DOI 10.26773/smj.230206

SportMont

ORIGINAL SCIENTIFIC PAPER

Impostor Syndrome in Physiotherapy Students: Effects of Gender, Year of Study and Clinical Work Experience

Manca Opara[1], Katarina Kolenc Klen[1], Žiga Kozinc[1,2]

[1]University of Primorska, Faculty of Health Sciences, Izola, Slovenia, [2]University of Primorska, Andrej Marušič Institute, Koper, Slovenia

Abstract

Impostor syndrome (IS) manifests as fear of being exposed as incompetent, despite exceptional professional achievements. The purpose of this study was to determine the prevalence of IS among physiotherapy students and to investigate whether there are significant differences according to demographic variables. Data were collected using the Clance Impostor Phenomenon Scale (CIPS), and participants were categorized into one of four groups based on the expression of IS characteristics. We found that IS occurs in the majority of physiotherapy students. Females achieve higher overall CIPS scores compared with males, but the proportion of males and females in each category of IS characteristics is similar. The expression of IS decreases with increasing age, length of clinical work experience, and year of study. Physiotherapy students with clinical work experience have fewer IS characteristics than those without clinical work experience. Study programs and clinical settings in which physiotherapy students receive practical training should pay more attention to raising awareness of IS in order to protect individuals who are particularly vulnerable to the negative consequences of IS.

Keywords: *imposter syndrome, impostor phenomenon, physical therapists, students, well-being*

Introduction

Imposter syndrome (IS) manifests as a constant fear of failure and fear of being exposed as incompetent, despite exceptional professional achievements (Chapman, 2015; Freeman & Peisah, 2022). People with IS cannot internalize their accomplishments and abilities. They perceive themselves as less intelligent and less capable than others perceive them (Villwock et al., 2016). They are afraid that others will discover that they are actually intellectual frauds whose success is due to random events, such as luck or perfect timing (Mainali, 2020). They usually attribute their success to external factors (e.g., luck) and their failures to their professional inadequacy (Bravata et al., 2020). IS is associated with perfectionism and setting unattainable goals. The sense of achievement and relief after a successfully completed task is short-lived for these individuals, as a new challenge repeats the cycle of worry (Thomas & Bigatti, 2020). IS is often reflected in workaholic behaviors that can lead to exhaustion and increase the risk of burnout (Parkman, 2016).

A person with IS typically responds to a particular task that trigger feelings of anxiety and self-doubt, in two ways: by extreme over-preparation, or initial procrastination followed by frenzied preparation. When people with IS over-prepare, they believe that their success is due to hard work rather than their actual abilities. In the case of initial procrastination, they usually attribute their success to luck (Sakulku & Alexander, 2001). Feenstra et al. (2020) concluded that IS develops in response to various social factors (society, organizations, relationships) that covey that the individual's ideas, knowledge, and insights are not accepted, worthwhile or valued. Feelings of not belonging and stereotypes often held in society about women in leadership positions and members of ethnic minorities may also contribute to impostor feelings (Feenstra et al., 2020).

Correspondence:

Dr. Žiga Kozinc
Universiry of Primorska, Faculty of Health Sciences, Polje 42, SI-6310 Izola, Slovenia
E-mail: ziga.kozinc@fvz.upr.si

IS is observed primarily in women from diverse professional fields, but can also occur in men (Freeman & Peisah, 2022). It tends to be present in highly successful individuals and high-achieving students (Chapman, 2015; Gottlieb et al., 2020). However, impostor feelings can appear in anyone who fails to internalize their achievements and are not limited to successful individuals (Sakulku & Alexander, 2001). It is believed that approximately 70% of the general population is affected by this syndrome at some point in their lives (Rivera et al., 2021). It is possible that there is a healthy level of "impostorism" that is associated with increased drive and career success, but above a certain threshold, IS can lead to negative outcomes regarding mental health, such as burnout, depression, anxiety and substance abuse (Gottlieb et al., 2020; Freeman & Peisah, 2022). Individuals with IS are more likely to report low self-esteem, dissatisfaction and emotional exhaustion (Gottlieb et al., 2020).

