



## PERCEIVED STRESS AND ACADEMIC MOTIVATION: A COMPARATIVE STUDY IN MEDICAL BEGINNERS

### Biochemistry

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### ABSTRACT

**Introduction:** Stress is one of the variables which may relate with academic performance of medical students. Along with it Academic motivation also came in to light in last decade. Motivation which drives our actions can be variable as Intrinsic, Extrinsic or Amotivation. Present study aimed to study the relationship between academic motivation and perceived stress in medical beginners.

**Material and method:** Cross sectional questionnaire based study was conducted in Department of Biochemistry, SBKS MIRC. 140 first year medical students enrolled as study group. Level of stress was detected by self reported PSS score and motivation was assessed by self reported Academic Motivation questionnaire.

**Results:** Study found that among recruited participants 43.57% (61) were males and 56.43% (79) were females. Mean Perceived Stress score in stressed and non-stressed group was  $21.54 \pm 5.31$  and  $10.47 \pm 1.55$  respectively and significantly higher in stressed students compare to non stressed students ( $p < 0.001$ ). Mean PSS score in male students is 18.52 and female students is 21.49. Comparison of motivation parameters between stressed and nonstressed group found highly expected significant correlation ( $p < 0.001$ ) between Amotivation with PSS score (OR- 0.747; 95% CI 0.650-0.859,  $p < 0.001$ ).

**Conclusion:** This study confirms that the prevalence of perceived stress is high among medical students and this may be correlated with their Amotivation. Our further interest would be to follow these students during their academic career and evaluate the academic effectiveness of the students

### KEYWORDS:

Perceived stress scale, Amotivation

#### Introduction:

Stress in medical students has been recognized for a long time and medical education is consider as being stressful as it is characterized by many psychological changes in students.<sup>1</sup> It is reported in literature that long working hours, lack of peer support, competitive environment, living conditions in hostel, vastness of academic curriculum, frequency of exams, no time for revision, fear of failure in exam, high family expectations, insecurity regarding professional future, home sickness, lack of recreational activities, financial problems, mismatch between capability and expectation are some reasons of stress.<sup>2</sup>

Previous reports in stress in medical students and its association with depressive disorders and suicidal ideation, raised concerns in many education institutions for their academic performance,<sup>3,4</sup> but stress does not seem to be the only variable which is related to academic performance. Regarding the literature, motivation is also a highly important construct which can affect the performance of individuals.<sup>5</sup> Interest of medical educators in motivation is on the rise, especially in the last decade. Deci and Ryan (1985) explain three different kinds of motivation, which drive our actions are Intrinsic motivation (individuals are motivated by their own), Extrinsic motivation (individuals are externally motivated) and Amotivation (neither externally motivated, nor intrinsically motivated).<sup>6,7</sup> Three major viewpoints bring to light the issues that form the starting point for the current review: To what extent are medical students intrinsically or extrinsically motivated? Why do we need to know? Which type of motivation is useful in medical education?<sup>8</sup>

It has been suggested earlier that stress-related factors may be interlinked, forming an intricate psychological structure that may precipitate and perpetuate academic stress and its association with academic performance and academic motivation. Present study was

aimed to see the relationship between academic motivation and perceived stress in first year MBBS students.

#### Materials and Methods:

It was a Cross sectional study conducted in Department of Biochemistry, SBKSMI&RC after Ethical Approval. Total 140 First year M.B.B.S students (2016-17 Batch), volunteered and gave consent were recruited and explained the objectives of present study in detail. Students of any kind of self reported psychological disorders considered as excluded.

After recording of age, gender and demographic aspects stress was assessed with the Pre-validated Questionnaire "Perceived Stress Scale". Each item is rated on a 5-point scale ranging from never (0) to almost always (4). Positively worded items are reverse scored, and the ratings are summed, with higher scores indicating more perceived stress.

