Factors Affecting the Academic Performance of Dental Students

Ahmad Liaquat[1], Rabia Naseer[2], Sabeen Fazal[3], Muhammad Abbas[4], Hurria Shafi Kalyar[5], Irum Farheen[6], Fahad Masood Khan Lodhi[7]

1. *Associate Professor & Head, Department of Oral & Maxillofacial Surgery, Faryal Dental College, Lahore Pakistan*
Writeup, Final review

2. *Assistant Professor, Department of Oral & Maxillofacial Surgery, National University of Medical Sciences, City Pakistan*
Data collection, Final review

3. *Assistant Professor, Department of Oral Medicine, National University of Medical Sciences, City Pakistan*
Idea, Data collection, Final review

4. *Assistant Professor, Department of Plastic Surgery, University College of Medicine & Dentistry, University of Lahore, Lahore Pakistan*
Data collection, Writeup

5. *Demonstrator, Institute of Dentistry, CMH Lahore Medical College, Lahore Pakistan*
Writeup, Data analysis

6. *Demonstrator, Department of Oral Medicine, University College of Medicine & Dentistry, University of Lahore, Lahore Pakistan*
Data collection, Writeup

7. *Dental Surgeon, University College of Medicine & Dentistry, University of Lahore, Lahore Pakistan*
Data analysis, Final review

ABSTRACT

Background: Dental students face unique challenges that can impact their academic performance. Factors that affect their academic success can range from personal factors such as motivation and time management to external factors such as the learning environment and curriculum. Understanding these factors can help educators and students create strategies to improve academic performance. **Objective:** This study aims to identify factors that are crucial for dental students' academic performance in a dental school. **Study Design:** Cross-sectional study. **Settings:** University College of Medicine & Dentistry, University of Lahore, Lahore Pakistan. **Duration:** Two months from September 2021 to November 2021. **Methods:** In November 2021, a questionnaire-based study was conducted at the University College of Medicine and Dentistry. Only undergraduate dental students were selected, while postgraduates and demonstrators were excluded. **Results:** A total of 138 dental students of all four years were included in our study, consisting of 41.3% males and 58.7% females. The majority of surveyed students were single, 95.6%. Forty-five percent of high achievers were males, while 34% of males were low achievers. 55% of females were high achievers, and 66% of females were low achievers. **Conclusion:** Many factors crucial for the academic excellence of dental students were identified, such as limited use of social media, strong motivation for achieving higher goals, and isolated and conceptual study. However, new, more structured studies needed to reinforce these factors, as academic excellence cannot be verified by only one study.

Keywords: Dental students' performance, Academic achievement, Reasons for performance.

INTRODUCTION

The academic excellence of dental students affects all medical educationists as it shows their general.[1-3] Average students may clear their exams without proper guidance. The foremost aim of education is to polish students' skills individually.[4,5] Many studies were conducted to identify the factors that affect (positively or negatively) student achievement.[6,7] Student characteristics, lifestyle, learning environments, socioeconomic status, studying abilities, studying methods, study orientation, and incentive for study affect academic excellence.[8]

Several factors are responsible for dental graduates' success. One of the most significant factors affecting academic outcomes is motivation.[9] Dental students who lack a strong sense of purpose or enthusiasm for their studies may struggle to remain engaged and focused.[10] Low motivation can also impact students' willingness to participate in class and complete assignments. To overcome this problem, dental schools should provide opportunities for students to connect with peers and mentors and recognize and reward academic success.[11]

This study was about highlighting factors affecting dental students' academic excellence.

METHODS

This Cross-sectional study was conducted at University College of Medicine & Dentistry, University of Lahore, Lahore Pakistan. Duration of the study was two months from September 2021 to November 2021 after the approval from the ethical review board via letter Ref. No. UCD/ERCA/21/162/23. One thirty-eight (138) University College of Dentistry dental students participated in the survey.

It consisted of a pre-validated questionnaire that was distributed by hand, and data were analyzed by SPSS software version 25.5. BDS students from the 1st to 4th year were included in the study. Postgraduate residents and demonstrators were excluded from this study.