A culture of perfectionism often prevails in the health professions, in part because of fear of making mistakes that can lead to severe clinical consequences. Students are particularly stressed psychologically, as they face the clinical environment and perform procedures on real patients for the first time. The constant supervision and questioning by mentors, often right in front of the patient or medical team, also contributes to stress in this population (Ng & Tay, 2021). After reviewing the scientific literature, we found a dearth of studies examining IS among physical therapists. We found only one study that examined the prevalence of IS among graduate physical therapists (Kansara et al., 2021). Therefore, our aim was to determine the prevalence of IS among physiotherapy students in Slovenia and to investigate whether there are significant differences according to demographic variables. We hypothesize that the prevalence of IS will be higher among female physiotherapy students, younger students, lower year students, and students with no clinical work experience or shorter clinical work experience. The results of our study will help to raise awareness of the prevalence of IS among physiotherapy students, which may help to identify and address IS in these individuals within undergraduate and master's programs or in clinical settings where students are interning.

Methods

Participants

The sample consisted of 106 physiotherapy students who answered the questions in an online survey (see below). Among them, 17 were men (16%) and 89 were women (84%). The mean age of the men was 25±4 years. The average age of women was 24±4 years. Seventy-five (70.8%) participants had previous clinical work experience, apart from practical training in their college studies. Most participants had less than 6 months of clinical work experience (28.3% of all participants). All physiotherapy degree programs in Slovenia follow the Bologna education system, which provides 3 full years for the bachelor's degree and another 2 years for the master's degree. In between, students often take an additional year to write the bachelor's thesis. In this study, most participants attended the 3rd year of the bachelor's degree (23.6%) or the additional year after the bachelor's degree (23.6%), followed by those who attended the 1st year of the master's degree (21.7%). A smaller proportion of participants also attended the following programs: first year of bachelor's program (1.9%), 2nd year of bachelor's program (10.4%), 2nd year of master's program (13.2%) and additional year after master's program (5.7%). The participants were requested to acknowledge their consent for the data to be used for the purposes of this study. Participants acknowledged their voluntary participation at the beginning of the survey. The study was approved by the National Medical Ethics Committee of Slovenia (approval number 0120-690/2017/8) and was conducted in accordance with the Declaration of Helsinki.

Study design

This was a cross-sectional survey-based study. In November 2022 the online survey was sent via social networks and e-mail to physiotherapy students from all faculties in Slovenia. Participants were informed about the purpose of the study and that the participation in the study was voluntary and anonymous. We used the CIPS questionnaire, which has been previously translated into Slovenian and used to assess the prevalence of IS among kinesiologists and sport (Petrič, 2022).

Questionnaire

The first part of the questions was related to demographic data (gender, age, year of study) and previous clinical work experience in the field of physiotherapy, in addition to practical training as a part of collage program. No personal data was collected and the survey was completely anonymous. The second part of the questions consisted of the imposter syndrome scale (Clance Impostor Phenomenon Scale – CIPS; Clance, 1985), which is used to determine the degree of IS characteristics in individuals. The scale consists of 20 items that refer to the impostor feelings. Examples of items include »I rarely do a project or task as well as I'd like to do it.« and »At times, I feel my success has been due to some kind of luck.«. The answers of the CIPS scale are on a five-point scale (from 1 = not at all true, to 5 = very true), and the result is the total sum of the answers (maximum possible score = 100 points). Depending on the score, participants are classified into one of four groups of IS characteristics: (a) few IS characteristics (less than 40 scores), (b) moderate IS experiences (scores between 41 and 60), (c) frequent impostor feelings (scores between 61 and 80), (d) intense IS experiences (scores above 81). Total sum of answers (CIPS total score) and categorized scores (CIPS-IS category) were separately compared with demographic variables. Previous studies have reported a high level of internal consistency of the CIPS, Cronbach's α=0.85-0.96 (Mak et al., 2019). The results of the pilot study with 90 participants also showed very high internal consistency (α=0,92) of the CIPS for a Slovenian sample as well (Šavrič, 2018).

