = not at all characteristic of me, to 5 = extremely characteristic of me. Total scores for the LIS range from 7 to 35, with the authors reporting high inter-item reliability (α = .87) [31]. The 20-item CIPS is reported to be the most commonly used scale by those researching impostor phenomenon, with Cronbach's α ranging from .85 to .96. [2,32]. Statements, such as *Sometimes I'm afraid others will discover how much knowledge or ability I really lack*, also require a response on a 5-point Likert scale: 1 = not at all true, to 5 = very true. Total scores for the CIPS range from 20 to 100, with a score of 61 or higher being indicative of impostorism [2,28].

We conducted an exploratory factor analysis that revealed that for both instruments a one-factor solution best fits the data, suggesting that all items in both measures fit onto a single theoretical construct [33]. Both instruments demonstrated high internal reliability, with the Cronbach's α for the CIPS being α = .96 and the LIS α = .95. A significant positive correlation was established between the total scores of the CIPS and LIS, r = 0.828, N = 148, p = < .001. Independent variables included gender, time spent on simulation activities per week, years working in simulation and team size.

Results

Impostorism was identified in 46.6% of simulation educators. A multivariate analysis of variance (MANOVA) was conducted to examine the effects of demographic and work-related characteristics on impostor phenomenon. The independent variables used for the MANOVA were gender (female, male), simulation experience (1 to 5 years, 6 to 10 years, 11 to 15 years and 16 years and above), time spent on simulation activities during the working week (1 to 8 hours, 9 to 16 hours, 17 to 24 hours, 25 to 32 hours and 33 to 40 hours) and team size (1 person, 2 to 5 people, 6 to 10 people and more than 10 people). Before conducting the MANOVA, the data were examined using SPSS statistics to ensure all of its underlying assumptions were met. The Wilks' criterion was used to evaluate the multivariate results, and univariate F tests were examined when there were significant multivariate main effects. Multivariate and Univariate F values were determined to be significant at Bonferroni-adjusted α levels of p < .01 for impostor phenomenon. There were no multivariate interaction effects, or main effects for Gender, F = 1.617, p = .207, partial η^2 = .048; Years working in simulation, F =.1.141, p =.342, partial η^2 = .051; Weekly activity, F = .350, p = .944, partial η^2 = .021; or Team size, F = .763, p = .601, partial η^2 = .035. The results of the univariate F tests presented in Table 2 revealed no significant differences for any of the dependent variables, indicating the absence of any meaningful demographic or work-related characteristics on impostor phenomenon.

Discussion

The aim of this study was to investigate the prevalence of impostor phenomenon in the simulation educator population. The results of this study have shown that impostor phenomenon is prevalent in the simulation educator community, with 46.6% of respondents reporting feelings of impostorism. This is a higher rate than previously reported in studies within healthcare populations [30,34]. This is an important finding given the negative impact of impostor phenomenon on well-being, job satisfaction and career progression identified in other industries. Only by being aware of the existence of impostor phenomenon can managers and those involved in faculty development engage in interventions aimed at reducing feelings of impostorism and its associated impacts.

In relation to the individual and work-related characteristics that might assist in identifying those more likely to experience impostor phenomenon, this present study suggests that simulation educators experience impostor phenomenon regardless of their gender, the amount of time spent on simulation activities per week, how many years they have spent working in simulation or the number of people with whom they work. Managers and faculty development staff need to ensure that any strategies, such as social support programmes, are disseminated across the workforce as a whole and not targeted to specific subsets.

