Original Research Article

PREVALENCE OF FATIGABILITY IN UNDERGRADUATE DENTAL STUDENTS: A SURVEY

Running title: Survey on fatigability in dental students.

ABSTRACT:

Introduction:

High levels of stress and fatigue are associated with decreased academic success, well-being, and quality of life. The objective of this research was to quantify levels of perceived stress and fatigue among dental students to identify sources of and student coping mechanisms for perceived stress and fatigue and to identify the relationship between students' perceived stress and fatigue.

Materials and method:

A total of 102 responses were tabulated and analyzed using statistical analysis. This study was conducted to acknowledge the effect of stress and fatigability and the different ways it affects the health of dental students.The obtained data was collected and tabulated in google sheets, analyzed statistically with descriptive statistics using SPSS software version 23.

Results:

Respondents have faced a feeling of fatigue in their working environment and some have experienced visual fatigue due to excessive screen time.

Conclusion:

The survey concludes that respondents have moderate awareness about the prevalence of fatigability in dental students.

KEYWORDS: Fatigue, social life, frustration, innovative technique, exhaustion

INTRODUCTION:

Greater levels of stress and fatigue are related to depression and anxiety, reduced academic success hence decreased psychological and physical well-being, and a diminished quality of life. While it is common to identify both stress and fatigue as factors that together create negative effects, they are distinct psychological entities (1). Henceforth, stress affects fatigue, which can affect one's perception of stress. Therefore, it is important to identify the relationships between stress and fatigue to better understand their effects on health, attitudes, and performance (2). Various studies have examined how students experience stress in professional health education. As these students will become future health care providers, institutions need to teach them how to cope with stress themselves, as well as how to treat stress in their future patients (3). Medical, nursing, dental, pharmacy, occupational therapy, and physical therapy students have reported high levels of perceived stress (4). Student stress often stems from the academic load, classroom environment, faculty interaction, illness, and emotional concerns outside of the classroom or clinic (5,6). Until recently, the literature on stress experienced by students in complementary and alternative medicine (CAM) has been scarce, but a recent study (4) among chiropractic students indicated that students in their 4th year of the doctoral study reported the highest levels of stress. At the constant time, information from a study by Kizhakkeveettil et al.12 that uses the validated perceived stress scale (PSS-10) suggests that stress levels were not statistically completely different across terms (7).

Fatigue is another vital issue to spot in professional person education because it can also affect student learning. Among nursing students, fatigue was reportedly moderate/intense for 83.5% of students, and 59.8% reported moderate/intense impairment from fatigue in their habitual activities. Tanaka et al. polled medical students and reported fatigue was prevalent in 16.5% of healthy individuals. In these individuals, school attendance, pleasure in school and learning, and lecture understanding were all negatively related to the prevalence of fatigue (8). Our team has extensive knowledge and research experience that has translate into high quality publications (9).(10–23) ,(24–28) This study aims to analyze the prevalence of fatigability among undergraduate dental students.

MATERIALS AND METHOD:

This was a prospective observational study. A structured questionnaire was used to record the responses of participants. It was prepared to assess the effect of fatigability and its impact on UG dental students. There were a total of 102 undergraduate dental students involved in this survey. Internal validity was accessed by the principal investigator and guide, whereas external validity was done by a clinician expert. The independent variable of the survey was age and gender whereas dependent variables were etiology of the prevalence of fatigability. The advantages of this study were economical, easy to create, wide reach gathers large data, and quick interpretation. A total of 15 questions were framed and administered through google forms on an online platform. The study was conducted in February 2021 and involved responses from dental students. The obtained data was collected and tabulated in google sheets, analyzed statistically with descriptive statistics using SPSS software version 23.

