



SURVEY ON HOW TO APPROACH DIFFERENT BASIC SCIENCE SUBJECTS FOR PREPARATION OF EXAMS IN DENTISTRY

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Abstract:

Background and aim: A goal of dental education is to enhance the ability of students to think critically and form their own opinions. A related trend in dental education is the desire to increase student exposure to the concepts and approaches on basic science subjects. The present study aims to evaluate how to approach different basic science subjects for preparations of exams in dentistry.

Materials and methods: A questionnaire-based survey was conducted among 100 selected populations of random selection, the responses were collected in 'google forms' and the values were estimated in SPSS version [22.0].

Results: The distribution of factors affecting exam preparations where 29.49% of the participants responded to Unable to recall and review, 25.64% of the participants responded to fear of failure, 39.74% of the participants responded to lack of time before the exam and 5.13% of the participants responded to dietary habits. The majority of both UG and PG students responded to lack of time before the exam. There was no significant difference between the year of study and the preference of study material. Pearson chi-square test- 0.956 , P-value = 0.913 [>0.05] - statistically not significant

Conclusion: Results obtained from this study show the awareness on how to approach the different basic science subjects for the preparation of exams in dentistry among the study population was very satisfactory.

Keywords: Exam preparation, basic science, dentistry, innovative technique.

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1. Introduction

A goal of dental education is to reinforce the power of scholars to think critically and form their own opinions of the present dental research literature. Critical thinking is defined as a purposeful, self-regulatory judgment which ends up in interpretation, analysis, evaluation, and inference, also as an explanation of the evidential, conceptual, methodological, soteriological, or contextual considerations upon which that judgment is predicated on the way to approach on each basic science subjects(1),(2). Anxiety among dental students is a problem of major concern for dental educators. The school of dentistry curriculum and atmosphere are known to be highly challenging, with demanding learning conditions. A recent study by Turner et al showed that fifth-year dental students reported greater anxiety than first-year dental students(3),(4). The study also found non-course-related sources of stress, including problems, family tasks, money problems, social issues, and preparation for examinations might contribute to the difficulty. The very best pressure-provoking influences are identified as examinations and grades, workload, patient care, and graduation requirements. Some dental students stated that they felt unsettled by their experience in the school of dentistry, to the purpose that their physical and mental wellbeing was adversely affected(5),(6). Although there's a body of research into the explanations behind stress-related issues among dental students, there has been relatively little scholarly attention paid to certain subjects, like anatomy, physiology, and far more which impose enormous demands on students during their undergraduate dental degree study. Moreover, it's been reported that students are sometimes unable to recall basic scientific concepts associated with clinical fields. To overcome these quiet problems several studies like Howard et al in his study a related trend in dental education is that the desire to extend student exposure to the concepts and practices of evidence-based dentistry [EBD]. EBD is defined because of the use of the present research project in dentistry as the basis for clinical treatment planning. To practice EBD, students got to develop the talents needed to critically evaluate the research literature [(7). Students have to become confident in their ability to discern the difference in the value of conflicting research studies and to formulate best practices based upon their evaluation(8),(9). Additionally, and most importantly, a study by Kay and Lowe determined that teaching stress-management skills and

individual alertness need to be included within the dental curriculum. A tense educational setting is often evaluated by a private as either challenging or threatening(10,11). Being presented with challenges can enhance wisdom capability and increase a student's capacity to review(12). However, if schooling is perceived as a threat, it can elicit feelings of weakness which will affect the entire experience. Our team has extensive knowledge and research experience that has translate into high quality publications (13–22)) This study aimed to assess the way to approach different basic science subjects for preparations of exams in dentistry.

2. Materials and Methods

Study design:

A cross-sectional study was conducted through an online survey on how to approach different basic science subjects for exam preparations from February to April 2021 among dental practitioners and specialist

Study subjects:

A simple random sampling was used to select the study participants.

Inclusion criteria: All the dental students who were willing to participate were included.

Ethical considerations:

Returning the filled questionnaire was considered as implicit consent as a part of the survey. Ethical approval for the study was obtained from the Institutional Review Board [IRB], Saveetha Dental College.

Study methods:

A self-administered questionnaire of close-ended questions was prepared and it was distributed among dental students from February to April 2021 through the online survey "google forms". The collected data were checked regularly for clarity, competence, consistency, accuracy, and validity. Demographic details were also included in the questionnaire.

