Exam Anxiety Related to Exam Preparation Time and Number of Hours of Sleep and Comparison of Exam Anxiety among Rural and Urban, Hosteller and Non-Hosteller First Year Medical Students

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Abstract

Exam anxiety intensifies psychological distress, reduces academic motivation and lowers performance. The present study aimed to identify exam anxiety related to exam preparation time and number of hours of sleep. Additionally, the present study attempted comparison of exam anxiety among rural and urban, hosteller and non-hosteller first year medical students. Westside Text Anxiety Scale (WTAS) were administered among 151 first year undergraduate medical students attending Bangalore Medical College and Research Institute. The results showed higher test anxiety scores and more studying hours among rural students with female preponderance. There was no statistically significant difference with regards to sleep hours and among hostellers, non-hostellers.

The negative emotion of test anxiety which serves to raise the distress level among medical students is a common emerging concern and thus good intervention to build positive coping skills should be incorporated in the lives of medical students.

Keywords: test anxiety, medical students, rural, urban, hosteller, non-hosteller

Introduction

Test anxiety is considered as one of the major problems among medical students as it most likely causes underachievement, low performance, demotivation and psychological distress.¹, ² Several studies in US and Canada outlined that student pursuing medical course experience more psychological distress than general population.³ Further, 58.59% of first year medical students experience psychological distress in Malaysia.⁴ The rationales are thought to be high expectation on medical students in mastering extensive professional knowledge and specific skills in highly competitive environment.⁵ Additionally, the overwhelming information leaves a minimal opportunity for medical students to relax which has been consistently linked to psychopathology.⁶ The negative emotion of test anxiety which serves to raise the distress level among students is a common concern emerging from the existing literatures. A moderate level of distress promote creativity and achievement of students, but intense pressure of highly anxious students most likely secure unsatisfactory grades in studies.⁶

A high prevalence of sleep disorder was found among medical students, specifically female students. Sleep pattern of these medical students was characterized by insufficient sleep duration, delayed sleep onset, and occurrence of napping episodes during the day.⁷ Stress was observed in 187 (27.7%) females and 112 (20.4%) males; the association with gender being statistically significant in a study conducted by Vivek. B. Waghachavare et al.⁸

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Students residing in rural areas showed significantly lower cortisol levels values, but subjectively perceived the situation of examination as more stressful as concluded by Zarzycka D et al.\textsuperscript{9}

Another study conducted by Mihir P Rupani et al also concluded that the total anxiety scores were significantly higher among female medical students. The emotional effect of exam anxiety was significantly higher among the female medical students than the males and among the students living at hostel than those living with their families.\textsuperscript{10}

Hence the present study was undertaken with the following objectives

**Objectives:**

To study correlation between exam anxiety and sleeping hours

To study correlation between exam anxiety and number of hours of studying

And to compare exam anxiety among rural and urban, hosteller and non-hosteller first year medical students.

**Materials and Method**

In this cross sectional study, convenient sampling method was used to collect data from 151 first year medical students attending Bangalore medical college and research institute. Out of 250 medical students, 151 were willing to participate in the present study. With regard to gender, 92(44.7\%) medical students were male and 59(28.6 \%) students were female. Students who completed their five weeks in medical program were included and students those who had taken mental health treatment were excluded as their mental health problem may contribute for demotivation and psychological distress

**Westside Test Anxiety Scale (WTAS)**

WTAS was used to measure test anxiety (Driscoll, 2007). It consisted of ten brief items and it is measured in five points likert scale. Total score was divided by ten to obtain the mean value in which a mean score of less than 3 was considered as normal or low anxiety whereas mean score of more than 3 showed test anxiety. The alpha reliability of this scale in this study was 0.89.

**Results**

**Baseline characteristics**

<table>
<thead>
<tr>
<th>Baseline characteristics (Mean ±SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (n=151)(73.3%) Male=92(44.7%),Female=59(28.6)</td>
</tr>
<tr>
<td>Non Hostellers (n=67) (32.5%) Male=36(17.4%),Female=31(15)</td>
</tr>
<tr>
<td>No hrs. of sleep 7.05±0.9</td>
</tr>
<tr>
<td>No hrs. of study 4.1±1.5</td>
</tr>
<tr>
<td>Anxiety score 2.8±0.65</td>
</tr>
</tbody>
</table>

**Table 1: Comparison of different parameters in rural and urban students expressed as Mean ±SD**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Rural</th>
<th>Urban</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of hrs. of study</td>
<td>4.5±1.6</td>
<td>4±1.2</td>
<td>0.05*</td>
</tr>
<tr>
<td>No of hrs. of sleep</td>
<td>7.1±0.9</td>
<td>7±0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Anxiety score</td>
<td>2.9±0.5</td>
<td>2.7±0.6</td>
<td>0.04*</td>
</tr>
</tbody>
</table>

Rural students put in more hours of studying compared to urban students (p value 0.05).

Westside test anxiety score was significantly higher among rural students in comparison to urban students. (p value 0.04)

No statistically significant difference among the students regarding number of hours of sleep.