RESULT & DISCUSSION:

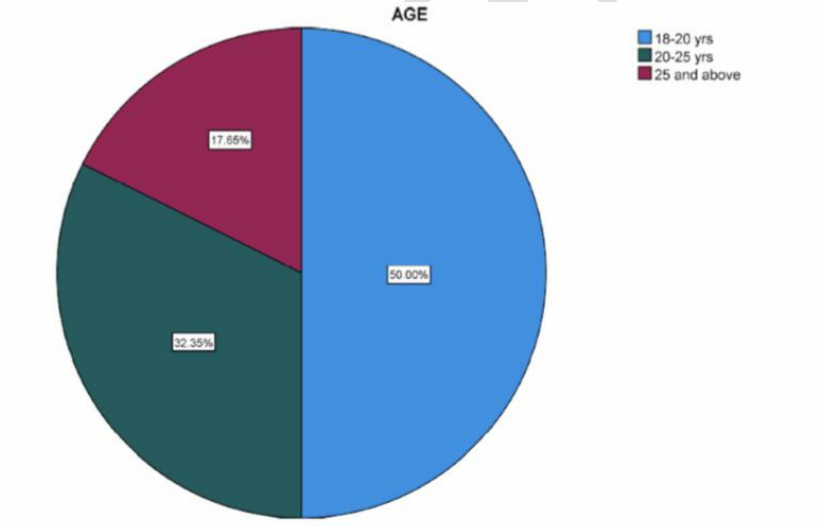

Figure 1: Pie chart representing the different age groups of the respondents. Blue color denotes the age group of 18-20 years (50%), green denotes 20 to 25 years (32.4%) and pink denotes 25 and above years (17.6%).

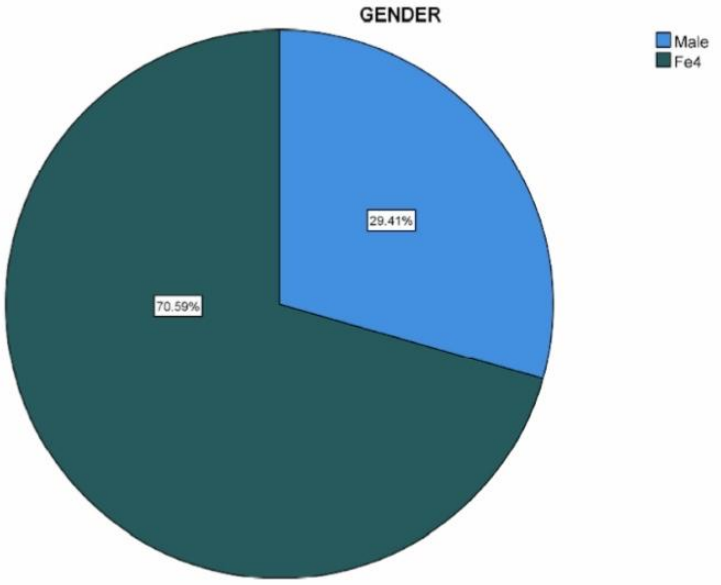

Figure 2: Pie chart represents the gender category where green color denotes female (70.6%) and blue color denotes male (29.4%).

