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## ALARMING TREND OF PROCRASTINATION AND NARCISSISM AMONG MEDICAL UNDERGRADUATES

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### ABSTRACT

**Background:** Despite the rigorous demands of medical studies, procrastination is a common problem afflicting medical students. Medical professionals also exhibit narcissistic personality traits which may potentially aggravate procrastination.

**Objectives:** The present study looked to determine association between procrastination and narcissism among medical students and investigate differences between the two based on gender and previous educational background.

**Methods:** In this cross-sectional study, medical students (n=157) were administered two validated psychological instruments; narcissistic personality inventory (NPI-40) and irrational procrastination scale (IPS). Standard scores were used to group students into narcissists/non-narcissists and procrastinators/non-procrastinators. Comparative and correlational analyses were carried out. Subscales of NPI-40 were individually correlated with IPS. NPI-40 and IPS scores were also compared with gender and educational background.

**Results:** High frequencies of narcissism (45.22%) and procrastination (66.24%) were observed. No correlation was found between the two parameters (Pearson's  $R = -0.095$ ,  $p = 0.237$ ). Education-based analysis revealed a higher procrastination score for students with an O-level/A-level background compared to those with Matric/F.Sc. background (mean procrastination score; O/A-level 30.33 vs. Matric/F.Sc 25.94,  $p = 0.010$ ). Students with a Matric/F.Sc. background had a higher narcissism score compared to the O/A-level group (mean narcissism score; Matric/F.Sc. 15.72 vs. O/A-level 10.78,  $p = 0.11$ ). Gender based analysis did not show any difference in procrastination (mean score; males 26.36 vs. females 26.05,  $p = 0.717$ ) and narcissism (mean score; males 14.38 vs. females 16.03,  $p = 0.081$ ).

**Conclusion:** Students exhibiting narcissistic traits and procrastination dominate medical student population. Psycho-social measures should be adopted to help students overcome such deficits.

**Keywords:** Medical student, Narcissism, Narcissistic Personality Inventory, Procrastination, Irrational Procrastination Scale.

### INTRODUCTION

Medical studies are known to be physically and mentally taxing. The grueling work load and exhaustive curriculum along with the strain of doing well on assessments contribute to the birth of a stressful environment; lack of mitigating activities also plays a predominant role in the emergence of the latter. So, naturally, stress is a colossal part of a medical student's routine, with an occurrence of as much as 90%.<sup>1-3</sup> Stress ushers the advent of anxiety, both of which have been linked to procrastination among college students,<sup>4</sup> with there being a direct correlation between high-stress tasks and procrastination.<sup>5</sup> Defined as the avoidance of doing a task at its allotted time, procrastination is a recurrent predicament for students.<sup>6</sup>

Narcissism, described as a grandiose view of one's own talents and a craving for admiration, is another prominent abnormality in personality characteristics among students.<sup>7</sup> The number of people having narcissistic personality traits has reached towering proportions; a 30% increase has been seen over the last three decades.<sup>8</sup> Individuals high in narcissistic traits have an exaggerated sense of self-importance which hinders their judgment causing them to overestimate their capabilities.<sup>9</sup> Nevertheless, sub-clinical narcissism is not always considered a negative trait as some studies have shown it to be linked with academic success, possibly because of the higher competitive urge in narcissistic students.<sup>10</sup> The extreme confidence of a narcissistic personality poses a problem in that the

affected individuals romanticize their ability to perform tasks in a limited amount of time. Overconfidence and rebelliousness, both considered narcissistic traits, have been associated with procrastination in undergraduate college students.<sup>11</sup> The arguable notion that medical professionals are narcissistic,<sup>12</sup> and the high prevalence of procrastination among medical students<sup>13</sup> suggest a possible association between the two psychological characteristics. However, data on narcissism in medical students are limited, more so in the local context, and impact of narcissism on procrastination is not well studied.

The present study sought out a correlation between procrastination and narcissism in medical students and explored any difference due to gender or previous educational background between the two parameters.