**Table 2: Comparison of different parameters in hostellers and non-hostellers**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Hostellers</th>
<th>Non-hostellers</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of hrs. of study</td>
<td>4.3±1.5</td>
<td>3.8±1.5</td>
<td>0.05*</td>
</tr>
<tr>
<td>No of hrs. of sleep</td>
<td>7±0.9</td>
<td>7.1±0.9</td>
<td>0.2</td>
</tr>
<tr>
<td>Anxiety score</td>
<td>2.8±0.5</td>
<td>2.7±0.6</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Hostellers significantly studied more number of hours compared to non-hostellers

No statistically significant differences regarding number of hours of sleep and anxiety scores
Table 3: Comparison of different parameters in female students from rural and urban areas

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Rural</th>
<th>Urban</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of hrs. of study</td>
<td>4.7±1.6</td>
<td>3.9±0.9</td>
<td>0.02*</td>
</tr>
<tr>
<td>No of hrs. of sleep</td>
<td>6.8±0.7</td>
<td>7.1±0.9</td>
<td>0.08</td>
</tr>
<tr>
<td>Anxiety score</td>
<td>2.9±0.5</td>
<td>2.7±0.5</td>
<td>0.01*</td>
</tr>
</tbody>
</table>

Rural female students are more anxious (p value 0.01) and study more (p value 0.02) compared to their urban counterparts.

But no significant differences with regards to number of hours of sleep.

Table 4: Comparison of different parameters in male students from rural and urban areas

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Rural</th>
<th>Urban</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of hrs. of study</td>
<td>4.3±1.6</td>
<td>4.08±1.4</td>
<td>0.36</td>
</tr>
<tr>
<td>No of hrs. of sleep</td>
<td>7.2±0.9</td>
<td>6.9±0.8</td>
<td>0.13</td>
</tr>
<tr>
<td>Anxiety score</td>
<td>2.9±0.6</td>
<td>2.6±0.7</td>
<td>0.01*</td>
</tr>
</tbody>
</table>

Rural male students are also more anxious (p value 0.01) compared to their urban counterparts.

But no significant differences with regards to number of hours of sleep and study.

**Discussion**

The present research activity was undertaken to study the effect of exam preparation time and number of hours of sleep on exam anxiety and comparison of exam anxiety among rural and urban, hosteller and non-hosteller first year medical students. 151 medical students were administered West Test Anxiety Scale and the results were statistically analysed.

The results of the study revealed the following:

Rural students put in more hours of studying compared to urban students (p value 0.05).

Westside test anxiety score was significantly higher among rural students in comparison to urban students. (p value 0.04)

Rural female students are more anxious (p value 0.01) and study more (p value 0.02) compared to their urban counterparts.

Rural male students are also more anxious (p value 0.01) compared to their urban counterparts.

No statistically significant difference among the rural and urban students regarding number of hours of sleep.

Hostellers significantly studied more number of hours compared to non-hostellers. No statistically significant differences regarding number of hours of sleep and anxiety scores.

Test anxiety is a widespread phenomenon when an extreme nervousness arising from an anxiety-inducing test situation prevents one from demonstrating their true potential and thus lowers performance especially in the educational environment. 11 Test anxiety is a multidimensional construct combining with worry, emotionality, interference, fear of failure, self-esteem and lack of confidence. 12 First year medical students are more vulnerable for test anxiety as they are required to do lot of presentation in front of their peers in Problem Based Learning (PBL), Mock Objective Subjective Clinical Examination (MOSCE), demonstrate how to manage difficult clients and explain physiology and anatomy of the body in the lab. 13, 14

In our study, rural students exhibited significantly higher test anxiety scores and studied more number of hours compared to urban students. This is in concordance with the study which states that Students residing in rural areas subjectively perceived the situation of examination as more stressful. 15 Barikani identified economic and accommodation-related problems as probable stressors among Iranian medical students. 16

In the current study, gender was found to be one of the most important factors in the development of stress, with the results indicating a female predominance; a similar trend was observed by Abdulghani et al. and Abu-Ghazaleh et al. 17, 18

**Conclusion**

Our study results indicate higher test anxiety...
scores and more studying hours among rural students with female preponderance. There was no statistically significant difference with regards to sleep hours and among hostellers, non-hostellers.

The instructors, advisers and other faculty members who notice the signs of stress in a particular student need to have a non-threatening, non-judgmental way to help medical students recognize and handle their stress. Universities have to consider test anxiety as one of the problems which more likely affects the psychological wellbeing and motivation of the medical students. Provide psychological intervention for test anxiety at the first semester would be an advantage for medical students to secure good scholastic performance and overcome the sequel of test anxiety.

Good intervention includes relaxation basics like yoga, learning to identify and counter negative thoughts, practical ways to increase healthy eating, building positive coping, apply relaxing or activating words appropriately, and re-direct time and energy based on the level of importance.

**Conflict of Interests:** This study authors declare that there is no conflict of interests regarding the publication of this article.

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**Source of Funding:** Self

**Ethical Clearance:** Taken

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