A pre-validated questionnaires were distributed by hand. Two groups were allocated based on their marks obtained in the professional examination; in our study, the cut-off was kept at 60% above, which were high achievers, and below 60% were low achievers. This cut-off was set according to the traditional grade scale in which 60% is considered 1st division. A random selection of students who were available at that time was made. Data analysis was done by SPSS version 25. Mean & standard deviation were used for quantitative variables, while frequency and percentages were used for qualitative variables. The chi-square test is used, and a P-value <0.05 is considered statistically significant.

RESULTS

A total of 138 dental students at the University College of Dentistry of all four years were included in our study consisting of 41.3% males and 58.7% females.

The majority of surveyed students were single, 95.6%. 55% of females were high achievers, 66 % of females were low achievers, 45% of the high achievers were male, and 34% of males were low achievers.

Table 1: Profile of participants

Variables		High Scoring Students	Low Scoring Students	Total
Live with Family	Yes	62 (68.1%)	31 (65.6%)	93
	No	29	16	45
	Total	91	47	138
Household Chores	Yes	49 (53.8%)	22	71
	No	42	25 (53.1%)	67
	Total	91	47	138

Table 2: Life style social factors

Variables		High Scoring Students	Low Scoring Students	Total
No. of Hours Spent on TV/Movies/Music Per day	Less than 2 hours	40 (43.9%)	10	50
	3 to 4 hours	15	15 (31.9%)	30
	More than 4 hours	22	13	35
	Don't watch tv	14	9	23
	Total	91	47	138
Hours Spent on Social-Media	Less than 2 hours	32 (35.1%)	10	42
	3 to 4 hours	31	9	40
	More than 4 hours	21	23 (48.9%)	44
	Don't use it	7	5	12
	Total	91	47	138
Time Spent on Hobbies	Sometime per day	17	12	29
	Less than 3 times per week	26	13	39
	Sometime per month	14	8	22
	Don't have a hobby	34 (37.3%)	14 (29.7%)	48
	Total	91	47	138
Extracurricular Activities	Less than 5 hours per week	9	6	15
	At least 5 hours per week	9	9	18
	Participate in 1 to 2 events per year	28	15	43
	Don't spend time on them	45 (49.4%)	17 (36.1%)	62
	Total	91	47	138
Time spend with friends (Outside University Hours)	Spend time everyday	35 (38.4%)	18 (38.2%)	53
	Less than 3 times per week	19	11	30
	More than 3 times per week	21	15	36
	Do not meet friends	16	3	19
	Total	91	47	138

Table 3: Study habits

	Variables	High Scoring Students	Low Scoring Students	Total
No of Hours per Sleep	Less than 6 hours	15	6	21
	6 to 8 hours	45 (49.4%)	24 (51.0%)	69
	More than 8 hours	31	17	48
	Total	91	47	138
When I Study	Study alone	65 (91.5%)	31 (65.9%)	96
	With one of my friends	18	10	28
	Group study	8	6	14
	Total	91	47	138
Student Motivation Level	I enjoy study	30 (32.9%)	10	40
	I have always scored high	12	5	17
	Due to family pressure	18	14 (29.7%)	32
	Want to get a scholarship	9	8	17
	Don't feel motivated	22	10	32
	Total	91	47	138
Regarding English Proficiency	I speak fluent English	34	19	53
	Good enough to study and understand	52 (57.1%)	20 (42.5%)	72
	Deficient English	5	8	13
	Total	91	47	138
Number of Hours of Study per Day	Less than 2 hours	27	19 (40.4%)	46
	3 to 4 hours	13	8	21
	More than 4 hours	7	4	11
	I don't study daily	44 (48.3%)	16	60
	Total	91	47	138
Number of Hours of Study per Day	Less than 5 hours	35 (38.4%)	16	51
	5 to 7 hours	13	8	21
	More than 7 hours	9	2	11
	Don't study on weekends	34 (37.3%)	21 (44.6%)	55
	Total	91	47	138
Use Internet for Study Purpose	Yes	56 (61.5%)	34 (72.2%)	90
	No	35	13	48
	Total	91	47	138
Study Trough Handouts	Yes	48 (52.7%)	28 (59.5%)	76
	No	43	19	62
	Total	91	47	138
Study from Self Mode Notes	Yes	42	18	60
	No	49 (53.8%)	29 (61.7%)	78
	Total	91	47	138
Use of Books	Yes	88 (96.7%)	33 (70.2%)	121
	No	3	14	17
	Total	91	47	138
While Facing Difficulty in Studies	Seek help independently	38 (41.7%)	14	52
	Ask a colleague	37 (40.6%)	20 (42.5%)	57
	Ask a teacher	11	6	17
	Skip the topic	5	7	12
	Total	91	47	138
Highlighting Method	Yes	58 (63.7%)	27 (57.4%)	85
	No	33	20	53
	Total	91	47	138
Note Forming Method	Yes	50 (54.9%)	11	61
	No	41	36 (76.5%)	77
	Total	91	47	138
Reading Silently	Yes	66 (72.5%)	29 (61.7%)	95
	No	25	18	43
	Total	91	47	138
Reading Loudly	Yes	19	15	34
	No	72 (79.1%)	32 (68.0%)	104
	Total	91	47	138