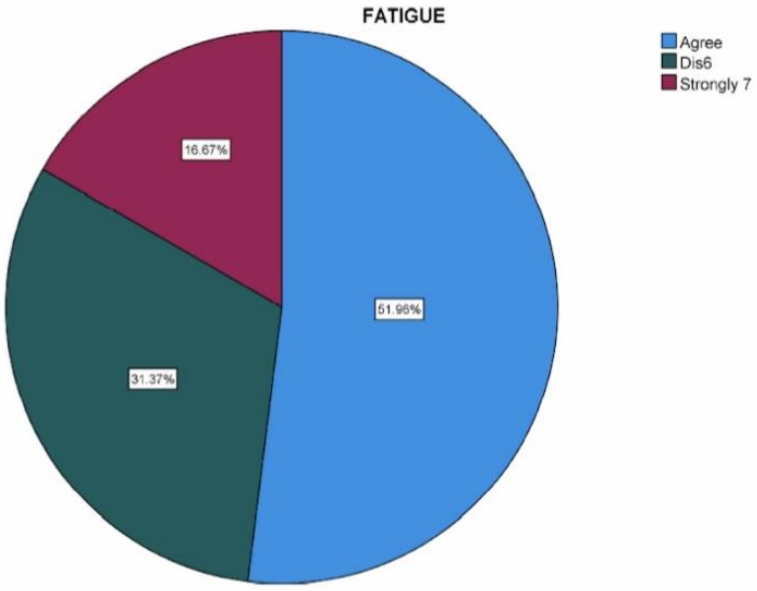

Figure 3: Pie chart represents the awareness towards fatigue experienced in the workplace, where blue color denotes agree (52%), green denotes disagree (31.4%) and pink denotes strongly disagree (16.7%).

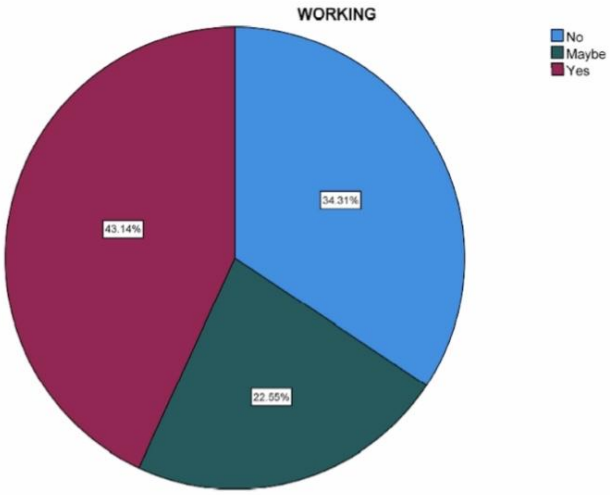

Fig 4: Pie chart showing responses for the feeling of fatigue in the working area, where pink color denotes yes (43.14%), blue color denotes no (34.31%)andgreen color denotes maybe (22.55%).

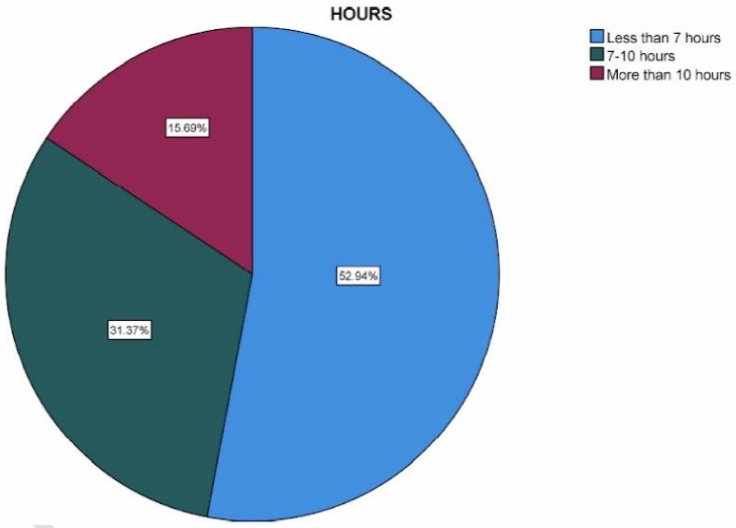

Figure 5: Pie chart showing the responses for the total amount of working time, where blue color denotes less than 7 hours (52.94%), green color denotes 7-10 hours (31.37%) and pink color denotes more than 10 hours(15.69%).