Statistical analysis:

Data was analyzed with SPSS version [22.0]. Descriptive statistics as percent were calculated to summarise qualitative data. Chi-square test was used to analyze and The confidence level was 95% and of statistical significance $P < 0.05$. Finally, the result was presented by using bar charts, pie charts, and percentage tables.

TABLE 1: Percentage distribution of knowledge and awareness on how to approach basic science subjects for exam preparations.

S. No	PARAMETERS	DATA ANALYSED	PERCENTAGE RESPONSES
1	AGE	<ul style="list-style-type: none"> • 17 to 20 years • Above 20 years 	<ul style="list-style-type: none"> • 70.5% • 29.5%
2	YEAR OF STUDY	<ul style="list-style-type: none"> • UG • PG 	<ul style="list-style-type: none"> • 64% • 36%
3	GENDER	<ul style="list-style-type: none"> • MALE • FEMALE 	<ul style="list-style-type: none"> • 49% • 51%
4	PREFERABLE EXAM PREPARATION METHOD	<ul style="list-style-type: none"> • INDIVIDUAL STUDY TECHNIQUES • GROUP STUDIES • NOTES MAKING • OTHERS 	<ul style="list-style-type: none"> • 37% • 22% • 36% • 5%
5	PREFERABLE STUDY MATERIAL	<ul style="list-style-type: none"> • BORROWING NOTES FROM OTHER UNIVERSITY STUDENTS • BORROWING NOTES FROM PROFESSORS • SHARING THE NOTES FROM FRIENDS • STUDYING ON OWN NOTES 	<ul style="list-style-type: none"> • 21% • 37% • 28% • 15%
6	FACTORS AFFECTING EXAM PREPARATIONS	<ul style="list-style-type: none"> • DIETARY HABITS • FEAR OF FAILURE • LACK OF TIME BEFORE EXAM • UNABLE TO RECALL AND REVIEW 	<ul style="list-style-type: none"> • 5% • 26% • 40% • 29%
7	LACK OF ENGLISH KNOWLEDGE	<ul style="list-style-type: none"> • STRONGLY AGREE • STRONGLY DISAGREE 	<ul style="list-style-type: none"> • 46% • 54%
8	GENERAL PATTERN	<ul style="list-style-type: none"> • STRONGLY AGREE • STRONGLY DISAGREE 	<ul style="list-style-type: none"> • 47% • 53%
9	FACTORS AFFECTING FROM CONCERNS	<ul style="list-style-type: none"> • FEAR OF FAILURE • LACK OF CONFIDENCE • TIME OF EXAM 	<ul style="list-style-type: none"> • 46% • 15% • 39%
10	USEFULNESS OF THIS SURVEY	<ul style="list-style-type: none"> • YES • NO 	<ul style="list-style-type: none"> • 94% • 6%

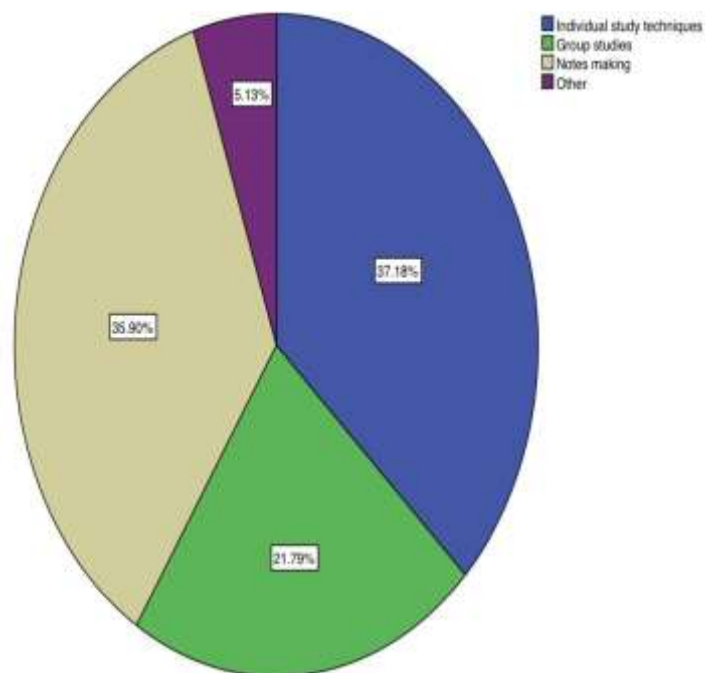


Fig 1: pie chart representing the distribution of preferable exam preparation methods where green denotes 21.79% of the participants preferred group studies, blue denotes 37.18% of participants preferred individual studies, peach 35.90% participants preferred notes making and violet denotes 5.13% of the participants preferred other techniques