Statistical analysis

Data were analyzed statistically using IBM SPSS software (version 27.0). Descriptive statistics were presented with frequencies and frequency proportions, and numeric variables as means and standard deviations. Where necessary, the normality of the distribution was checked with the Shapiro-Wilk test. The correlation of the CIPS total score and the CIPS-IS category with age, year of study and length of clinical work experience was checked with the Spearman correlation coefficient which was interpreted as very low ($0<r\leq0.19$), low ($0.2\leq r\leq 0.39$), medium ($0.4\leq r\leq0.59$), high ($0.6\leq r\leq0.79$) or very high ($0.8\leq r\leq1.0$). Gender comparison and comparison between students with or without clinical work experience were performed using the Mann-Whitney test because of the non-normal distribution of the CIPS total score. We calculated the effect size from the Mann-Whitney U statistic and converted it

to the Cohen's d measure, which was interpreted as small (0.2-0.4), medium (0.5-0.7), large (>0.8), or no effect (<0.2) (Cohen, 1988). To determine the relationship between the independent variables (gender, presence of clinical work experience, duration of clinical work experience) and the CIPS-IS category, we used the Chi2 test or Fisher's exact test when the expected frequencies previously examined were less than 5. For all analyses, the threshold for statistical significance was set at $\alpha<0.05$.

Results

Most students had moderate IS experiences (45.3%), followed by students with frequent impostor feelings (34.9%), students with few IS characteristics (17.0%) and students with intense IS experiences (2.8%).

Gender

Table 1 shows the distribution of participants by gender and CIPS-IS category. Most women (46.1%) and men (41.2%) had moderate IS experiences. A small number of women (3.4%), but no men (0.0%) were categorized as having intense IS experiences. Only 4 men (23.5%), but 33 women (37.1%) had frequent impostor feelings, whereas the proportion of men in the "few IS characteristics" category was higher (35.3% of men and 13.5% of women). Because 3 cells had an expected count of less than 5, we used Fisher's exact test to determine whether the across CIPS categories differed between men and women. Although the proportions indicated that women were more often classified into categories associated with a higher degree of IS, the differences in proportions were not statistically significant (p=0.209). On the other hand, the CIPS total score was statistically significantly different between men (48.8±13.3 points; range: 31-76) and women (56.4±13.4 points; range: 31-85) (U=512.0; p=0.035), although the effect size was small (d=0.42).

Table 1. The distribution of participants according to gender and CIPS-IS category.

			Men	Women	Total
CIPS categories	Few IS characteristics	n	6	12	18
		%	35.3%	13.5%	17.0%
	Moderate IS experiences	n	7	41	48
		%	41.2%	46.1%	45.3%
	Frequent impostor feelings	n	4	33	37
		%	23.5%	37.1%	34.9%
	Intense IS experiences	n	0	3	3
		%	0.0%	3.4%	2.8%
	TOTAL	n	17	89	106
		%	16.0 %	84%	100%

IS – impostor syndrome

Age and year of study

There was no statistically significant correlation between age and total CIPS score (r=−0.13; p=0.177). Similarly, there was no correlation between year of study and CIPS total score (r=−0.14; p=0.168). On the other hand, there was a small (r=−0.20), but statistically significant (p=0.039) negative correlation between age and CIPS category. This indicates that higher student age is associated with smaller degree of IS. Similarly, there was there was a small (r=−0.19), but statistically significant (p=0.048) negative correlation between year of study and CIPS category, which indicates that higher year of study is also associated with smaller degree of IS.

Clinical work experience

Table 2 shows the distribution of participants into CIPS categories according to the presence of previous clinical work experience. The distribution suggests that clinical work experience is associated with a greater likelihood of lower IS traits.

Table 2. The distribution of participants according to gender and previous clinical experience.

			Clinical Work experience		Total
			YES	NO	
CIPS categories	Few IS characteristics	n	17	1	18
		%	22.7%	3.2%	17,0%
	Moderate IS experiences	n	35	13	48
		%	46.7%	41.9%	45,3%
	Frequent impostor feelings	n	22	15	37
		%	29.3%	48.4%	34,9%
	Intense IS experiences	n	1	2	3
		%	1.3%	6.5%	2,8%
	TOTAL	n	75	31	106
		%	100,0%	100.0%	100.0%

Only one participant (3.2 %) with no clinical experience had few IS characteristics, while there were 17 (22.7%) of participants with clinical work experience in this category. While the percentage of participants with moderate IS experiences was similar for students with (46.7%) and without (41.9%) clinical work experience, students without clinical work experience were more likely to be in the "frequent impostor feelings" category (48.8% vs. 29.3%) and "Intense IS experiences" category (6.5% vs. 1.3%).

