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Original Article

Prevalence of Imposter Syndrome Among Medical Studentsof Rawalpindi, Islamabad and Lahore: A Cross-Sectional Study Investigating A Trending and Pragmatic Topic: We no Longer have to Live in Pluralistic Ignorance

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ABSTRACT

Objectives: To determine the prevalence of Imposter syndrome among medical students and to assess its association with various sociodemographic factors.

Study Design: Analytical cross-sectional study.

Replace and During of Study: Public and Private Medical Colleges of Islamabad/Rawalpindi and Lahore Pakistan, from Nov 2021-Apr 2022.

Methodology: An analytical cross-sectional study was carried out in Public and Private Medical and Dental Colleges of Islamabad/Rawalpindi and Lahore Pakistan, from Nov 2021 to Apr 2022. Three hundred ninety-nine eligible MBBS/BDS students were enrolled through non probability convenience sampling. Data was collected Online through a 20 item Clance questionnaire. Data was analysed using SPSS Version-25. Qualitative variables were expressed as frequency and percentages and quantitative variables as mean and S.D. Chi-square test was applied.

Results: Out of 399 participants, 254(63.6%) were males and 145(36.3%) were females. Majority of the participants (71.4%) were in age range of 20-22 years. Three hundred and sixty-two (90.7%) participants were students of MBBS, while 37(9.3%) studied in BDS. Two hundred fifty (62.65%) participants suffered from imposter syndrome which showed a positive association with gender (p<0.001), age (p<0.001), year of Study (p<0.001) and academic performance in class (p=0.002).

Conclusion: Imposter syndrome is quite prevalent among the high achieving medical students and is associated with various sociodemographic variables. Further in-depth research is needed to confirm its association with mental health issues and its adverse effects on the normal functioning of individuals.

Key words: Burnout, Imposter Syndrome, Medical Students

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INTRODUCTION

Imposter Syndrome is a recently unearthed psychological phenomenon. First ever mentioned back in 1978 in a study conducted by Clance and Imes.[1] Imposter Syndrome is defined as "internal experience of believing that you are not as competent as others perceive you to be".[2] Surprisingly, those in the medical profession, especially medical students, tend to have a propensity to develop Imposter Syndrome.[3] Imposter Syndrome has the following characteristics "An inability to realistically assess your competence and skills; Attributing your success to external factors; Berating your performance; Fear that you won't live up to expectations; Overachieving; Sabotaging your own success; Self-doubt; Setting very challenging goals and feeling disappointed when you fall short".[2] Some studies indicate that there both genders are equally affected by Imposter syndrome.[4] However, other studies indicate a distinction between genders noting that females were more prone to develop Imposter Syndrome.[1] Another study remarked the opposite, indicating male academicians had an increased prevalence of Imposter Syndrome.[5] One can see that the lack of clarity regarding the association of gender and Imposter Syndrome may indeed warrant further investigation and if such a distinction exists within medical students as well.

These are not the only sociodemographic factors that may influence Imposter Syndrome; for example, an American study,[6] noted that ethnicity of the participants, specifically minorities, played a role in the level of Imposterism. Chelsey L. Holden's,[7] research indicated that Imposter Syndrome was not particularly related to year-of-study. However, a systematic review acknowledged that age seems to decrease Imposter Syndrome among individuals.[8] The importance of research on this emerging issue lies in the fact that Imposter Syndrome can have a significant

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effect on mental health,[3-9] effects anxiety levels in students and increase the chance of burnout.[9] Therefore, acknowledging a problem that is as prevalent as much as it is unheard of can help solve a highly insidious issue. There is paucity of local data on this issue. Therefore our study aimed to assess the prevalence of Imposter Syndrome amongst Medical Students in Pakistan, specifically in Punjab Medical/Dental Colleges and to determine any association between sociodemographic variables and Imposter Syndrome.

METHODOLOGY

This quantitative, analytical cross-sectional study was conducted among the Medical and Dental students of Rawalpindi/Islamabad and Lahore Pakistan over a period of 6 months, from November 2021 to April 2022. Due to the ongoing pandemic, study was carried online using google forms. Ethical approval was sought from the Ethical Review Committee of Army Medical College prior to the study (ERC/ ID/ 217). Informed voluntary consent was taken from participants before data collection.