## METHODS

A cross-sectional observational study design was employed. The study was conducted in the initial half of the year 2017. Non-random convenience sampling technique was employed. A total of 200 medical students studying at Central Park Medical College (years 1 and 2) were approached of which 157 (78.5%) participated in the study.  $N = 157$  was considered appropriate for this pilot exploratory study. Study information was provided to students and informed consent was obtained. For assessing the study parameters, two validated instruments namely 'Irrational procrastination scale' (IPS) and 'Narcissistic Personality Inventory-40' (NPI-40) were administered to the students in the paper form. Responses were collected anonymously. Demographic data including sex, age and educational background were also collected. Ethics approval was obtained from the Central Park Research Ethics Committee.

The validated instrument IPS is a self-reported measure of procrastination that employs a 5-point Likert scale. It comprises of 9 statements of which 3 (items 2, 5 and 8) are reverse-keyed. Score for each participant was calculated by adding the points assigned to each item, after reverse coding of the 3 positively worded items. Total score on this scale ranges from 0 to 45, with a higher score indicating greater use of procrastination by the students and vice versa. IPS has been shown to have a high reliability.<sup>14</sup>

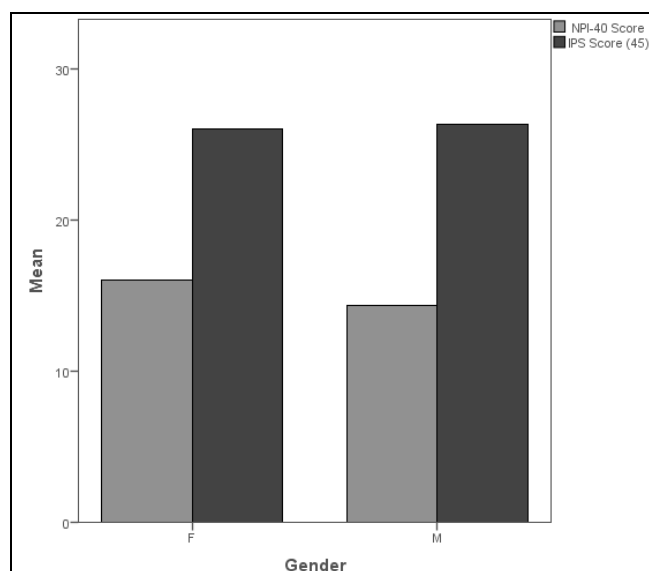
The NPI-40 is a validated self-reported measure of sub-clinical narcissism that consists of forty force-choice items. The forty items measure the seven component traits of narcissism by question, with there being eight for authority, six for self-sufficiency, five for superiority, seven for exhibitionism, five for exploitativeness, three for vanity, and six for entitlement. Total score on this measure ranges from 0 to 40 with a higher score indicating the existence of sub-clinical narcissistic traits and vice versa. NPI-40 has been demonstrated to have a high reliability.<sup>15,16</sup>

## Statistical Analysis

Students' scores on the two administered instruments as well as their demographic data were entered into and analyzed using SPSS version 23.0 (SPSS Inc. Chicago, Illinois, USA) in an anonymous manner. Data were entered twice and compared for any errors. Mean  $\pm$  SEM of quantitative variables (IPS and NPI-40 scores) was calculated for all students combined, for male and female students independently and for each education group i.e. (Matric + F.Sc) or (O-levels + A-levels) or (Matric + O-levels). Student categorization into Narcissists/Non-narcissists and Procrastinators/Non-procrastinators was done based on the available norms.<sup>14,16</sup> Frequencies were expressed as percentages. Independent sample T-test was applied to observe difference between male and female students. One-way ANOVA and post-hoc Tukey tests were applied to observe differences between each educational group. Pearson's correlation was applied to observe correlation between IPS and NPI - 40 scores. A p-value of  $< 0.05$  was considered as statistically significant.

## RESULTS

The age range of all students ( $n = 157$ ) was 17 – 24 years with a mean age of 19.49. 104 of the 157 students were female (66.2%) and the remaining 53 were male (33.8%). The range of IPS score for all students combined was 11 – 40 with a mean of 26.15. Mean IPS score for male students was 26.36. Mean IPS score for female students was 26.05. No significant difference in IPS scores was observed between male and female students ( $p = 0.717$ ) (Table 1, Figure 1). The range of NPI-40 score for all students combined was 2 – 29 with a mean of 15.47. Mean NPI-40 score for male and female students was 14.38 and 16.03 respectively. No



**Fig. 1:** Mean IPS and NPI-40 scores in males and female students.

significant difference in NPI-40 scores was observed between male and female students ( $p = 0.081$ ) (Table 1, Figure 1). No significant difference in NPI-40 subscale scores was observed between male and female students, except with respect to vanity in which female students scored higher with a mean score of 1.19 compared to a mean score of 0.089 for male students ( $p = 0.031$ ). No significant correlation was observed between IPS and NPI-40 scores ( $p = 0.237$ ) (Table 2, Figure 2). No significant correlation was discerned between IPS and subscales of NPI-40 either (Table 2).