Table 2 : Multivariate analysis of variance

Independent variable	Dependent variable	Mean square	F	p	Partial η^2	Power estimate
Gender	LIS	105.177	1.872	.176	.028	.271
	CIPS	1180.269	3.213	.078	.047	.423
Years working in simulation	LIS	68.109	1.212	.312	.053	.310
	CIPS	727.251	1.980	.126	.084	.487
Time spent on simulation activities per week	LIS	36.086	.642	.634	.038	.199
	CIPS	195.454	.532	.713	.032	.170
Team size	LIS	21.778	.388	.762	.018	.123
	CIPS	349.324	.951	.421	.042	.249

Impostorism scores for males and females revealed no significant differences, indicating that impostor phenomenon is experienced by men and women alike. The absence of a significant gender difference has also been reported in studies of college and university students [35–37]. This is in contrast to other studies that have reported impostor phenomenon to be significantly higher in females than in males [26,30,34]. As the link between gender and impostor phenomenon appears contradictory, Fassl et al [38] highlight the need to move away from simply comparing the gender categories of men and women, and instead consider gender typing, that is the degree to which 'an individual identifies with stereotypically masculine and feminine characteristics' [38, p. 2]. By better understanding the effect of gender typing on the impostor phenomenon, strategies to break the impostor cycle may be more effective.

Of particular interest to those working in faculty development is that a lack of association between simulation experience and impostor feelings was found, suggesting that rates of impostorism do not decrease over time. Similar results were reported by Legassie et al [26] and Oriel et al [34]. This is consistent with the notion that impostor phenomenon is cyclical in nature, and that with every new task or challenge, the feelings of self-doubt, anxiety and fear grow, resulting in intense feelings of impostorism. It is, therefore, essential that those working in faculty development focus on breaking the cycle, ensuring a sustainable simulation educator workforce.

As simulation educators look for evidence of their success, they will participate in the process of social comparison, comparing themselves with their team members. People experiencing impostor feelings are more likely to compare themselves to others, accentuating the strengths of others while magnifying their own weaknesses [38]. The results show that the size of the team in which the simulation educator works does not have any significant effect on impostorism. This suggests that even working alone, without the ability to compare and benchmark their own performance against team members, educators may compare their performance to the wider community of practice. Professional societies may, therefore, have an important role to play in addressing impostor phenomenon amongst their members. Given the presence of mentoring programmes in professional societies, preparation for mentoring may include a discussion of impostorism. Research is needed to identify strategies that may specifically support simulation educators.

This study is the first to examine impostor phenomenon in healthcare simulation educators. It has demonstrated that impostor tendencies are experienced throughout an educator's career. What the data do not reveal is the impact of impostor phenomenon on the individual. Exploring the experiences of simulation educators with impostor phenomenon will help inform which strategies will best address impostor phenomenon in the healthcare simulation education community.

This study has several limitations. The limited classification of gender (male/female) does not capture what may be important variations. Further studies examining gender typing may better inform our understanding of the phenomenon. The cycle of impostor phenomenon often starts with a new challenge, when feelings of anxiety, self-doubt and fear are heightened. Data were collected between April and June 2021, during the COVID-19 pandemic. As countries went into various forms of lockdown and working from home became the default, simulation educators faced challenges as they redesigned their work patterns. This timing may have impacted the self-reporting of impostor phenomenon by the respondents. Further research post pandemic is needed.

Conclusion

Healthcare simulation educators are essential for the effective delivery of simulation-based education. This study has shown that impostor phenomenon is prevalent amongst this population. Given the negative impact impostor phenomenon has on well-being and career development, educators, employers and professional societies need to acknowledge the prevalence of impostor phenomenon and start a conversation to build awareness about impostor phenomenon in the healthcare simulation community. Bringing the conversation into the open is the first step to acknowledging feelings of impostorism and developing strategies to break the cycle. While this study has provided insight into the prevalence of impostor phenomenon in healthcare simulation educators, further research on the lived experience of impostor phenomenon and the effect of strategies such as social support to alleviate the negative impact of impostorism is needed. Only then will those working in faculty development be able to design education

programs and interventions targeted to simulation educators, which will break the impostor phenomenon cycle.

Declarations

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Authors' contributions

KJF, SH, SEC and DN made a substantial contribution to the rationale and design of the study. KJF and SH analyzed the data, interpreted the results and drafted the manuscript. All authors commented on each draft of the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

Ethical approval for this study was provided by the Human Ethics Research Office of The University of Western Australia (RA/4/20/5061),

Competing interests

The authors declare that they have no competing interests

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