		High Scoring	Low Scoring	Total
Other Means of Study (Videos)	Yes	45	12	81
	No	46 (50.5%)	35 (74.4%)	57
	Total	91	47	138
Summarizing Methods	Yes	8	14	22
	No	83 (91.2%)	33 (70.2%)	116
	Total	91	47	138
Study Through Recordings	Yes	10	15	25
	No	81 (89.0%)	32 (68.0%)	113
	Total	91	47	138
Reading then Memorizing	Yes	41	13	54
	No	50 (54.9%)	34 (72.3%)	84
	Total	91	47	138

Table 4: Examination preparation habit

Variables	High Scoring Students	Low Scoring Students	Total
One Month Before Exam	60 (65.9%)	20 (42.5%)	80
2-3 Weeks Before Exam	18	11	29
Few Days Before Exam	13	16	29
Total	91	47	138

DISCUSSION

Our study focuses on the factors affecting dental students' academic excellence.

Family-related factors such as family size, students living with the families, and financial status showed no significance, while other studies showed family influences affecting the student's performances.[12]

Our study found that most of the high-scoring students do not have a hobby, but a study conducted in Saudi Arabia in 2015 found no significant correlation between students' time spent on their personal hobbies or extracurricular activities with their academic performances.[13]

Our study found that most high scorers used social media for less than 2 hours while low achievers spent more than 4 hours on social networking, negatively affecting their academic performance; similar results were found in a study in India.[14] According to a King Abdul-Aziz University study, excellent medical students refrained from distractions such as social media, preferred isolated study, and had strong incentives for study.[15]

Our study suggested that family-related factors showed no significance, while other studies show that family-related factors were significant. Similar results were found in other studies, which showed that many high-scoring students enjoy studying. Study habits show that 69.5% of students prefer to study alone, while 22.3% preferred independent learning in a study from Turkey.[16]

Another study states that most students (53.4%) use the internet for 2-4 hours for study purposes, which was like our study.[17] Another study conducted in Saudia Arabia in 2021 studied the time spent on social media by medical students and its effects on academic performance. In their study, almost 75.21% of the students spent 5 to 10 hours on social media. This study showed a negative relationship between the time spent on social media and the academic performance of medical students.[17] Medical educationists are now emphasizing blended teaching, encouraging the use of social media to keep the students engaged. The problem with using social media is that students get distracted from the main task, wasting their time and getting exhausted. Studies have shown that female students are more distracted by social media while studying educational activities than male students.[18] In our institute, we have an integrated curriculum. We have included the directed self-learning time slot in the timetable to help and direct the students to the learning resources. It saves their time spent surfing, and they get less distracted on the internet. Other institutes may also provide links and resource materials to the students. This will decrease their browsing time and make them more focused.

CONCLUSION

Many factors crucial for the academic excellence of dental students were identified, such as limited use of social media, strong motivation for achieving higher goals, and isolated and conceptual study. However, having good hobbies and family-related factors were insignificant.

Excellent students were taking PBL sessions and preferred to study on weekends, too, along with multiple revisions and proper sleep before exams

LIMITATIONS

Our study's limitations include a single institute study, which led to a lack of comparison between different

dental colleges, a self-administered questionnaire, and a small sample size. To improve the results of this study, a more structured study with a large sample size should be conducted.

SUGGESTIONS / RECOMMENDATIONS

We recommend small group discussions and case-based learning in undergraduate studies. Lectures should be interactive and use multiple teaching strategies to engage the students.

CONFLICT OF INTEREST / DISCLOSURE

None.