Employing the standard values as cut-offs (IPS = 24, NPI-40 = 15.3), 104 of the total 157 students (66.24%) were classified as procrastinators (as indicated by their high IPS scores) while 71 of the 157 (45.22%) students were categorized as narcissistic (as reflected by their high NPI-40 scores).

Of the total 157 students, 137 (87.3%) had a Mat-

ric/F.Sc. background (Group A), 9 (5.73%) had an O-level/A-level background (group B) and 11 (7.0%) had an O-level/F.Sc. background (Group C). Mean IPS scores for groups A, B and C were 25.94, 30.33 and 25.22 respectively. Group B showed a statistically significant higher average IPS score compared to both groups A ( $p = 0.010$ ) (Figure 3, Table 3 and 4). Mean NPI-40 scores for groups A, B and C were 15.72, 10.78 and 16.33 respectively. Group A showed a significantly higher average NPI-40 score compared to Group B ( $p = 0.011$ ) (Figure 3, Table 3 and 4). Comparison of sub-scales of NPI-40 between the three groups did not impart any significant difference.

## DISCUSSION

Though there are numerous methods to measure procrastination, the results almost always suggest that a sizable part of the student body indulges in procrasti-

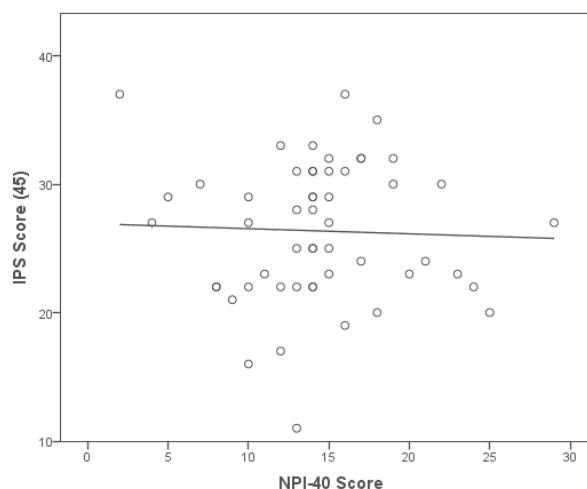
**Table 1:** Gender-wise comparison of IPS and NPI-40 (including subscales) scores.

Parameter	All Students (n = 157) Mean $\pm$ SEM	Males (n = 53) Mean $\pm$ SEM	Females (n = 104) Mean $\pm$ SEM	p-value
IPS score	26.15 $\pm$ 5.042	26.36 $\pm$ 5.400	26.05 $\pm$ 4.874	0.717
NPI-40 score	15.47 $\pm$ 5.604	14.38 $\pm$ 5.107	16.03 $\pm$ 5.785	0.081
Authority	3.79 $\pm$ 1.861	3.51 $\pm$ 1.772	3.93 $\pm$ 1.897	0.179
Self-sufficiency	2.48 $\pm$ 1.352	2.32 $\pm$ 1.341	2.56 $\pm$ 1.357	0.301
Superiority	2.06 $\pm$ 1.304	1.81 $\pm$ 1.093	2.19 $\pm$ 1.387	0.083
Exhibitionism	1.96 $\pm$ 1.562	1.79 $\pm$ 1.511	2.04 $\pm$ 1.588	0.352
Exploitativeness	1.74 $\pm$ 1.241	1.85 $\pm$ 1.277	1.68 $\pm$ 1.225	0.429
Vanity	1.09 $\pm$ 0.843	0.089 $\pm$ 0.870	1.19 $\pm$ 0.813	0.031*
Entitlement	2.34 $\pm$ 1.191	2.21 $\pm$ 1.215	2.40 $\pm$ 1.178	0.330

