Objective Assessment of Students Performance before and After Joining Medical College

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Abstract

Aim and objectives: In general students have good percentage of marks in intermediate/plus 2 education, but fail to show same level of performance after joining medical colleges. Aim and objective of present study are to study how much percentage of students showing such decreased level of performance after joining the medical college and to understand the probable causes for their poor performance. *Materials and methods:* Data was collected from 167 second year MBBS students of GSL Medical College, Rajamahendravaram, A.P, in the form of questionnaire regarding marks obtained in the intermediate and marks scored in the anatomy subject in formative, summative and final examinations of Anatomy subject along with causes for their altered performance. *Results:* students have an average of 93.47% in their Plus2 and 1st internal-47.98%, second internal 44.62%, 3rd internal 53.40%, final exam 70.43% in anatomy subject and 70% in all three subjects in 1st year MBBS final exams. *Conclusion:* Students' performance decreased significantly after joining medical college in 1st year. In students point of view stress, procrastination and social media has negative influences on their academic performances.

Keywords: Medical Student Performance; Under Achievement; Factors Influencing.

Introduction

Majority of the students who opt for MBBS course will have very good academic track record in their schooling and junior college education. Surprisingly their level of performance drops drastically after joining the medical professional colleges. Many of these students who secured 85% to 95% of marks in their intermediate /+2 education are failing to secure 50% of marks in internal assessment examinations that are conducted in first 3-4 months of 1st MBBS. More disturbing is the fact that these internal assessment examinations will have only 30% of the total syllabus of each subject, though the burden is less, students are failing to secure decent percentage of marks. These common findings pose a great challenge to the medical teachers in understanding the academic competency of the new entrants in the field of medicine and to find reasons behind their detrimental performance.

Many factors were thought to be causes for their altered performance in the 1st year of medical profession, such as fear of ragging by the senior students which may even cause depression in the new comers, home sick, absenteeism may lead to low achievements [1], study patterns and study materials that they use [2], lack of planning and management of time and other influences like social media and availability of electronic gadgets like smart phones and laptops.

After joining the medical profession first big academic challenge faced by them is learning anatomy, which is a vast subject with 650 hours of teaching for the first year MBBS students as per the curriculum of Dr. NTR university of health sciences to which this medical college if affiliated. Keeping all these aspects in mind we have designed the study aimed to compare students marks (inter or +2) before joining the college with his performance in Anatomy examinations during 1st year and university examinations as well. The present study not just limited to compare the marks but it is also aimed to find the reasons for their decreased performance in their own perspective.

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Material and Methods

The present study was done at GSL Medical College, Rajamahendravaram, Andhra Pradesh. A total of 167 second MBBS students were voluntarily participated in the present study. Data collected for the study contained information regarding the performance of the students in various examinations like percentage of marks obtained in the intermediate /+2 examinations , 1st , 2nd, 3rd internal assessment marks in anatomy, first MBBS final examination marks in Anatomy and Total (all three subjects) Percentage of marks scored in the 1st MBBS university examination. The information given by the students was cross checked by verifying the records available at the various departments in the college. Out of 167 students, 165 of them participated in the answering the questionnaire that is given to them contained 8 questions which are prepared by the authors.

Students have to give response to the score of 0, 1 or 2 for each question. Here, 0- no affect, 1- moderate affect, and 2- significant affect (Table 3).

Statistical analysis: All statistical analysis was performed by using SPSS trial version 21.0 and MS Excel 2007. Descriptive data was presented in the form of Mean ± SD and percentages. ANOVA was performed to assess the mean difference among various groups such as exam performance. For all statistical analysis, $p < 0.05$ was considered as statistically significant.