Inclusion Criteria: Undergraduate students of either gender, studying in Public or private medical/ dental colleges of Islamabad/Rawalpindi or Lahore Pakistan were included in the study.

Exclusion Criteria: Any student that had a previous psychiatric disorder was excluded from the study.

Using epi info version 7, keeping 95% confidence Interval with a margin of error 5%, the sample size calculated was 379. Taking 5% non-response rate, final sample size was calculated to be 399. After obtaining informed written consent, students were recruited using non probability convenience. A validated, closed ended questionnaire containing Clance Imposter Phenomenon Scale was used.[10] The questionnaire was divided into two parts. The first part consisted of demographic details of the participants while the second part consisted of the Clance Scale to calculate the level of Imposter Phenomenon in the students. Data was collected online using Google Forms. Links to fill out the form were emailed to the participants. Statistical Package of Social Sciences (SPSS) version 25 was used for data analysis. Qualitative variables were expressed as frequency and percentage while quantitative variables were expressed as mean and standard deviation. Chi-square test of independence was applied to determine association between various variables and Imposter Syndrome. P <0.05 was taken as statistically significant.

RESULTS

Out of 399 participants, 254(63.7%) were males and 145(36.7%) were females. Majority of the participants (71.4%) belonged to age group 20-22. Birth order of 165(41.4%) participants was Middle Born. Ethnicity of 291(72.9%) participants was Punjabi. Three hundred twenty three (81%) participants were studing in Government Medical/Dental Colleges with 362 (90.7%) being students of MBBS. 266(66.7%) students were studying in Medical/Dental colleges of Rawalpindi/Islamabad while 133(33.3%) studied in Lahore. Family Income of 187(46.9%) participants was above 100,000 per month. Hometown of 182(45.6%) students was urban Punjab followed by 98(24.6%) belonging to Islamabad/Rawalpindi. Sociodemographic details are given in Table-I.

Table-I: Sociodemographic details of Respondents (n=399)

Variable	n(%)
Age	
17-19	69(17.3)
20-22	285(71.4)
23-25	(10.8)
>25	2(0.5)
Gender	
Male	254(63.7)
Female	145(36.3)
Birth Order	
First Born	150(37.6)
Middle Born	165(41.4)
Last Born	84(21.1)
Ethnicity	
Punjabi	291(72.9)
Pushtoon	32(0.8)
Sindhi	1(0.3)
Seraiki	43(10.8)
Balochi	1(0.3)
Others	31(7.8)
Degree	
MBBS	362(90.7)
BDS	37(9.3)
Year of study	
First year	46(11.5)
Second year	122(30.6)
Third year	90(22.6)
Fourth year	110(27.6)
Final year	31(7.8)
College	
Government	323(81.0)
Private	76(19.0)
Academic Performance in class	
Below Average	21(5.3)
Average	208(52.1)
Above Average	120(30.1)
Exceptional	50(12.5)

The presence or absence of Imposter Phenomenon (IP) in a participant was determined by Clance Imposter Scale and a cutoff value of 62 was taken. Out

of 399, 261(65.4%) were found to be suffering from IP. Out of these 261, 150 (57.5%) were males and 111 (42.5%) were females. Figure-1 shows the distribution of IP among the two genders. A higher percentage of females (76.6%) were suffering from IP. Mean score of females was 71.03±12.71 while that of males was 63.68±14.06. The intensity of IP traits is illustrated in Figure-2, which shows that the intensity is more in females.