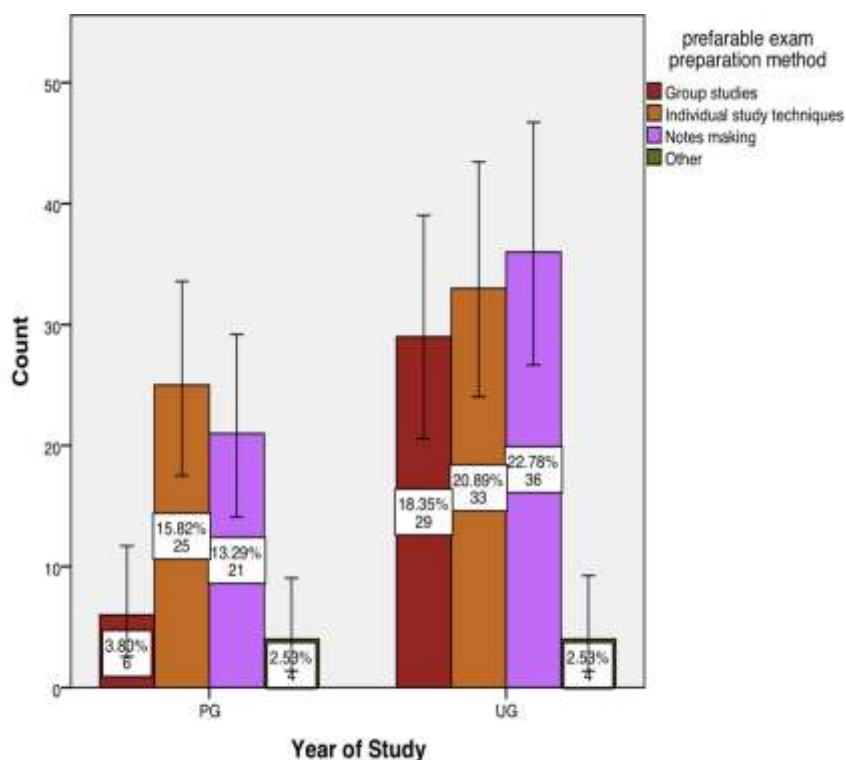


Figure 2: Bar graph representing the association of year of study and preference of exam preparation method. The X-axis represents the year of study and the Y-axis represents the number of participants who responded, maroon color denotes group studies, the brown color denotes individual study techniques, the purple color denotes notes making and the olive green color denotes others. The majority of UG students prefer note-making and the majority of PG students prefer individual study techniques. There was a significant difference between the year of study and preference of exam preparation method. Pearson chi-square test 6.984, P-value = 0.072 [<0.05] - statistically significant

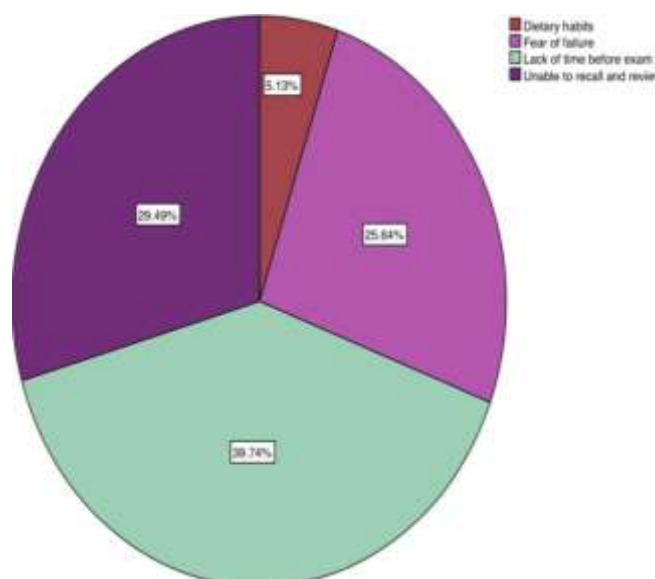


Fig 3: Pie chart representing the distribution of Participants preferred study material where, apple green colour denotes 36.54% of the participants responded to Borrowing notes from professors, iris blue colour denotes 21.15% of the participants responded to Borrowing notes from other university students and cedar brown colour denotes 14.74% of the participants responded to Studying our notes. Latte sandal colour denotes 27.56% of the participants responded sharing the notes or borrowing it from your friends.