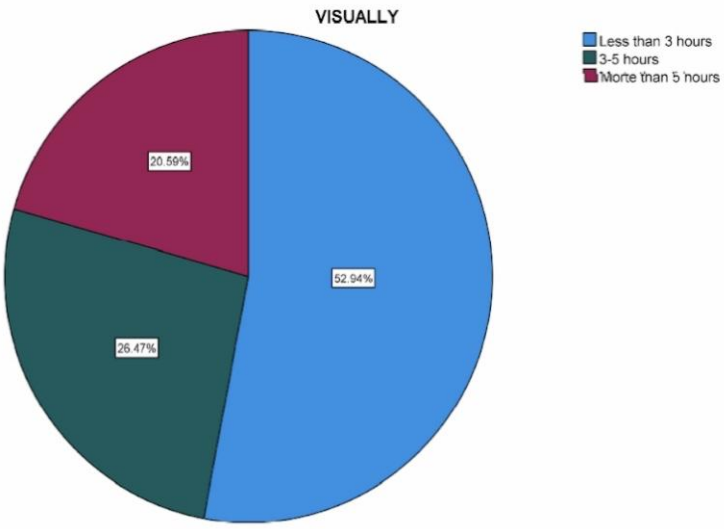

Figure 6: Pie chart showing the responses on amount of time spent visually on the screen (26.59%), where blue color denotes less than 3 hours (52.94%), green color denotes 3-5 hours and pink color denotes more than 5 hours(20.59%).

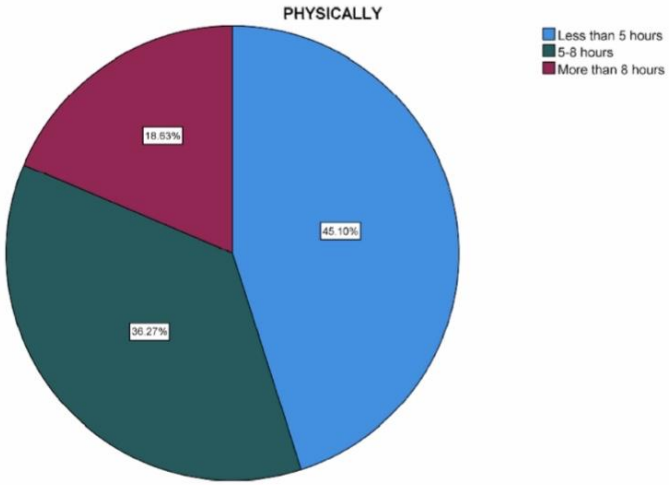

Figure 7: Pie chart showing responses for the amount of time spent physically, where blue color denotes less than 5 hours (45.10%), green color denotes 5-8 hours(36.27%) and pink color denotes more than 8 hours(18.63%).

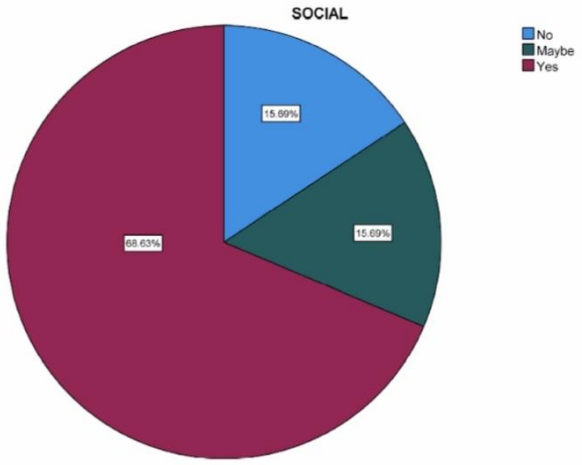

Figure 8: Pie chart showing responses for social life interfering with fatigues, where pink color denotes yes(68.63%), blue color denotes no(15.69%) and green color denotes maybe(15.69%).

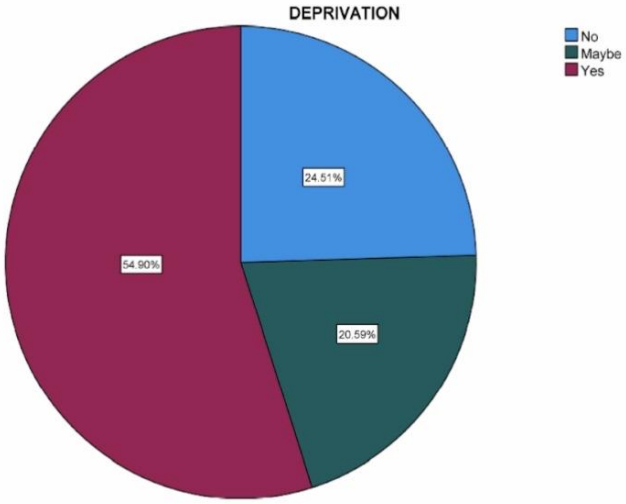

Figure 9: Pie chart showing responses for the feeling of sleep deprivation, where pink color denotes yes(54.90%), green denotes maybe (20.58%)and blue color denotes no(24.51%).