Type of motivation and its level was assessed by Academic Motivation Scale (AMS-28 College Version)

#### Results and Analysis:

- **Stress and its correlation with Gender and BMI:** From above results among all participants 87.86% students were stressed and 12.14% students were non stressed with mean PSS score  $21.54 \pm 5.31$  and  $10.47 \pm 1.55$  respectively ( $p < 0.001$ ). Out of 140, 43.57% (61) were male and 56.43% (79) were female student. Mean PSS score was found to be significantly more in female students compare to male group ( $21.49 \pm 6.18$  vs  $18.52 \pm 5.82$ ,  $p < 0.001$ ). In this study mean BMI was  $23.75 \pm 4.82$  kg/m<sup>2</sup> and higher in males ( $24.43 \pm 4.45$ ) compare to female ( $23.22 \pm 5.06$ )
- **Relationship between Motivation and PSS:**

**Table-I Association between Motivation and PSS score**

Motivation	Group	N	Mean	SD	p value
Intrinsic	Stressed	123	18.50	4.38	0.072
	Non Stressed	17	20.20	3.33	
Extrinsic	Stressed	123	20.49	4.31	0.060
	Non Stressed	17	22.41	3.49	
Amotivation	Stressed	123	18.33	7.25	0.000
	Non Stressed	17	6.24	4.02	

Above table shows comparison of Intrinsic, Extrinsic and Amotivation parameters between Stressed and Non Stressed group and we have found highly significant association between Amotivation and PSS score ( $p < 0.001$ ). Intrinsic Motivation and extrinsic motivation does not correlate with perceived stress in students. Table-II is showing regression analysis between stressed and nonstressed group, also supports our findings statistically.

**Table-II Logistic Regression between Stressed and Non Stressed Group**

Parameter	p value	Odds Ratio	95% CI	
			Lower	Upper
Intrinsic	0.362	1.087	0.909	1.300
Extrinsic	0.537	1.050	0.899	1.227
Amotivation	0.000	0.747	0.650	0.859

## Discussion

### PSS and Stress

The participants were categorized as 'stressed' and 'nonstressed' based on the calculated score with the help of perceived stress scale (14 items). High prevalence of stress was found in medical students as 87.86% students were having high PSS score. Data reported till date in other Asian countries for overall PSS score in medical students found discrepancies as some found less score,<sup>7</sup> some are in accordance with our study.<sup>10</sup> Stress prevalence in present study is greater than European medical undergraduates.<sup>11</sup> Similarly levels of stress in British and Swedish study have been reported to be 31.2%<sup>12</sup> and 12.9%<sup>13</sup> respectively.

Multiple factors such as variations in the curricula and/or evaluation (examination) system, and use of different measures for stress may affect the amount and severity of stress experienced by medical students and limit comparability among these studies.<sup>14</sup> Present study selected the perceived stress scale since this instrument has been documented for its reliability and validity.<sup>15</sup> Moreover, PSS not only focuses on academic stress but also includes personal issues or reactions to stressful situations. A study from Agha Khan University, Pakistan has reported that more than 90% of students experienced stressed at one time or the others during their course.<sup>16</sup> Similar study from India reported that 73% of the students had perceived stress at some point or the other during their medical schooling.<sup>16</sup>

### PSS and Gender:

Among 140, 43.57% participants were males and 56.43% were females. Correlation between PSS scores and gender showed that among male students the PSS score ( $18.52 \pm 5.82$ ) is lower than female group ( $21.49 \pm 6.18$ ), which is in concordance with various Indian studies.<sup>17</sup> Higher stress in females could be because of their sensitive nature and the way of reacting to stressful situations. Studies also reported that Asian male have comparatively high PSS,<sup>18</sup> while some reported insignificant gender difference.<sup>19</sup>

### PSS and BMI

Unlike other studies in Asian population present study found no correlation between PSS and BMI.<sup>20,21,22</sup> Different persons respond differently to the overwhelming stress, some lose their appetite, while others start eating more. These changed eating habits may lead to changes in the weight and BMI.<sup>23</sup>

### PSS and Motivation

Comparison of intrinsic, extrinsic and Amotivation parameters between stressed and nonstressed group found highly expected significant correlation ( $p < 0.001$ ) between Amotivation with PSS score (OR- 0.747; 95% CI 0.650-0.859,  $p < 0.001$ ). In comparison with previous study in Canadian students, present study had higher levels of Amotivation and lower levels of self-determined motivation (intrinsic motivation to accomplish).<sup>24</sup> Study concluded that individuals who report high levels of Amotivation, correlated significantly with perceived stress in students.

Non-regulated and non-intentional behaviours in Amotivated students may result from feelings of not being able to complete an activity successfully, not expecting an activity to yield a desired outcome or not valuing a particular activity.<sup>25</sup>

## Conclusion:

This study confirms that the prevalence of perceived stress is high among medical students and this may be due to their Amotivation. After describing the importance of motivation for learning in medicine, our further interest would be to follow these students during their academic career and to evaluate the academic effectiveness of the students. Based upon "motivational dynamic model", recommendations can be made to provide a multitude of various strategies with positive effects on student's motivation to learn.

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