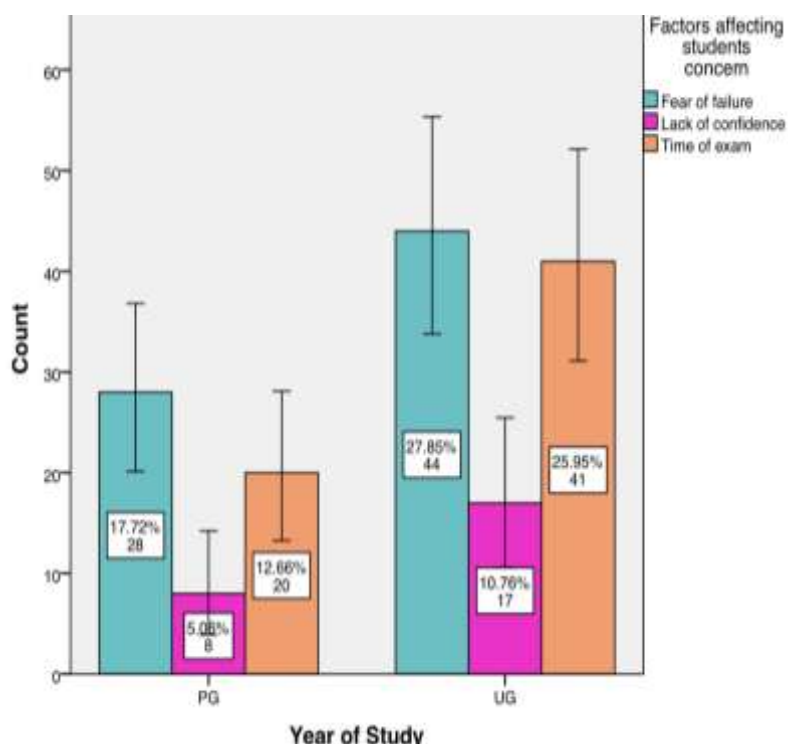


Figure 4: Bar graph representing the association of year of study and preference of study material. The X-axis represents the year of study and the Y-axis represents the number of participants who responded, blue color denotes borrowing notes from other students, apple green v color denotes borrowing notes from professors, sky blue color denotes borrowing notes from friends and brown color denotes studying our notes. The majority of both UG and PG students prefer borrowing notes from professors. There was no significant difference between the year of study and the preference of study material. Pearson chi-square test- 4.945, P-value = 0.176 [>0.05] - statistically not significant.

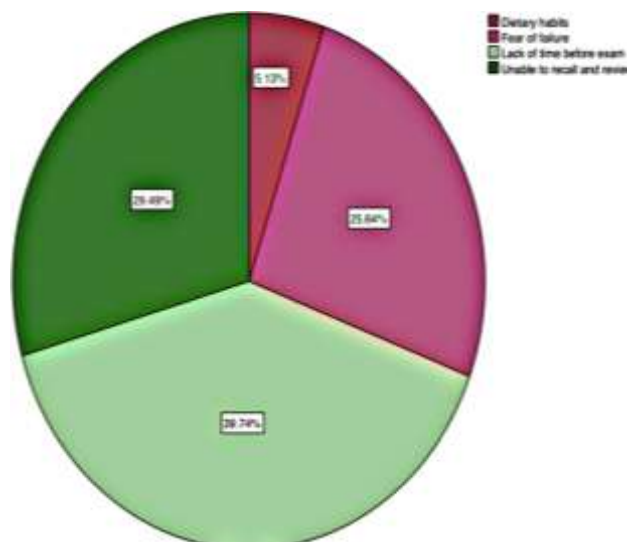


Fig5:Pie chart representing the distribution of factors affecting exam preparations where dark green colour denotes 29.49% of the participants responded to Unable to recall and review, peach colour denotes 25.64% of the participants responded to fear of failure, pantone green colour denotes 39.74% of the participants responded to lack of time before the exam and scarlet red colour denotes 5.13% of the participants responded to dietary habits.

