



Original Research Study

Prevalence of Anemia and Its Causative Factors among Dental Undergraduate Students In A Dental College In South India

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Introduction

A healthy diet defines life in terms of sustainability and longevity. Nutrition forms an integral part of a healthy life style.¹without a nourishing diet, it is impossible to perform for an individual. It not only affects the physical status but simultaneously hinders the cognitive capacity of the person.²Literature reports that nutritional imbalance amongst the growing children is directly proportional to the mental growth, performance and scholastic development.³⁻⁵With lack of essential and timely nutrition especially to the brain, a stunted performance in terms of a quality care and professionalism can be expected in the field of health care. Fewer studies have reported the outcome of such an effect among the dental undergraduate students. Sareen et al reported that no correlation was present between the levels of hemoglobin and the performance among students in Udaipur, Rajasthan.⁶Another study among medical students in South India, showed that 43% had mild anemia, but this also failed to establish any co relation with their day to

day performance and reasons for the same.⁷ We report the study carried out in a dental college in South India, regarding anemia and its possible factors.

Material and Methods

Inclusion criteria- All students from I BDS till Interns were included in the study. Only those who agreed for answering a preformed questionnaire and ready to undergo a blood test to determine their Hb levels were enrolled in the study.

Exclusion criteria- Individuals who had recently donated blood (at least 3 months) and those who had undergone any surgical procedures were excluded. Those who refused to provide a voluntary consent were not included in the study.

No special blood was drawn from the students for this purpose. The reports of a drive to test blood group and Hb levels of all the students was obtained from the medical hospital and those students were contacted for filling up of the questionnaires. The students were assured that their refusal to participate will not affect their

academic results and confidentiality will be maintained. Also no incentives were provided.

Results

A total of 400 students were involved in the study, of which 230 were females and 170 were males.

Table 1 shows the distribution of the average Hb levels across the participants based on their gender and year of study:

Table:1 Distribution of average Hb levels

Year of study	Male	Female
I BDS	12.27±1.84	10.87±1.3
II BDS	12.3±1.81	10.87±1.0
III BDS	12.60±1.54	11.34±2.0
IV BDS	11.26±2.36	10.0±1.80
Internship	14.23±1.98	12.67±1.80

As per the WHO guidelines, among the 230 girls, 97(42.2%) had mild anemia and 10(4.3%) had severe anemia. Among the 170 boys, 22(12.9%) had moderate anemia and 50(29.4%) had mild

anemia. No cases of severe anemia were reported amongst the boys. Table 02 shows the percentage of eating patterns amongst the study participants.

Table: 2. Percentage of eating patterns

Year of study	Male				Female			
	Breakfast	Lunch	Snacks	Dinner	Breakfast	Lunch	Snacks	Dinner
I BDS	78	100	67	100	56	89	70	54
II BDS	78	100	65	100	60	84	80	44
III BDS	80	100	76	100	78	93	100	69
IV BDS	76	94	90	100	44	56	89	90
Internship	100	100	100	100	100	100	100	100

Table:3 Percentage of reasons for skipping any time of the food

Reason	Male				Female			
	I BDS	II BDS	III BDS	IV BDS	I BDS	II BDS	III BDS	IV BDS
Time	33.6	80	70.0	46.7	40.0	42.7	76.4	56.9
Stress	30.0	12.7	27.3	50.4	28.0	20.0	20.0	35.5
Bad food	2.0	3.0	0.0	00	0.0	0.0	0.0	0.9
Home sickness	25.0	1.8	0.1	0.90	28.6	1.9	1.0	0.9
Dieting	0.0	0.0	1.2	0.0	0.4	0.7	0.9	1.4
Inability to adjust to the food outside home	5.8	2.0	0.0	0.0	3.0	4.0	1.3	1.6
More than one reason	3.6	0.5	1.4	04.0	0.0	0.0	0.4	2.8

A higher percentage of females showed tendency to skip their food at regular time compared to the males. Majority of the reason for this was lack of time factor and also the amount of stress involved during their course of study. The final year students showed the maximum amount of stress followed by the first BDS students. Maximum of the stress was seen amongst girls in IV BDS. No statistically significant difference was seen in terms of inter and intra group comparison. A

higher percentage of lack of time factor was significant with the skipping of meals among the students (especially the girls) (p<0.005).

Discussion

Health is a multidimensional entity with an equal emphasis on both physical and social well being. The present study focused on the dental undergraduate students. Dental curriculum is more clinical oriented with the students actually

expected to perform procedures and a set target to be achieved. So there is a daunting task of completion of both the learning and the performing procedures at the same time. Unlike the other branches, a final year student takes up 7 subjects in all of which need a great deal of efforts to imbibe. We found that more girls had anemia compared to boys, but it was much lesser compared to the studies carried out by Subramaniyan et al in Chennai⁷ and Panth et al in Maharashtra,⁸ even though the subject group was different. Manjula and associates reported that a higher percentage of anemia was prevalent among the hostel dwellers than the localities.⁹ We could not establish the influence of such factors in our study. We dwelled more into the possible factors of anemia, one being lack of food. The students reported of skipping of their meals at the stipulated time, except for the interns group. This is the most important factor contributing to anemia. The major contributing factors to this were the lack of time and stress involved. Most of the time, the rat race and the compulsion to achieve the quota to fulfill eligibility to appear for the university exams and also to keep an eye out for special cases could be the reason. This is the first study of its kind to highlight this pattern emerging amongst the dental students. While home sickness was also one factor, but it reduced among the students as their time in the college increased. Also peer pressure and the fear of failing in the exam due to underperformance probably was the main reason in these students being anemic. In case of female candidates, menstrual flow could also be a reason for being anemic and it was found to be a predictor of anemia in a multivariate analysis by Manjula et al.⁹ Anemia and lack of performance in any field go hand in hand. Further studies need to be carried out to determine the association between the two. We also found that significantly the lack of time and stress was co related to the student not eating the meals and more bothered about their work completion. Since no studies have highlighted this basic point, a direct comparison cannot be made.

Overlooking such basic things has been the major factors in a stunting of the cognitive as well as physical growth of the individuals with long lasting effects. The work out put decreases easily over a period of time and also a resultant burnout. We did not find these factors prevailing among the interns, possibly because of no exams in internship and the absence of any highly set target fulfillment for their internship completion.

Conclusion

This study thus highlights the possibility of stress and lack of time, leading to undernourishment and resultant anemia among the dental undergraduate students. Studies are needed to probe, if this attitude of skipping meals could be a contributing factor to both physical and mental underperformance among these students. Also this calls for a need to review the current system of academic pattern and the need to be more earning friendly environment than a mere target fulfillment, where the degree is not obtained at the behest of compromised health and sanity of an individual.

Future Scope

A more detailed analysis of association between meal intake and cognitive performance needs to be done. Though there are certain studies highlighting this factor, still a highly sensitive tool needs to be developed that can be used to assess the mental effects of malnourishment induced anemia among these dental undergraduate students.

Interest of conflict-None

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