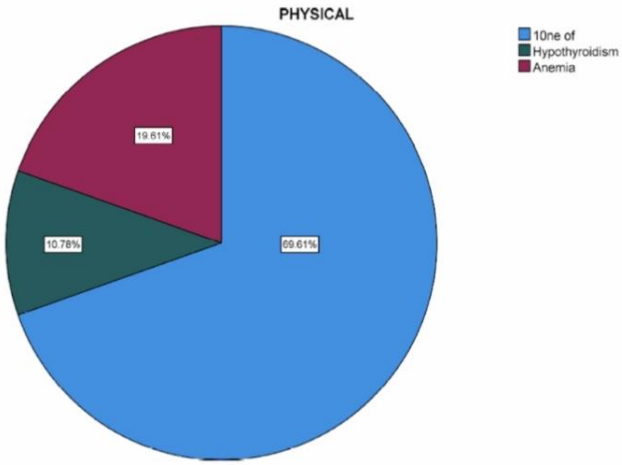

Figure 10: Pie chart showing responses for the experience of the physical cause of fatigue where red color denotes anemia(19.61%), green color denotes hypothyroidism(10.78%)and blue color denotes none of the above (69.91%). This pie chart denotes that majority of the respondents have none of the above listed health issues.

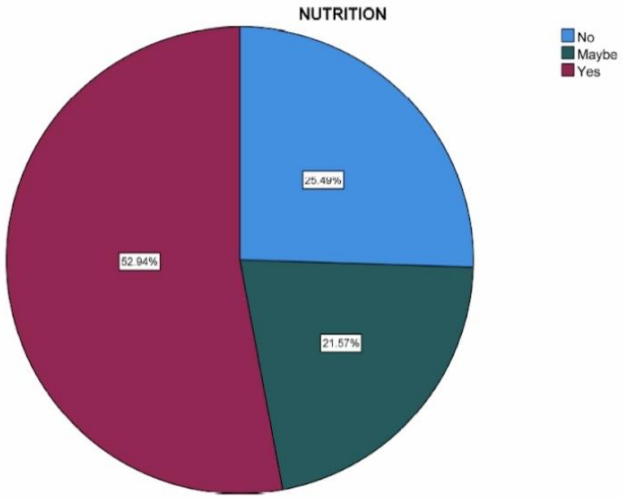

Figure 11: Pie chart showing responses for a nutritive and balanced diet in controlling fatigue, where pink color denotes yes(52.94%), green color denotes maybe (21.57%) and blue color denotes no(25.49%).This pie chart denotes that majority of the respondents agree that nutritive diet is essential for health.