Results

When the data was presented for descriptive analysis (Table 1), to know whether there is any alteration in the performance of the student, before and after joining the medical college, we found that

Table 1: Showing over all comparison of marks (descriptive analysis)

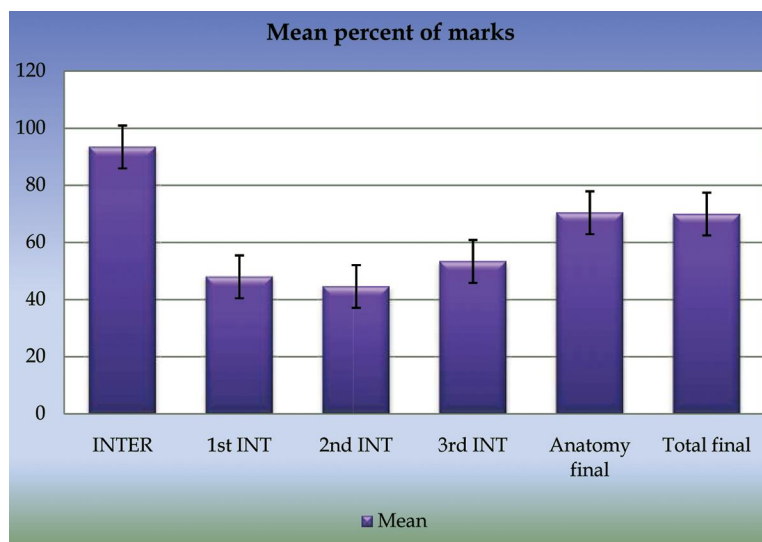|	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum	P VALUE
INTER/+2	167	93.4725	4.10027	0.31729	92.846	94.0989	70.3	98.4	0.000
1st INT-Anatomy	167	47.988	11.71653	0.90665	46.198	49.7781	12	72	
2nd INT-Anatomy	167	44.6228	13.18799	1.02052	42.6079	46.6376	6	76	
3rd INT-Anatomy	167	53.4072	9.45449	0.73161	51.9627	54.8516	31	73	
FINAL ANATOMY	167	70.4311	7.28133	0.56345	69.3187	71.5436	50	86	
FINAL TOTAL	167	70.005	6.54409	0.5064	69.0052	71.0048	54.33	83.5	

Table 2: Showing multiple comparisons between individual exam marks (ANOVA)

Dependent Variable: PERFORMANCE
LSD

(I) GROUP	(J) GROUP	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
INTER/ +2	1st INT- Anatomy	45.48443*	1.01214	0.000	43.4983	47.4706
	2nd INT- Anatomy	48.84970*	1.01214	0.000	46.8635	50.8359
	3rd INT- Anatomy	40.06527*	1.01214	0.000	38.0791	42.0514
	ANATOMY FINAL	23.04132*	1.01214	0.000	21.0551	25.0275
	FINAL TOTAL	23.46747*	1.01214	0.000	21.4813	25.4536
1st int	2nd INT- Anatomy	3.36527*	1.01214	0.001	1.3791	5.3514
	3rd INT- Anatomy	-5.41916*	1.01214	0.000	-7.4053	-3.433
	ANATOMY FINAL	-22.44311*	1.01214	0.000	-24.4293	-20.4569
	FINAL TOTAL	-22.01697*	1.01214	0.000	-24.0031	-20.0308
2nd int	3rd INT- Anatomy	-8.78443*	1.01214	0.000	-10.7706	-6.7983
	ANATOMY FINAL	-25.80838*	1.01214	0.000	-27.7946	-23.8222
	FINAL TOTAL	-25.38224*	1.01214	0.000	-27.3684	-23.3961
3rd int	ANATOMY FINAL	-17.02395*	1.01214	0.000	-19.0101	-15.0378
	FINAL TOTAL	-16.59780*	1.01214	0.000	-18.584	-14.6116
Final anatomy	FINAL TOTAL	0.42615	1.01214	0.674	-1.56	2.4123

*. The mean difference is significant at the 0.05 level.

Table 3: showing questionnaire for with students' responses

	Question	0 (no affect)	1-(moderate affect)	2- (significant affect)
1	Stress due to adjustment to the new environment away from home	59 (35.75%)	76(46.06%)	30(18.18%)
2	Fear of ragging	80(48.48%)	70(42.42%)	15(9.09%)
3	I am from telugu medium unable understand the lectures	160(96.96%)	3(1.81%)	2(1.21%)
4	Unable to follow/prepare notes - from standard text books (lack of study material similar to inter education)	73(44.24%)	77 (46.66%)	15(9.09%)
5	Procrastination	68(41.21%)	60(36.36%)	37(22.42%)
6	Study hours under supervision needed	32(19.39%)	68(41.21%)	65(39.39%)
7	My mobile/ smart phone was a distraction from studies	52(31.51%)	68(41.21%)	45(27.27%)
8	I have personal problems not related to the college	107(64.84%)	46(27.87%)	12(7.27%)