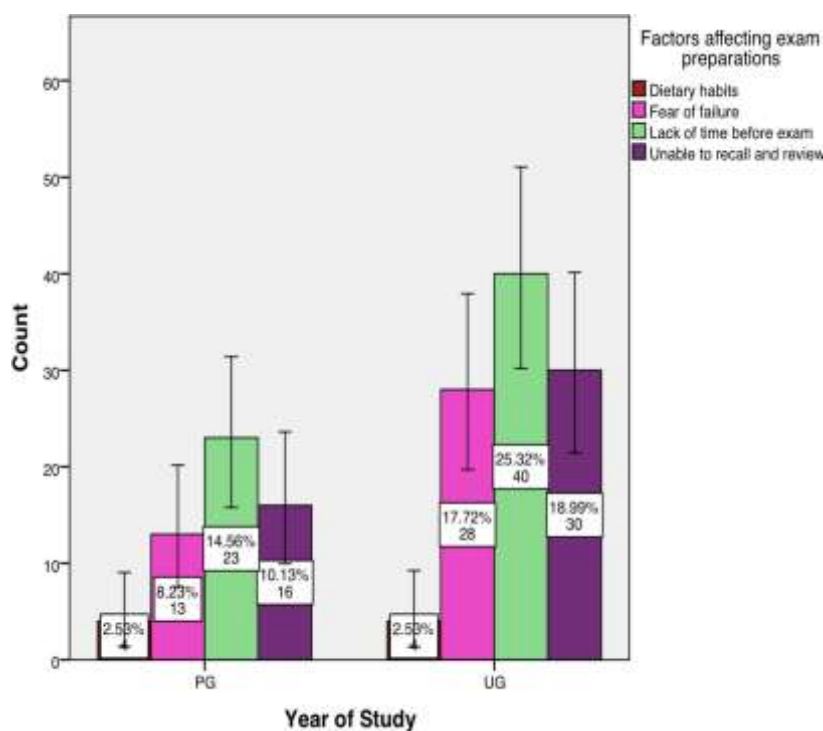


Figure 6: Bar graph representing the association of year of study and factors affecting exam preparation. The X-axis represents the year of study and the Y-axis represents the number of participants who responded, scarlet red color denotes dietary habits, peach color denotes fear of failure, the pantone green color denotes lack of time before exam and dark green color denotes unable to recall and review. The majority of both UG and PG students responded to lack of time before the exam. There was no significant difference between the year of study and the preference of study material. Pearson chi-square test- 0.956, P-value = 0.913 [>0.05] - statistically not significant

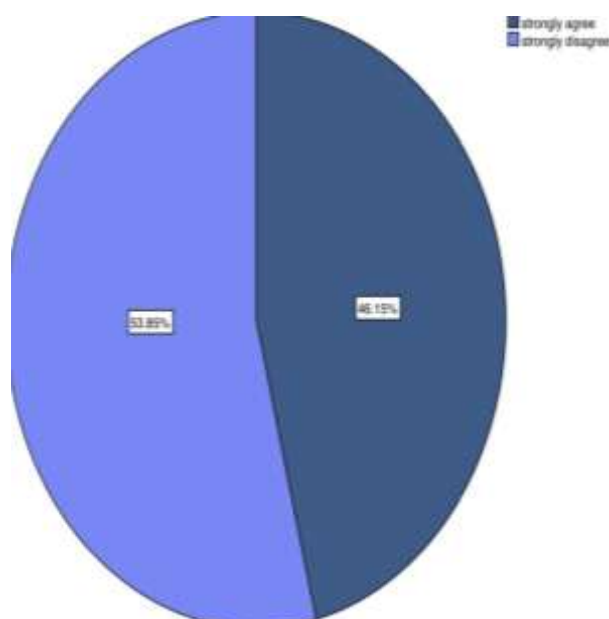


Fig7:Pie chart representing the distribution of participants' lack of English knowledge where azure blue denotes 53.85% of the participants strongly disagreed that lack of English knowledge proficiency affects the exam preparations whereas colouraegean blue color 46.15% of the participants strongly agreed that lack of English knowledge proficiency affects the exam preparations.