Because 3 cells had an expected count of less than 5, we used Fisher's exact test to determine whether the distribution across CIPS categories differed between students with and without clinical work experience. The Fisher's test was statistically significant ($p=0.015$), indicating that students with clinical experience were more likely to be placed in CIPS categories reflecting a lower level of IS. In addition, students with clinical experience had a statistically significant ($U=725.0$; $p=0.002$) lower CIPS total score (52.7±13.5 points; range: 31-83) compared to students without clinical work experience (61.3±12.2 points; range: 38-86), with the difference being moderate ($d=0.62$).

For additional analysis, we also categorized the students by clinical experience into additional categories: a) no clinical experience; b) <6 months; c) 6-12 months, d) 1-2 years and e) >2 years). We found a statistically significant negative correlation between the clinical work experience category and the CIPS category ($r=-0.34$; $p<0.001$), and between the clinical work experience category and total CIPS score ($r=-0.31$; $p<0.001$).

Discussion

To date, there has been very little research on the prevalence of IS among physiotherapy students. The aim of our study was to determine the prevalence of IS among physiotherapy students in Slovenia, regardless of the faculty attended, and also to investigate whether there are significant differences in the expression of IS depending on certain demographic variables.

General results

Our results indicate that some degree of IS occurs in 83% of physiotherapy students. The majority of students had moderate characteristics of IS (45.3%), followed by frequent impostor feelings in 34.9%. On the other hand, 17.0% of the students showed few IS characteristics. Only 2.8% of the students showed intense IS experiences. Very little research has been done on the prevalence of IS among physiotherapy students, so we compared our results with respect to the general population in Slovenia and with related professions.

Šavrič, (2018) reported that 67.2% of participants from the general working population had moderate to intense IS experiences, which is 13% lower than our sample of physiotherapy students. The prevalence rate of IS in Slovenia is slightly lower in the general working population compared to our sample of physiotherapy students. The slightly higher prevalence of IS among students might be due to the fact that they do not have as much clinical work experience and are confronted with a clinical environment for the first time, which can be very stressful (Ng & Tay, 2021). Compared to our study, Šavrič (2018) had a slightly more even distribution of the sample in terms of gender, which could further influence the differences in the prevalence of IS between physiotherapy students and the general working population in Slovenia. The lack of data in Šavrič's (2018) research prevents us from quantifying the percentage of healthcare workers in her study. This data would allow us to compare physiotherapy students and health workers in Slovenia, where the culture of perfectionism is particularly prevalent (Ng & Tay, 2021). It may be that the proportion of moderate to high IS traits is higher among health care workers in Slovenia than in the general working population and is closer to our results.

In their research, Petrič (2022) included a sample of 115 sport trainers and kinesiologists (mean age 29.4 years), who were employed, unemployed or worked as students. They found that most participants were in the moderate (35.65%) and frequent (53.04%) category of feelings of IS. Less than 1% of the respondents had few IS characteristics. The results of their research indicate that kinesiologists and trainers are experiencing feelings of self-doubt. When we compare our results with the research findings of Petrič (2022), we find a similar prevalence of IS expression in physiotherapy students and kinesiologists (in both cases, the largest proportion has moderately and frequently expressed IS characteristics). Also in their study, the prevalence of IS was highest with the category of moderate (35.65%) and frequent (53.04%) expression, but when comparing, we must take into account that their study had a more heterogeneous population than ours, in which the participants were only students.

Gender

The results of our study show that moderate expressions of IS are prevalent in both female (46.1%) and male (41.2%) participants. Females scored statistically significantly higher on the CIPS total score, but the proportion of females and males across CIPS - IS categories was similar. Therefore, it is difficult to say at this time whether the gender difference in mean CIPS total score is clinically relevant.