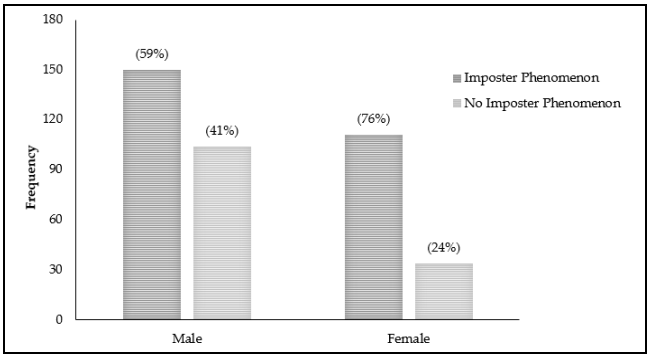

Figure-1: Prevalence of Imposter Syndrome among both genders

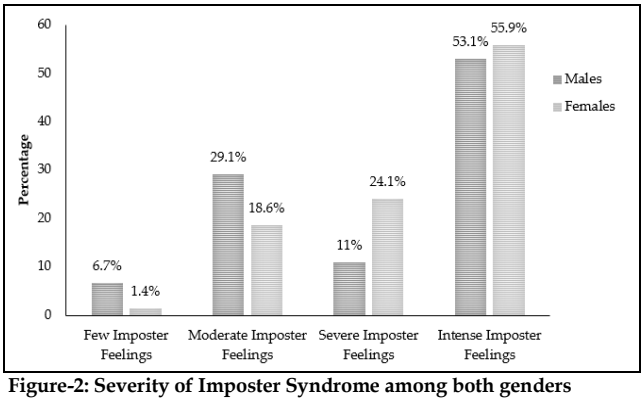

Figure-2: Severity of Imposter Syndrome among both genders

Significant association was found between Imposter syndrome and gender (p<0.001), age (p<0.001), academic performance (p=0.002), and year of study (p<0.001). However, ethnicity (p=0.291), religion (p=0.984), hometown (p=0.206), college (government/ private) (p=0.848), type of Degree (MBBSvsBDS) (p=0.245), city (p=0.026), birth order (p=0.869) and total family income (p=0.543) lacked a significant association with Imposter Phenomenon, as given in Table-II.

DISCUSSION

Our study showed that 62.7% Medical/Dental Students in Punjab were suffering from Imposter Syndrome. These results are congruent with other studies conducted on a national level. A study carried out by Bhatti MU *et al*,[11] found an Imposter Syndrome prevalence of 85.2%. Azhra Naheed College also reported similar findings with Imposter Syndrome being prevalent among 47.5% of medical students.[12] To further corroborate our results, an International study conducted in Malaysia,[3] indicated a prevalence of 45.7%. Many other studies,[3,11,12] demonstrate that Imposter Syndrome is particularly prominent among medical students. Indeed, the medical profession itself seems to be highly associated with Imposter Syndrome.[13]

Table-II: Association of various factors with Imposter Syndrome (n=399)

Variable	Imposter Phenomenon Present n(%)		*p*-value
	Yes	No	
Gender			
`	150(59.1)	104(40.9)	<0.001
Female	111(76.6)	34(23.4)	
Age group			
17-19	30(43.5)	39(56.5)	<0.001
20-22	203(71.2)	82(28.8)	
23-25	26(60.5)	17(39.5)	
>25	2(100)	0(0)	
Birth Order			
First Born	97(64.7)	53(35.3)	0.869
Middle Born	107(64.8)	58(35.2)	
Last Born	57(67.9)	27(32.1)	
Ethnicity			
Punjabi	196(67.3)	95(32.7)	0.291
Pushtoon	17(53.1)	15(46.9)	
Sindhi	0(0)	1(100)	
Balochi	0(0)	1(100)	
Others	48(63.2)	28(36.8)	
Degree			
MBBS	240(66.3)	122(33.7)	0.163
BDS	21(56.8)	16(43.2)	
College			
Government	212(65.6)	111(34.4)	0.474
Private	49(64.5)	27(35.5)	
Year of study			
First year	14(30.4)	32(69.6)	<0.001
Second year	91(74.6)	31(25.4)	
Third year	58(64.4)	32(35.6)	
Fourth year	79(71.8)	31(28.2)	
Final year	19(61.3)	12(38.7)	
Academic Performance in class			
Below Average	19(90.5)	2(9.5)	0.002
Average	145(69.7)	63(30.3)	
Above Average	73(60.8)	47(39.2)	
Exceptional	24(48.0)	26(52.0)	

To further illustrate the fact that Imposter Syndrome has a relationship with the medical profession, especially students, one can investigate Imposter

Syndrome prevalence in other fields. A study conducted in 2006 by Hutchison MA *et al*,[14] investigated Imposter Syndrome among engineering students. They found a prevalence of around 35%; significantly lower than our's 62.7%. Another study looking into Librarians,[15] found that prevalence was at 15%.

