



AWARENESS ON THE MANAGEMENT OF CHEMICAL BURNS IN DENTAL OPERATORY AMONG UNDERGRADUATE STUDENTS- - A QUESTIONNAIRE SURVEY

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ABSTRACT

INTRODUCTION: Chemical burns are injuries to the skin, eyes, mouth, or internal organs caused by contact with a corrosive substance. Chemical burns may occur through direct contact on body surfaces, including skin and eyes, via inhalation, and/or by ingestion. The chemical agents used in day-to-day dental practice ranging from mouthwash, cavity varnish, or de-vitalizing pastes if used injudiciously can harm the integrity of the soft tissues in the oral cavity.

AIM: The aim of this study is aimed at spreading the awareness of chemical burns in dental operatory among the undergraduate students.



MATERIALS AND METHODS: This cross-sectional study with the help of a survey conducted among 143 undergraduate students. The statistical software, namely SPSS version 23.0, was used for the analysis of the data. Qualitative values were compared using chi square and descriptive statistics were used to analyse the data.

RESULTS: The respondents belonging to the age group of 17-19 think awareness on chemical burns is important. Both males and females think that awareness of chemical burns is important. The cross tab of gender and the chemical agents used everyday. The X axis is gender and the Y axis is chemical agents used everyday. The figure shows that males have answered the question correctly. Pearson chi-square value is 0.067 ($p > 0.05$), hence it is statistically significant.

CONCLUSION: The aim was carried out and fulfilled and the purpose of the study was done. Most of the respondents were aware of chemical burns in dental operatory.

KEYWORDS: awareness, Chemical burns, dental operatory, innovative method.

INTRODUCTION

Chemical burns are injuries to the skin, eyes, mouth, or internal organs caused by contact with a corrosive substance (1). They may also be called caustic burns. Chemical burns can happen in the home, at work, or at school (2). They can result from an accident or an assault. The chemical agents used in day-to-day dental practice ranging from mouthwash, cavity varnish, or de-vitalizing pastes if used injudiciously can harm the integrity of the soft tissues in the oral cavity (3). Effects depend on the substance; hydrogen peroxide removes a bleached layer of skin, while nitric acid causes a characteristic color change to yellow in the skin, and silver nitrate produces noticeable black stains (4). Chemical burns may occur through direct contact on body surfaces, including skin and eyes, via inhalation, and/or by ingestion. There are several ways to protect against chemical burns, such as wearing gloves and a lab apron when working with chemicals (5). Each chemical has its own way to remove it from the skin, but normally drenching the burn with water should help. On the mucosa, chemical burns present as diffuse erosive lesions ranging from simple desquamation to complete mucosal detachment with extension into the submucosa (6). The tissues exposed to chemicals show changes in their color, texture, consistency, and vascularity. The typical chemical burn is manifested as superficial white to yellow, wrinkled lesion. Desquamation of the underlying tissue due to necrosis depends on the duration of exposure to chemicals. As the duration of exposure increases, the necrosis of the tissue increases (7). On removal of necrotic epithelium, the



red bleeding connective tissue can be observed subsequently covered by yellowish fibrinopurulent membrane (5). Clinical features of each in have been described in detail. Our team has extensive knowledge and research experience that has translated into high quality publications (8–16), (17–22), (23–27). The aim of the study is to pass on the awareness and information about the chemical burns involved in dental operator.

MATERIALS AND METHODS

This cross-sectional study was conducted among the undergraduate students of a private dental college in Chennai. The survey was conducted among 143 undergraduate students. Questionnaires had demographic details like age, gender and the questions were also asked based on the knowledge on chemical burns in dental operator. A convenient sampling method was followed. The source of data was primary in nature and it was obtained through self-administered questionnaire. The questionnaire survey was conducted during the month of February, 2021. Data was entered and analyzed using a software program called SPSS Statistics version 23. An interviewer administered a questionnaire prepared in the english language was used to collect data about the undergraduate student's sociodemographic characteristics, awareness on chemical burns in dental operator. From the questionnaire, the demographic details such as age of the undergraduate student, gender of the undergraduate student and knowledge on chemical burns in dental operator. The statistical software, namely SPSS version 23.0, was used for the analysis of the data. Qualitative values were compared using chi square and descriptive statistics were used to analyse the data. The p-value of 0.05 or less was considered statistically significant.

RESULTS

In our study, it was concluded that the respondents were aware of the chemical burns in dental operator.

The Statistics Obtained Were Made Into Pie charts And Each Was Elaborated.