\*Difference is considered significant at  $p < 0.05$

**Table 2:** Correlation between IPS scores and scores on NPI-40 and its subscales.

IPS vs.	Pearson's R	p-value
NPI-40	-0.095	0.237
Authority	-0.158	0.048
Self-sufficiency	-0.125	0.117
Superiority	0.036	0.658
Exhibitionism	-0.046	0.564
Exploitativeness	0.033	0.681
Vanity	-0.027	0.734
Entitlement	-0.051	0.523

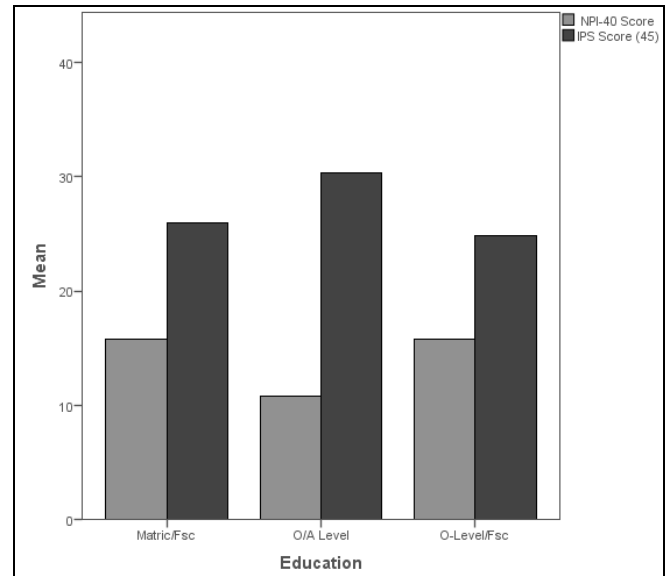


**Fig. 2:** Scatter diagram of IPS and NPI-40 scores.

nation.<sup>17-19</sup> The tremendous work load of medical studies does not leave much room for dilly-dallying; yet, we find that most students dawdle around when it comes to performing irksome or tedious tasks, despite being aware of the consequences. Two-thirds of the medical students in our study participated in procrastination which is consistent with the results reported previously.<sup>13</sup> Gender-based analysis of IPS scores did not disclose any difference between male and female students, which is concordant with findings from previous studies including those from an earlier study conducted by our group that used Lay's General Procrastination Scale<sup>20</sup> as a measure for procrastination.<sup>13,21</sup> Interestingly, of the 200 students approached for the study, only 157 (78.5%) participated which is an indirect reflection of the attitude of procrastination among non-participants and it is quite possible that the true frequency of procrastinating students would be higher than what has been observed.

The current study found that nearly half of the study sample displayed narcissistic traits with a mean NPI-40 score of 15.47. Previously, Bucknall et al. studied narcissism in a cohort of medical and allied health professionals (n = 248) which included surgeons, physicians, general practitioners, nurses, radiologists and microbiologists.<sup>22</sup> The healthcare professionals were reported to be less narcissistic (mean NPI-40 score 12.0) as compared to general population. However, level of narcissism in surgeons was higher (mean NPI score 15.0), similar to that observed in the present study.

Although female students scored higher on NPI-40 as an overall measure of narcissism as compared to



**Fig. 3:** Mean IPS and NPI-40 scores in different education groups.

their male counterparts (mean score: females 16 vs. males 14), the difference observed was not statistically significant ( $p = 0.08$ ). Traditionally, men are considered more narcissistic than women but studies have suggested that narcissism is a complex entity and the narcissistic inclination observed in males stems partly from the comparatively higher entitlement/ exploitativeness seen in males.<sup>23</sup> In a study of narcissism in celebrities, Young et al. reported significantly higher narcissistic propensity of women in comparison with men.<sup>24</sup> Gender-wise analysis of the NPI-40 subsets

**Table 3:** Comparisons of IPS and NPI-40 mean scores (including subscales) between groups based on educational background.