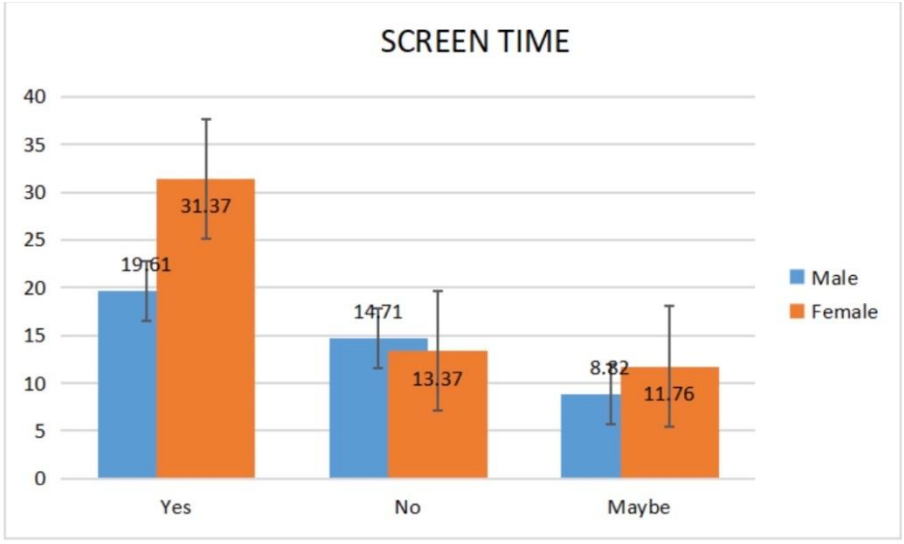

Figure 12: Error bar graph showing comparison of gender and number of responses of the opinion about experiencing visual fatigue due to excessive screen time. X axis represents the number of participants who responded ‘yes’, ‘no’ and ‘may be’. Y axis represents the percentage of response, where blue colour denotes responses from male and orange denotes responses from female. 19.61% of males agree, 14.71% disagree and 8.82% of male are not sure with their statement whereas, 31.37% of females agree, 13.73% disagree and 11.76% of females are not sure of experiencing visual fatigue due to excessive screen time. Females are more concerned about experiencing visual fatigue due to excessive screen time than males and this difference is statistically significant. Chi-square test, p-value: 0.045 (p value < 0.05 which is statistically significant).

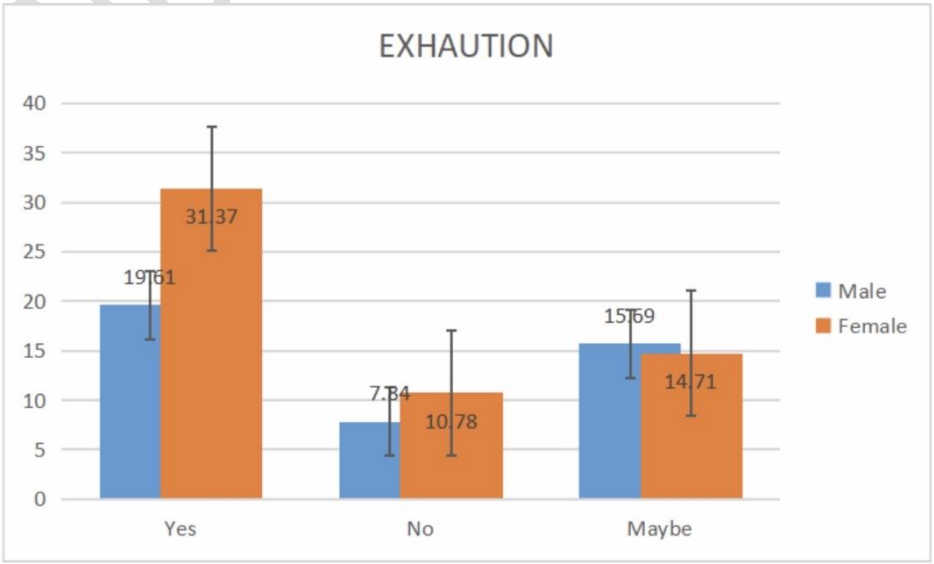

Figure 13: Error bar graph showing comparison of gender and responses for experiencing the feeling of exhaustion, frustration or lack of motivation. X axis represents the number of participants who responded ‘yes’, ‘no’ and ‘may be’. Y axis represents the percentage of response, where blue colour denotes responses from male and orange denotes responses from female. 19.61% of males agree, 7.84% disagree and 15.69% of male are not sure with their statement whereas, 31.37% of females agree, 10.78% disagree and 14.71% of females are not sure of experiencing the feeling of exhaustion, frustration or lack of motivation. Females have better awareness about experiencing the feeling of exhaustion, frustration or lack of motivation than males and this difference is statistically significant. Chi-square test, p-value = 0.240 (p value < 0.05 which is statistically significant).