Graph 1: Mean percentage of marks in various exams

the there is significant (p<0.000) change in the performance of the students. When mean differences were observed between the examination performances with ANOVA (Table 2), we found that there is significant alteration between the exam marks. No statistically significant change (p<0.674) is found between final anatomy and total final marks (all three subjects). The questionnaire answered by the student about various probable factors that influenced their decreased or altered performance was also presented in the table with percentages (Table 3).

Discussion

The present study on 167 student volunteers showed that they have a average 93.47% of marks in their intermediate/+2 examinations which is a very good performance. The descriptive analysis of marks revealed that their performance has significantly decreased (p<0.000) in the formative assessments in anatomy that is 1st and 2nd internal exams, summative assessments in anatomy that is 3rd internal

examination, marks in first year university examination in anatomy and total percentage of marks which includes three subjects. Higher marks scored in +2 are due to the fact that the residential colleges or corporate junior colleges provide the students with readymade notes in question and answer pattern, not only that they also conduct compulsory study hours under supervision and periodical examinations, which is the main reason for their good performance.

The data showed that the students performance was less in first two formative assessments in anatomy that is first and second internal (mean47.98 & 44.62% respectively) and it has improved to a mean of 53.40% by 3rd internal i.e. summative assessment. Further improvement is in university examination of anatomy 70.43% and total 70%(Figure 1). But even these are significantly less than what they have scored in the intermediate or +2. The ANOVA test for multiple comparison of dependable variable (performance- marks) showed that significance. (Table-2). One exception is comparison between final anatomy marks and total final marks (p< 0.674) where

the difference if statistically not significant, because their anatomy marks represent part of total marks and their performance in anatomy is on par with other two subjects. This type of altered performance was also observed by other researchers [3-7].

After establishing the fact that the students' academic performance in the first year has decreased when compared to the intermediate education, we analyzed the answers given by the students, which revealed that more than 64% (1-46.06% & 2-18.18%) indicated that staying away from home and its stress affected their performance. This finding is in support of research by Abita Sultana [7] and Shah [8]. Next response by the students was regarding ragging, 48.48% of them said that their academic performances were not at all affected by fear of ragging. Even though rest of the students said fear of ragging somehow affected them but actual incidents of ragging were not reported by any of them. Strict vigilance in the campus by the authorities and over all awareness regarding punishments and adverse affects of ragging among student community has reduced incidences of ragging and its impact on academic performance.

Many authors have studied the influence of language on students coming from non-English medium schools and they found that, these students performance was less when compared to others [5,9,10], but in our study only 1.3% of the students said they have significant problem with language. We do agree with their findings, but our findings are different because most of the students coming to the medical colleges were from English medium schools. For one of the other questions More than 50% (1- 46.66% and 2-9.09%) of them said they need study material which are easy to read, like the ones which are provided by the residential corporate junior colleges, which is not practically possible to provide such a thing in medical profession and should not be encouraged because a medical professional student must read standard text books to understand the subject in depth.

In the present study students said that procrastination attitude has affected their academics (moderately 1-36.36% and significantly 2- 22.42%). our study is in agreement with the author Nagesh[3]. Another interesting finding is that 68% (1-41.21%, 2-27.27%) of the students confessed that usage of mobile /smart phones to access social media and for games was a distraction from the studies and it significantly affected their academics.

In conclusion, our present study clearly shows that students' performance has considerably decreased after joining the medical profession. Keeping the above finding in mind, the medical teachers must help the students to overcome the stress related to fear of ragging and staying away from home. By conducting supervised study hours in the first year by the qualified faculty may help the student in understanding the subject thoroughly. Regular assessments can prevent procrastination in the studies by the students. The must be advised to avoid unnecessary usage of electronic gadgets to asses social media which significantly affecting their academic performance. These findings can help medical faculty in understanding the students actual capabilities and having sound knowledge about students strengths and weaknesses, the present as well as future students can be trained in a better and meaningful way.

Acknowledgements

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