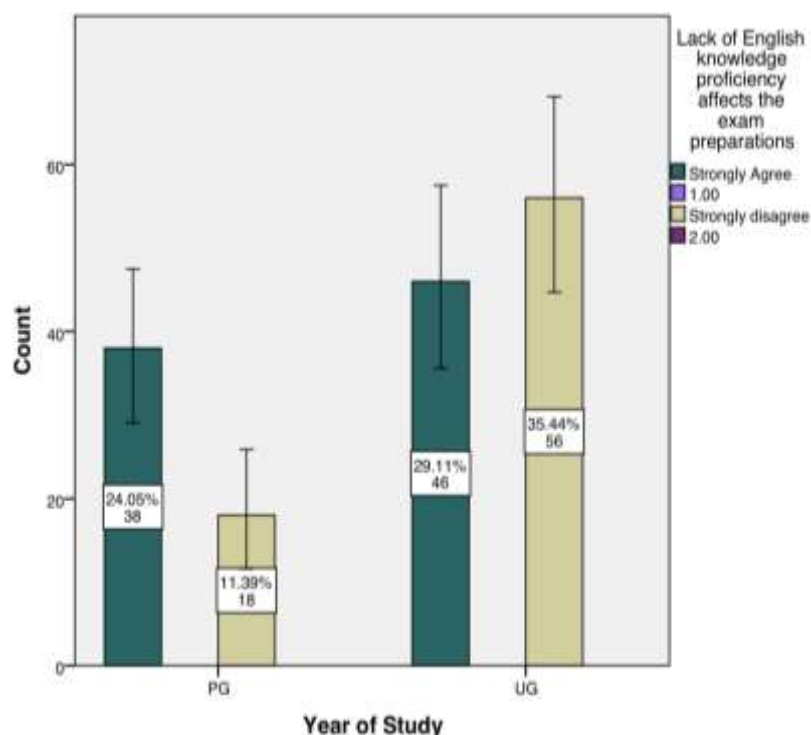


Figure8: Bar graph representing the association of year of study and lack of English knowledge proficiency affects the exam preparations. The X-axis represents the year of study and the Y-axis represents the number of participants who responded, aegean blue color strongly agrees , azure blue color strongly disagrees. Majority of both UG and PG strongly disagreed . There was a significant difference between the year of study and lack of English knowledge proficiency affects the exam preparations . Pearson chi-square test-6.901 , P-value = 0.009 [<0.05] - statistically significant

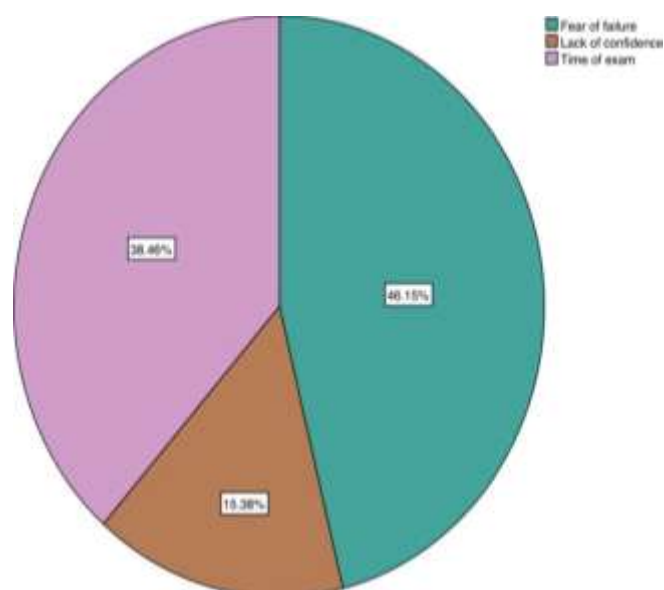


Fig9: Pie chart Representing the distribution of factors affecting the student concerns where purple colour denotes 38.46% of the participants responded to time of the exam, turquoise blue denotes 46.15% of the participants responded to fear of failure and brown denotes 15.38% of the participants responded to lack of confidence.