However, unlike us, Šavrič (2018) found significantly more pronounced features of IS in women compared to men. However, their study was conducted on a sample of the general working population and not physiotherapy students. Research conducted on a sample of 115 kinesiologists and trainers reported a prevalence of IS that was similar in both genders (Petrič, 2022). Kansara et al., (2021) examined the prevalence of IS among graduate physical therapists in India. 200 physical therapists participated in the study. They found that among 68 male participants, 58.8% had moderate IS features, 29.4% frequent, 8.82% few characteristics, and 2.94% intense IS experiences. In 132 female participants, it was found that 6.81% had few IS characteristics, 57.5% showed moderate characteristics, 33.3% frequent characteristics, and only 2.27% of the female population had intense characteristics. Also, no statistically significant differences were found between genders in terms of the expression of IS.

Villwock et al. (2016) conducted a pilot study of IS prevalence among 138 medical students in New York, who completed "The young impostor scale – YIS". They found that female gender was significantly more likely to be associated with IS. No less than 49.4% of females and only 23.7% of males reported IS symptoms. Cusack et al. (2013) attributed the reason for the higher prevalence of IS to the fact that modern women have several different roles in society in which they are expected to excel. In summary, previous research on the prevalence of IS as a function of gender is not entirely consistent. However, our findings are consistent with most studies that also show similar prevalence of IS in men and women (Leary et al., 2000; Rohrmann et al., 2016; Kansara et al., 2021; Kuppusamy et al., 2022).

Age

In our study, we found that older age of students was associated with lower expression of the IS characteristics, but not with the CIPS total score. Šavrič (2018) reached similar conclusions based on a sample of the general labor force, finding that young people report more pronounced IS traits in the early stages of their careers. Younger people who are at the beginning of their careers feel much additional pressure (Lane, 2015). During these sensitive years (18-25 years), people are between adolescence and adulthood. In this population, stress can come from feeling caught between two phases or from entering the workforce (Murphy et al., 2010). Polach (2004) states that unexpected and ambiguous situations and being surrounded by more experienced peers are additional factors that contribute to the emergence of IS traits. In his research, Lane (2015) notes that the expression of IS in young adults is as high as 79.3%. He conducted in-depth interviews and found that the feelings of IS are most prevalent when individuals are given new tasks at work. In addition, he notes that early in their careers, young people have a strong fear of others noticing that they are not capable enough. Petrič (2022), who studied the prevalence of IS among kinesiologists and coaches, finds that the prevalence of IS is more pronounced early in a career. As a limitation, he notes that the coaching profession is rarely practiced by older representatives. Many years of work and life experience may help older people overcome the characteristics of IS in their careers, which could explain a lower expression of IS.

Year of study and Imposter syndrome

We found that with a higher year of study, the expression of IS decreased. However, we did not find a statistically significant association between year of study and total CIPS score. Our results may be related to the fact that older individuals have more clinical work experience and have completed clinical training, which has given them more confidence in the clinical setting. Greater life experiences may also give older adults more self-confidence, which can be reflected in the prevalence of IS. On the other hand, Šavrič (2018) found in the general working population that employees with a higher education also have higher IS characteristics. This can be attributed to the fact that individuals with higher levels of education usually hold higher positions that require greater responsibility, and their decisions have a significant impact on the organization of work in the company. Therefore, they are under greater pressure than individuals with lower levels of education (Šavrič, 2018). Shahjalal et al. (2021) also found that third- and fourth-year medical students are more likely to be under pressure than other students due to increased academic workload, anxiety about studies and performance, and concerns about the future, and therefore are at significantly higher risk of developing IS than younger students. However, Khan & Khan (2021) found no significant differences in the characteristics of IS between dental students in their preclinical (1st, 2nd) and clinical (3rd, 4th) year.

Clinical work experience and Imposter syndrome

In our study, we found that there are statistically significant differences in the expression of IS depending on the presence of clinical work experience. Students with clinical work experience have a less pronounced IS and achieve a significantly lower CIPS total score than students without clinical work experience. We also found that a longer period of clinical work experience decreased the expression of IS traits and the overall CIPS score. The lower prevalence of IS in physiotherapy students with more clinical work experience may be attributed to greater self-confidence, boosted by many successfully rehabilitated patients during their working years.