Imposter Syndrome has been correlated with increased levels of depression, increased levels of anxiety, increased levels of stress, decreased levels of self-esteem and increased rates of burn-out.[3,9] The fact that medical students are suffering from Imposter Syndrome along with pursuing a rigorous academic course may further exacerbate their quality of life and impact their professional lives.[3,7,9] As for why that is, medical students themselves tend to be high achievers, therefore they may place extra emphasis on themselves to "push forward" and achieve higher academic marks.[3] Academic stress among other factors such as social life, limited time, and exams,[16] were potential stressors for medical students.

It was noted in this study that Gender seemed to have an impact on the severity as well as prevalence of Imposter Syndrome. Specifically, there was a prevalence of 64% Imposterism amongst males and 80% prevalence amongst females. Compared to the Malaysian study,[3] which demonstrated a prevalence of 48% and 44% prevalence in male and females respectively. Our findings are further backed up by initial research,[1] of Imposter Syndrome, specifically Clance and Imes. Additionally, our findings also support the fact that both males and females suffer from Imposter Syndrome; however, females tend to suffer more. This is in correlation with the systematic review,[8] showing that there is a split in the literature deciding on whether gender influences Imposter Syndrome. Additionally, a study,[17] investigating gender and self-reported mental health problems noted that males typically were less likely to report mental health issues.

Age group also showed an association with prevalence of Imposter Syndrome. Our study noted a large spike in the age group of 20–22 years of age, and then a decrease in older individuals. This is in congruence with the Dena M. Bravata's study,[8] that noted a slight decrease in Imposter Syndrome in individuals as they grew older. Our study found no association between year of study and Imposter syndrome. Our findings are validated by Holden *et al*'s,[7] study that demonstrated as the individual went to a higher level of year of study, imposter syndrome decreased. Our research showed a significant decrease of Imposter Syndrome in first year students. This is contrast to other studies such as Ramsey and Brown,[18] who postulate that first-generation students are more prone to Imposter Syndrome. These studies are from the U.S., and so, a cultural difference may be at play, perhaps causing the discrepancy.

Academic performance in class was interesting to note as a significant difference was observed. Surprisingly, there was a decrease in the prevalence of Imposter Syndrome as the individuals rated themselves higher and higher in academic performance. Although there is limited data, at the time of writing, upon the subject of Imposter Syndrome and academic performance, one could conclude, albeit indirectly, that Imposter Syndrome increases the mental stress upon an individual,[13] & in doing so, may negatively influence the academic performance of the individual.[16]

LIMITATIONS OF STUDY

Our study gauged the prevalence and severity of imposter characteristics on basis of self-reported data so it may be subject to response bias. Since this study is a cross-sectional one; we cannot delve into the causes of Imposter Syndrome in medical students. Moreover, only Medical/ Dental students were used as the primary sample of our study hence, the results are not generalizable to the population.

RECOMMENDATIONS

Since Medical students are predisposed to developing Imposter Syndrome which leads to depression, anxiety, stress and decreased academic achievement. So it is imperative that medical schools should aim to ease students' stress- and work-loads,[16] which may help decrease Imposter Syndrome levels. Research suggests that universities should give proper mentoring to students, allowing students to "seek the help of experts" and use "appropriate psychothe-rapies" or counselling, which would help reduce Imposter Syndrome.[19] Importantly, victims of Imposter Syndrome should seek group therapy,[8,20] because knowing that you are not the only victim may be therapeutic in and of itself, allowing us to conclude that we no longer have to live in Pluralistic Ignorance.

CONCLUSION

Imposter Syndrome is highly prevalent among medical students of Islamabad, Lahore and Rawalpindi Pakistan. There were significant correlations between various socio-demographic factors like gender, age group, year of study, academic achievement in students and Imposter Syndrome.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

SFM: Data analysis plan, manuscript review, technical support & final apporval of the version to be published.

NK: Conception of idea, study design, literature review, data analysis plan, manuscript reiview, technical support & final apporval of the version to be published.

RAK: Statistical Analysis, Referencing, Introduction, Discussion, Results, Literature reiview & final apporval of the version to be published.

HR: Abstract, Introduction, Results, Discussion, conclusion, Literature revview, & final apporval of the version to be published.

AH: Introduction and Discussion, Limitations & final apporval of the version to be published.

MFY:Results, Discussion Manuscript Review & final apporval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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