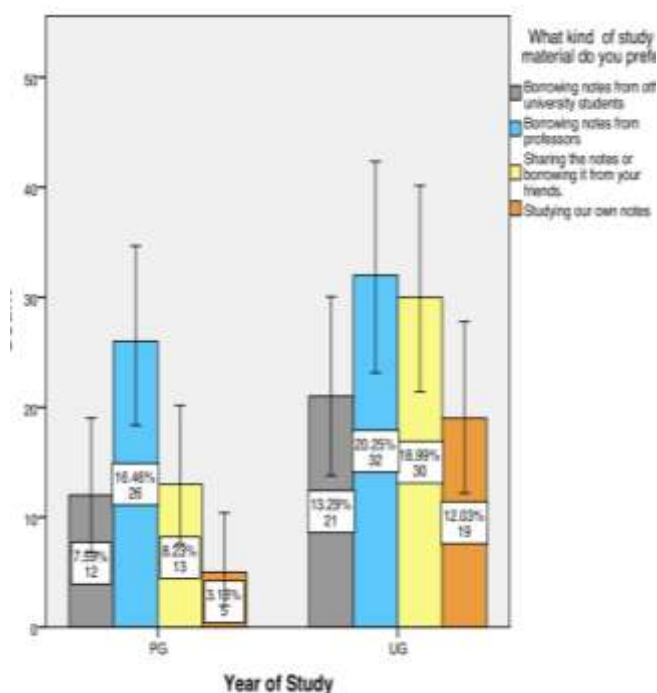


Figure 10: Bar graph representing the association of year of study and factors affecting student concerns. X axis represents the year of study and Y axis represents the number of participants responded, turquoise blue denotes fear of failure, purple colour denotes lack of confidence and brown denotes time of exam. Majority of both UG and PG strongly disagreed. There was no significant difference between the year of study and factors affecting student concerns. Pearson chi square test- 0.520, P value = 0.771 [<0.05] - statistically not significant.

3. Results and Discussion

In the present study, 70.51% of the participants belong to the age group 17 to 20 years and 29.49% of the participants belong to the age group above 20 years [Table 1]. About 50.64% of the participants were female and 49.36% of the participants were male [Table 1]. About 64.10% of the participants belonged to the UG category and 35.90% of the participants belonged to the PG category [Table 1]. About 21.79% of the participants preferred group studies, 37.18% participants preferred individual studies, 35.90% participants preferred note-making and the remaining 5.13% of the participants preferred other techniques [Fig 1]. (23) in his study, The students' attitude towards the effectiveness of small conferences was 66%. When small group teaching works, it allows students to discuss/negotiate meanings, express themselves within the language of the topic, and establish closer contact with the lecturer. It also improves the skills of listening, presenting ideas, persuading, and dealing as a neighborhood of a team to the students. The worth of effective group management in professional development and lifelong learning can't be underestimated. The majority of UG students prefer note-making and the majority of PG students prefer individual study techniques. There was a significant difference between the year of study and preference of exam preparation method. Pearson chi-square test-, P-value = 0.000 [<0.05] - statistically significant [Fig 2]. Regarding the kind of study material, About 27.56% of the participants responded to Sharing the notes or borrowing them from their friends, 36.54% of the participants responded to Borrowing notes from professors, 21.15% of the participants responded to Borrowing notes from other university students and 14.74% of the participants responded to Studying our notes [Fig 3]. A study by (24) reported that The students' attitude towards the effectiveness of problem-based learning was 70% The students' attitude towards the effectiveness of learning with video shows was 75%. Video shows are the combination of audio and visual aids [watching the steps to perform] and listening too. It is good for clinical teaching in the larger groups as well as the smaller groups by using films of patients with different clinical presentations. It is useful for teaching communication skills and practical skills to the students and the students can keep films for self-appraisal. The majority of both UG and PG students prefer borrowing notes from professors. There was a significant difference between the year of study and the preference of study material. Pearson chi-square test-, P-value = 0.000 [<0.05] - statistically significant [Fig 4]. Nearly 29.49% of the participants responded to Unable to recall and review, 25.64% of the participants responded to fear of failure, 39.74% of the participants