Limitations

The main limitation of our study is the small sample size. With a larger sample, the associations between variables might be more pronounced and the results might be different. Another limitation refers to the gender bias of the sample. Many more women than men participated in our study. However, this reflects the fact that more women are enrolled into physiotherapy programs.

Conclusion

We found that IS occurs in the majority of physiotherapy students. Females achieve higher overall CIPS scores compared with males, but the proportion of males and females in each category of IS characteristics is similar. Therefore, it is difficult to say at this time whether the gender difference in mean CIPS total score is clinically relevant. The expression of IS decreases with increasing age, length of clinical work experience, and year of study. Physiotherapy students with clinical work experience have fewer IS characteristics than those without clinical work experience. The results obtained may be attributed to greater autonomy in the clinical setting and better perception of one's skills and knowledge with older age and more clinical work experience. Degree programs and clinical settings in which physiotherapy students receive practical training should pay more attention to raising awareness of IS in order to protect individuals who are particularly vulnerable to the negative consequences of IS. For example, they could draw inspiration from support programs and programs that help students identify IS tendencies, which are already being implemented by some universities around the world (MIT, California Technology). "Beating the impostor syndrome," developed by the Center for Creative Leadership, can also help raise awareness (Parkman, 2016). Feeling supported in one's social circle and being aware that other peers are also struggling with similar issues could potentially decrease the prevalence of IS among physiotherapy students.

Received: 10 January 2023 | **Accepted:** 18 January 2023 | **Published:** 01 Februry 2023

Author contributions

M.O. and K.K.K. conceptualized the idea. All authors worked on obtaining and analyzing the data. M.O. and K.K.K. wrote the first draft of the manuscript. All authors worked on finalizing the manuscript.

Acknowledgments

There are no acknowledgments.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Refrences

Bravata, D.M., Watts, S.A., Keefer, A.L., Madhusudhan, D.K., Taylor, K.T., Clark, D.M., ... & Hagg, H.K. (2020). Prevalence, Predictors, and Treatment of Impostor Syndrome: a Systematic Review. *Journal of General Internal Medicine*, *35*(4), 1252–1275. https://doi.org/10.1007/s11606-019-05364-1

Chapman, A. (2015). Using the Assessment process to overcome Imposter Syndrome in Mature Students. *Journal of Further and Higher Education*, *41*(2), 112–119.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates.

Cusack, C.E., Hughes, J.L., & Nuhu, N. (2013). Connecting Gender and Mental Health to Imposter Phenomenon Feelings. *Psi Chi Journal of Psychological Research*, *18*(2), 74–81. https://doi.org/10.24839/2164-8204.jn18.2.74

Feenstra, S., Begeny, C.T., Ryan, M.K., Rink, F.A., Stoker, J.I., & Jordan, J. (2020). Contextualizing the Impostor "Syndrome." *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.575024

Freeman, J., & Peisah, C. (2022). Imposter syndrome in doctors beyond training: a narrative review. *Australasian Psychiatry*, *30*(1), 49–54. https://doi.org/10.1177/10398562211036121

Gottlieb, M., Chung, A., Battaglioli, N., Sebok-Syer, S.S., & Kalantari, A. (2020). Impostor syndrome among physicians and physicians in training: A scoping review. *Medical Education*, *54*(2), 116–124. https://doi.org/10.1111/medu.13956

Kansara, V.P., Kumar, N., & Pabla, S. (2021). Prevalence of Impostor Phenomenon in Physiotherapy Professionals: A Pan India Survey. *International Journal of Health Sciences and Research*, *11*(10), 322–331. https://doi.org/10.52403/ijhsr.20211042

Khan, M.K., & Khan, K.R. (2021). Difference in the Characteristics of Imposter Syndrome in Dental Students of Preclinical and Clinical Phase. *Journal of Shalamar Medical & Dental College - JSHMDC*, *2*(1), 39–44. https://doi.org/10.53685/jshmdc.v2i1.19

Kuppusamy, P.D.A., Heeranthy, Kangyan, C., How, L.K., Htay, M.N.N., Khobragade, S., Moe, S., & Soe, H.H.K. (2022). How Impostor Syndrome Affects Academic Performance and Leadership Virtues among Undergraduate Clinical Year Medical Students. *Asian Journal of Medicine and Health*, 172–180. https://doi.org/10.9734/ajmah/2022/v20i1030517