Parameter	Group A (n = 137) Mean $\pm$ SEM	Group B (n = 9) Mean $\pm$ SEM	Group C (n = 11) Mean $\pm$ SEM
IPS score	25.94 $\pm$ 4.826	30.33 $\pm$ 6.144	25.22 $\pm$ 5.911
NPI-40 score	15.72 $\pm$ 5.568	10.78 $\pm$ 5.191	16.33 $\pm$ 4.899
Authority	3.85 $\pm$ 1.833	2.22 $\pm$ 1.563	4.44 $\pm$ 1.944
Self-sufficiency	2.49 $\pm$ 1.337	2.44 $\pm$ 1.333	2.33 $\pm$ 1.732
Superiority	2.12 $\pm$ 1.308	1.56 $\pm$ 1.509	1.78 $\pm$ 0.972
Exhibitionism	2.02 $\pm$ 1.576	2.02 $\pm$ 1.576	2.11 $\pm$ 1.364
Exploitativeness	1.73 $\pm$ 1.237	1.33 $\pm$ 1.118	2.22 $\pm$ 1.394
Vanity	1.10 $\pm$ 0.828	0.67 $\pm$ 0.866	1.33 $\pm$ 1.0000
Entitlement	2.39 $\pm$ 1.183	1.78 $\pm$ 0.972	2.11 $\pm$ 1.453

**Table 4:** *P-values of IPS and NPI-40 (including subscales) between different educational groups.*

Groups		IPS	NPI-40	Authority	Self-Sufficiency	Superiority	Exhibitionism	Exploitative-ness	Vanity	Entitlement
A	B	0.010	0.011	0.010	0.923	0.220	0.021	0.346	0.131	0.132
	C	0.669	0.747	0.348	0.740	0.449	0.868	0.256	0.421	0.502
B	A	0.010	0.011	0.010	0.923	0.220	0.021	0.346	0.131	0.132
	C	0.091	0.33	0.017	0.881	0.715	0.036	0.155	0.150	0.575
C	A	0.669	0.747	0.348	0.740	0.449	0.868	0.256	0.421	0.502
	B	0.091	0.33	0.017	0.881	0.715	0.036	0.155	0.150	0.575

did not impart any difference with the exception that women scored higher in vanity compared to men. It is a classic trope that vanity is feminine. In a world that obsesses over feminine beauty, social pressure placed on women might force them to adopt more vain tendencies as opposed to men. Perhaps modern women behave this way because the structure of their society legitimately means that their appearance can have a dramatic influence on their lives.

The present study did not find any correlation between procrastination and narcissism or any of the assessed subsets of narcissism. An online survey carried out in the United Kingdom, found a positive correlation between the entitlement/exploitativeness element of narcissism and procrastination but the survey was done on the general population and not targeted specifically at a student population.<sup>25</sup>

An intriguing finding of our study was that students with an O-level/A-level background procrastinated more compared to those with a Matric/F.Sc and an O-level/F.Sc. background; the absolute opposite was true for narcissism, with O/A-Level students being less narcissistic compared to those in the other two groups. This distinction in IPS scores may be because of a difference in tutoring and curricula, whereas variance seen in NPI scores could possibly be because of different milieus and disciplining. Caution must be exercised in the interpretation of these results as the groups were not adequately matched for sample size. However, these findings certainly merit further investigation into these important yet often overlooked psychosocial consequences of two different educational systems.

The relatively small sample size of the present study is a limitation in the generalization of these results. Furthermore, the cross-sectional study design did not allow for evaluation of a causal relationship between the studied parameters. The researchers had no control over the precision with which the students filled in their responses which is another aspect which demands consideration while designing future studies.

It is **concluded** that academic procrastination

and sub-clinical narcissism have a common occurrence among medical students. Academic procrastination jeopardizes students' success. Additionally, the breeding of narcissistic medical students can lead to them becoming narcissistic physicians which can pose a risk to patient care in the future. Medical institutes should encourage student counselling and students should be taught to overcome such negative personality characteristics. Psychological interventions fashioned for pacifying these problems should be incorporated into the medical teaching framework.

More comprehensive future research employing study designs which overcome the limitations highlighted in the present work should be carried out to provide definitive evidence. There is also dire need to document the overall psychological health of medical students by assessing relationships of procrastination and narcissism with other prevalent psychiatric problems including stress, anxiety, depression and low self-esteem.

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#### Authors' Contribution

H Nawaz, SIA Shah, A Mumtaz and AS Chughtai were involved in conception and design of the study, review and finalization while H Nawaz and SIA Shah were additionally responsible for data collection and analysis. The manuscript was seen and approved by all authors.

#### Support

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#### Conflict of Interest

The authors declare no conflict of interest.

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