The data were subjected to descriptive statistics using SPSS software version 22. Each question of the survey was represented by a pie chart. 50% of the population were aged from 18 to 20 years, 32.4% of the population were 20-25 years of age, 17.6% of the respondents were 25 years and above (Figure 1). 29.4% of the population were male and the majority of the population were female of 70.6% (Figure 2). 52% of the respondents agree about fatigue being the feeling of extreme tiredness resulting in mental or physical illness, 31.4% of the population disagree and 16.7% of the population strongly disagrees with them (Figure 3). 34.3% of the population have not experienced fatigue-ness while working, 43.1% of the respondents have experienced fatigue-ness while working, while 22.5% of the people may have experienced fatigue-ness (Figure 4).

52.9% of the population work less than 7 hours a day, 31.4% of the population work 7-10 hours a day, 15.7% of the people work more than 10 hours a day (Figure 5). 52.9% of the respondents spend less than 3 hours visually on the screen, 26.5% of the people spend 3-5 hours, 20.6% of the population spend more than 5 hours visually (Figure 6). 45.1% of the population spend less than 5 hours physically, 36.3% of the people spend 5-8 hours physically, 18.6% of the students spend more than 8 hours physically (Figure 7).

68.6% of the students feel that fatigue interferes with work, family or social life, 15.7% of the population do not feel the same, whereas 15.7% of the people may feel that fatigue interferes with work (Figure 8). 54.9% of the students have a feeling of sleep deprivation, 24.5% of the population do not experience sleep deprivation and 20.6% of the people may experience it (Figure 9). 19.6% of the population experience anemia, 10.8% of the students have experienced hypothyroidism, whereas 69.6% of the students experience none of the above (Figure 10). 52.9% of the population agree that a nutritive diet is essential for health, 25.5% of the students disagree whereas 21.6% of the people may agree that a balanced diet is essential for good health of students (Figure

11). Bar graph showing comparison of gender and number of responses of the opinion about experiencing visual fatigue due to excessive screen time. X axis represents gender and Y axis represents the number of participants who responded ‘yes’ (blue), ‘no’ (green) and ‘may be’(red). Females are more concerned about experiencing visual fatigue due to excessive screen time than males and this difference is statistically significant. Chi-square test, p-value: 0.045 (p value < 0.05 which is statistically significant) (Figure 12).

Bar graph showing comparison of gender and responses for experiencing the feeling of exhaustion, frustration or lack of motivation. X axis represents gender and Y axis represents number of responses who responded ‘yes’ (blue), ‘no’ (green) and ‘maybe’ (red). Female have better awareness about experiencing the feeling of exhaustion, frustration or lack of motivation than males and this difference is statistically significant. Chi-square test, p-value = 0.240 (p value < 0.05 which is statistically significant)(Figure 13).

In a study conducted by Luc Laberge ,average hours worked per week by students was 14.7 hours. It was observed that higher psychological distress, poorer health perception , greater sleep deprivation and higher exposure to physical work factors were associated with higher levels of acute fatigue(29,30)

That fatigue levels appear as a source of stress is consistent with the observation that a positive correlation was found between stress and fatigue scores(31,32). Similar to other studies, the main sources of fatigue were related to academic demands. To cope with such demands and to ameliorate stress, students used wellness strategies and sought social support and chiropractic treatments(33). Similar strategies were employed by students to cope with fatigue as well. In both cases, students believed that these strategies were effective. In other studies, chiropractic students believed that they were effective at coping with such levels utilizing provided resources(34).

The limitation of the study was that due to reduced sample size, the result obtained may not be accurate. There can be better ideas on enhancing physical activity in institutions to eliminate the feeling of fatigue among budding dentists.

CONCLUSION:

This study was conducted to acknowledge the effects of fatigueness and the different ways it impacts on the health of dental students. Our study revealed that dental students' prevalence rate of fatigability is 70% regardless of their work and rest patterns in their undergraduate level.

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