ACKNOWLEDGEMENTS

REFERENCES

1. Luqman M. Relationship of academic success of medical students with motivation and pre-admission grades. J Coll Physicians Surg Pak. 2013 Jan 1;23(1):31-6.Shathele SM, Oommen A. Factors influencing the academic performance of the female medical students in preclinical and clinical years. Journal of Medicine and Medical Sciences. 2015 Aug;6(6):109-14.
2. Su P, He M. Relationship between sleep quality and subjective well-being: resilience as a mediator and belief in a just world as a moderator. Frontiers in Psychiatry. 2023 Dec 7;14:1297256.
3. DAS A, Bhattacharya S, Student MB, CHAKRABORTY A, Student MB. Seven factors affecting medical undergraduate students' performance in academics: a study using ron fry questionnaire in Eastern India. Journal of Advances in Medical Education & Professionalism. 2020 Oct;8(4):158.
4. Tahir M, Haiy AU, Tahir M, Kuraishi RT, Saqib S. Sleeping Habits among Medical Students of King Edward Medical University, Associated Stress and Effects on Academic Performance. Annals of King Edward Medical University. 2020 Sep 30;26(2):379-83.
5. Raghavani P, Rajput AS, Parchwani D, Vachhani U. Gender-wise Variation in Performance in Formative Assessment and Class Attendance in the Subject of Biochemistry in First-year MBBS Students. Indian Journal of Medical Biochemistry. 2020 Sep;24(3):93.
6. Al Shawwa L, Abulaban AA, Abulaban AA, Merdad A, Baghlaf S, Algethami A, Abu-Shanab J, Balkhoyor A. Factors potentially influencing academic performance among medical students. Advances in medical education and practice. 2015 Jan 29:65-75.
7. Cunanan EC. Predictors of first year medical school academic performance at University of Santo Tomas Faculty of Medicine and Surgery: a retrospective observational cohort study. South-East Asian Journal of Medical Education. 2020 Aug 25;14(1).
8. Harackiewicz JM, Smith JL, Priniski SJ. Interest matters: The importance of promoting interest in education. Policy insights from the behavioral and brain sciences. 2016 Oct;3(2):220-7.
9. Singh M, James PS, Paul H, Bolar K. Impact of cognitive-behavioral motivation on student engagement. Heliyon. 2022 Jul 1;8(7).
10. Khehra A, Steinberg N, Levin L. The role of educators, mentors, and motivation in shaping dental students to become life-long learners: A pan-Canadian survey. Journal of Dental Education. 2022 Oct;86(10):1369-81.
11. Li Z, Qiu Z. How does family background affect children's educational achievement? Evidence from Contemporary China. The Journal of Chinese Sociology. 2018 Dec;5(1):1-21.
12. Bakoban RA, Aljarallah SA. Extracurricular Activities and Their Effect on the Student's Grade Point Average: Statistical Study. Educational Research and Reviews. 2015 Oct 23;10(20):2737-44.
13. Kumwenda B, Cleland JA, Walker K, Lee AJ, Greatrix R. The relationship between school type and academic performance at medical school: a national, multi-cohort study. BMJ open. 2017 Aug 1;7(8):e016291.
14. Hayat MY, Bocus F. Effective Studying Habits of High Performing Medical Students: To What Degree Does It Influence Exam Performance? Advances in Medical Education and Practice. 2021 Jul 19:787-8.
15. Numan A, Hasan SS. Effect of Study Habits on Test Anxiety and Academic Achievement of Undergraduate Students. Journal of Research & Reflections in Education (JRRE). 2017 Jun 1;11(1).
16. Amponsah KD. The Impact of Internet Usage on Students' Success in Selected Senior High Schools in Cape Coast metropolis, Ghana. European Journal of Educational Sciences. 2022;9(2):1-8.
17. Naggar M, Alrasheedi A, Almutairi R, Alrwaily L, Alruwaili N, Alruwaili G, et al. Social Media Effects on the Academic Performance of Undergraduate Medical Students in KSA. Majmaah Journal of Health Sciences. 2024;12(1):41. Available from: https://www.ejmanager.com/mnstemps/176/176-1679996072.pdf?t=1726310139
18. Alshanqiti A, Alharbi OA, Ismaeel DM, Abuanq L. Social Media Usage and Academic Performance Among Medical Students in Medina, Saudi Arabia. Advances in Medical Education and Practice. 2023 Dec 31:1401-12.