responded to lack of time before the exam and 5.13% of the participants responded to dietary habits [Fig 5]. A study by (1) reported that dental students expressed a fear of failure and examination grading. In this study, there was a more specific focus on exploring anxiety factors that students face regarding basic science examinations, in particular among undergraduate dental students, including both male and female students. Variables like gender, course type [basic science], and exam type [quiz and mid-term] contributed to the list of major anxiety issues among the students. The majority of both UG and PG students prefer borrowing notes from professors. There was a significant difference between the year of study and the preference of study material. Pearson chi-square test-, P-value = 0.000 [<0.05] - statistically significant [Fig 6]. About 53.85% of the participants strongly disagreed that lack of English knowledge proficiency affects the exam preparations whereas 46.15% of the participants strongly agreed that lack of English knowledge proficiency affects the exam preparations [Fig 7]. (25) the study states students lack English foundation background and lack the confidence to use English because they are afraid of mistakes and shy feelings and the curriculum is inappropriate for helping students to improve their English proficiency. Last but not least, the English language is difficult to learn due to students not well-motivated, encouraged and gained learning strategies. Furthermore, students don't practice speaking English with English native speakers. The majority of both UG and PG students prefer borrowing notes from professors. There was a significant difference between the year of study and the preference of study material. Pearson chi-square test-, P-value = 0.000 [<0.05] - statistically significant [Fig 8]. About 52.56% of the participants strongly disagreed that gender can affect the pattern of memorizing the text without understanding whereas 47.44% of the participants strongly agreed that gender can affect the pattern of memorizing the text without understanding. [Fig 9] Pie chart Representing the distribution of factors affecting the student concerns where Peach denotes 38.46% of the participants responded to time of the exam, blue denotes 46.15% of the participants responded to fear of failure and green denotes 15.38% of the participants responded to lack of confidence. [Figure 10] Bar graph representing the association of year of study and factors affecting student concerns. X axis represents the year of study and Y axis represents the number of participants responded, blue colour denotes fear of failure, green colour denotes lack of confidence and sandal colour denotes time of exam. Majority of both UG and PG strongly disagreed. There was no significant difference between the year of study and factors affecting student concerns. Pearson chi

square test- 0.520 , P value = 0.771 [<0.05] - statistically not significant.

[Table 1](26),(27) in his study Strategic studying and time management issues revealed significant gender differences. Female dental students reported significantly more than male students that they were unable to get adequate rest or to recall and prepare the study materials effectively, before the exam. Similar results have recently been reported about fifth-year female medical students. On the opposite hand, male students were more concerned about other issues, like a scarcity of guidance from the school, distraction from mobile phones, English skill proficiency, and having to memorize text without understanding it. These were reported to be significant factors in connection to academic performance. Regarding the factors affecting students' concerns in basic science examinations according to assessment type, nearly 38.46% of the participants responded to the time of the exam, 46.15% of the participants responded to fear of failure and 15.38% of the participants responded to lack of confidence[Fig 9]. Greenhalgh J. in his study Additionally, certain factors were identified by the students as hindrances while preparing for their exams. Distractions including mobile phones and browsing the internet were found to be major hindrances. Among the male students, 63.5% reported being distracted from their studies by their use of electronic devices which closely correlates with our present study findings. About 94.23% of the participants felt that the survey was useful. From the results obtained, In the present study The students expressed beliefs about four aspects of exam preparation: [a] motivations to study for exams, [b] strategies for exam preparation, [c] affect about exam preparation, and [d] effects of external factors on a study [e.g., instructors, previous exam experiences, social environment, physical environment, and content that is to be studied]. Time to time analytical study should be carried out to determine the cause and factors related to stress. The curricula of the dental college, as well as examination patterns, should be amended and improved to overcome much stress. The present study is novel, hence there are no existing previous studies. The limitation of the study is less sample size. In the future, an extensive study with a large sample size and varied population can be used to assess the knowledge and awareness on how to approach basic science subjects for exam preparations.

4. Conclusion

Psychological health enables students to recognize their capacities and to maintain a resemblance of control over the ordinary pressures of learning. Exam apprehension refers to a profound phase of fright and apprehension before, during, or after

assessment settings, mostly in an academic environment. Results obtained from the present study were compared with the year of study and surprisingly the results obtained from this study showed the awareness on how to approach the different basic science subjects for the preparation of exams in dentistry among the study population was very satisfactory. In the future, an extensive study with large sample size and varied population can be used to assess the knowledge and awareness on how to approach basic science subjects for exam preparations.

AUTHOR CONTRIBUTIONS

Author 1 [Monesh babu J D], carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis.

Author 2[Dr.M P Brundha] aided in the conception of the topic, has participated in the study design, statistical analysis, and has supervised the preparation of the manuscript. Also have participated in the study design and have coordinated in developing the manuscript. All the other authors have contributed to manuscript revision.

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CONFLICT OF INTEREST

The authors would like to declare no conflict of interest in the present study.

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