Lane, J.A. (2015). The imposter phenomenon among emerging adults transitioning into professional life: Developing a grounded theory. *Adultspan Journal*, *14*(2), 114–128. https://doi.org/10.1002/adsp.12009

Leary, M.R., Patton, K.M., Orlando, A.E., & Funk, W.W. (2000). The impostor phenomenon: Self-perceptions, reflected appraisals, and interpersonal strategies. *Journal of Personality*, *68*(4), 725–756. https://doi.org/10.1111/1467-6494.00114

Mainali, S. (2020). Being an imposter: Growing out of impostership. *Journal of the Nepal Medical Association*, *58*(232), 1097–1099. https://doi.org/10.31729/jnma.5505

Mak, K.K.L., Kleitman, S., & Abbott, M.J. (2019). Impostor phenomenon measurement scales: A systematic review. *Frontiers in Psychology*, *10*(APR). https://doi.org/10.3389/fpsyg.2019.00671

Murphy, K.A., Blustein, D.L., Bohlig, A.J., & Platt, M.G. (2010). The College-to-Career Transition: An Exploration of Emerging Adulthood. *Journal of Counseling & Development*, *88*(2), 174–181. https://doi.org/10.1002/j.1556-6678.2010.tb00006.x

Ng, I.K.S., & Tay, D.S.H. (2021). Imposter syndrome—Perspectives of final year medical students. *Medical Education*, *55*(9), 1110. https://doi.org/10.1111/medu.14536

Parkman, A. (2016). The Imposter Phenomenon in Higher Education : Incidence and Impact. *Journal of Higher Education Theory and Practice*, *16*(1978), 51–61. http://search.proquest.com/openview/2aa0abe26e0eae30de19ed5337a13b5f/1?pq-origsite=gscholar&cbl=766331

Petrič, Ž. (2022). *Soočanje s sindromom prevaranta pri kineziologih na začetku poklicne poti*. University of Ljubljana.

Polach, J.L. (2004). Understanding the experience of college graduates during their first year of employment. *Human Resource Development Quarterly*, *15*(1), 5–23. https://doi.org/10.1002/hrdq.1084

Rivera, N., Feldman, E.A., Augustin, D.A., Caceres, W., Gans, H.A., & Blankenburg, R. (2021). Do I Belong Here? Confronting Imposter Syndrome at an Individual, Peer, and Institutional Level in Health Professionals. *MedEdPORTAL : The Journal of Teaching and Learning Resources*, *17*, 11166. https://doi.org/10.15766/mep_2374-8265.11166

Rohrmann, S., Bechtoldt, M.N., & Leonhardt, M. (2016). Validation of the impostor phenomenon among managers. *Frontiers in Psychology*, *7*(JUN). https://doi.org/10.3389/fpsyg.2016.00821

Sakulku, J., & Alexander, J. (2001). The Impostor Phenomenon. *International Journal of Behavioural Science*, *6*(1), 73–92. https://doi.org/10.14456/ijbs.2011.6

Šavrič, K. (2018). *Sindrom prevaranta in povezanost s samospoštovanjem pri zaposlenih*. Universtiy of Ljubljana.

Shahjalal, M., Khan, N.A., Mohsin, F., Rokon, S., Rahman, R., Alam, M.M., & Mahumud, R.A. (2021). Distribution of imposter syndrome among medical students of Bangladesh: a cross-sectional study. *F1000Research*, *10*, 1059. https://doi.org/10.12688/f1000research.55444.1

Thomas, M., & Bigatti, S. (2020). Perfectionism, impostor phenomenon, and mental health in medicine: a literature review. *International Journal of Medical Education*, *11*, 201–213. https://pubmed.ncbi.nlm.nih.gov/32996466/

Villwock, J.A., Sobin, L.B., Koester, L.A., & Harris, T.M. (2016). Impostor syndrome and burnout among American medical students: a pilot study. *International Journal of Medical Education*, *7*, 364–369. https://doi.org/10.5116/ijme.5801.eac4