Figure 1. Shows About 45.1 (Blue) Percent Of The Respondents Belonged To The Age Group Of 17-19 Whereas About 29.8 (Green) Percent Of The Respondents Belonged To The Age Group Of 20-22 And The Rest Belonged To The Age Group Of 23-25. Figure 2. Shows About 52.7 (Purple) Percent Of The Respondents Were Males Whereas The Rest Were Females. Figure 3. Shows About 34 (Beige) Percent Of The Respondents Have Answered The Question Correctly As Maybe. Figure 4. Shows About 34 (Beige) Percent Of The Respondents Have Answered The Question Correctly As Maybe. Figure 5. Shows About 22.9 (Purple) Percent Of The Respondents Have Answered The Question Correctly As Yes. Figure 6. The X Axis Is Age And The Y Axis Is If They Think Awareness On Chemical Burns Is Important. The Purple-Coloured Bar Shows The Response To Be Yes, The Green-Coloured Part Shows To Be Maybe And The Beige-Coloured Part Is Shown To Be No. The Figure Shows That The Respondents Belonging To The Age Group Of 17-19 Think Awareness On Chemical Burns Is Important. Pearson Chi-Square Value Is 0.067 ($P > 0.05$), Hence It Is Statistically Significant. Figure 7. The X Axis Is Gender And The Y Axis Is Chemical Agents Used Everyday. The Blue-Coloured Bar Shows The Response To Be Both, The Yellow-Coloured Part Shows To Be Toothpaste And The Beige-Coloured Part Is Shown To Be Mouthwash. The Figure Shows That Males Have Answered The Question Correctly. Pearson Chi-Square Value Is 0.067 ($P > 0.05$), Hence It Is Statistically Significant. Figure 8. The X Axis Is Gender And Y Axis Is Whether They Think Awareness On Chemical Burns Is Important Shows That Both Males And Females Think That Awareness On Chemical Burns Is Important. The Purple-Coloured Bar Shows The Response To Be Yes, The Green-Coloured Part Shows To Be Maybe And The Beige-Coloured Part Is Shown To Be No. Pearson Chi-Square Value Is 0.067 ($P > 0.05$), Hence It Is Statistically Significant.

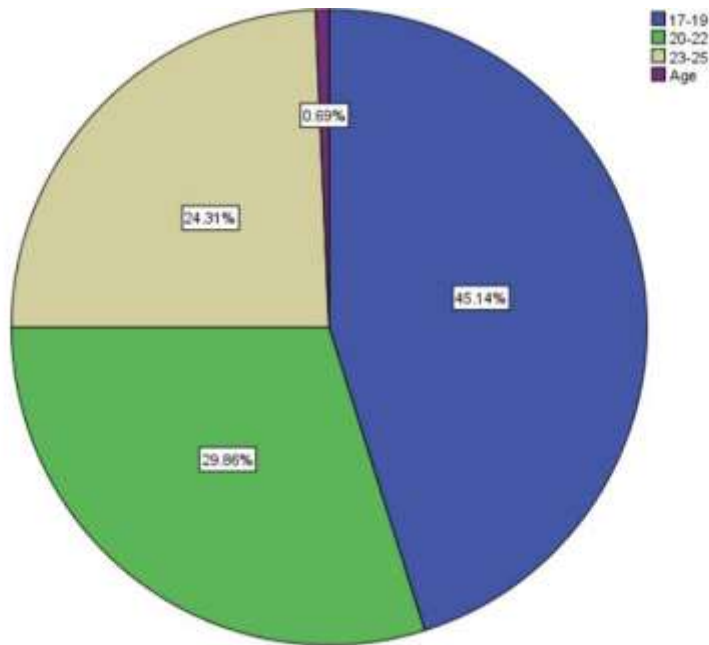


FIGURE 1. shows about 45.1 (blue) percent of the respondents belonged to the age group of 17-19 whereas about 29.8 (green) percent of the respondents belonged to the age group of 20-22 and the rest belonged to the age group of 23-25.

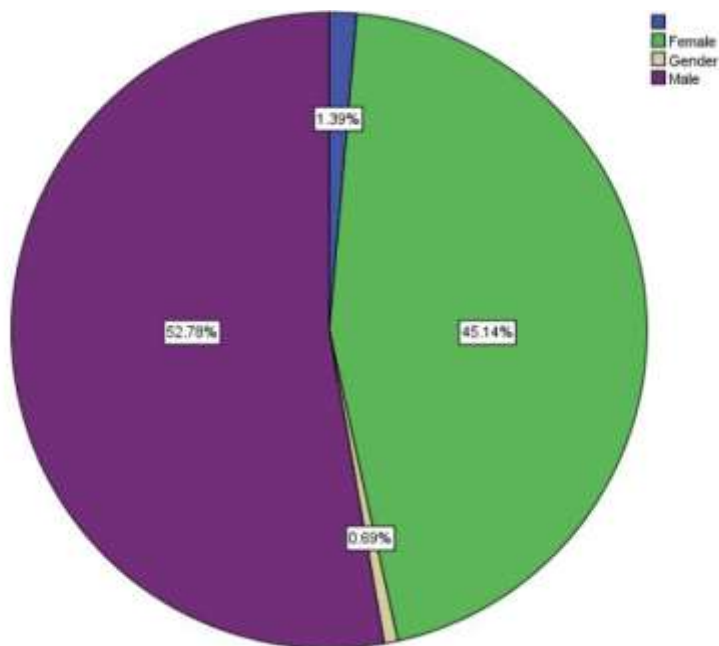




FIGURE 2. shows about the gender distribution among the study population, 52.7 (purple) percent of the respondents were males whereas the rest were females.

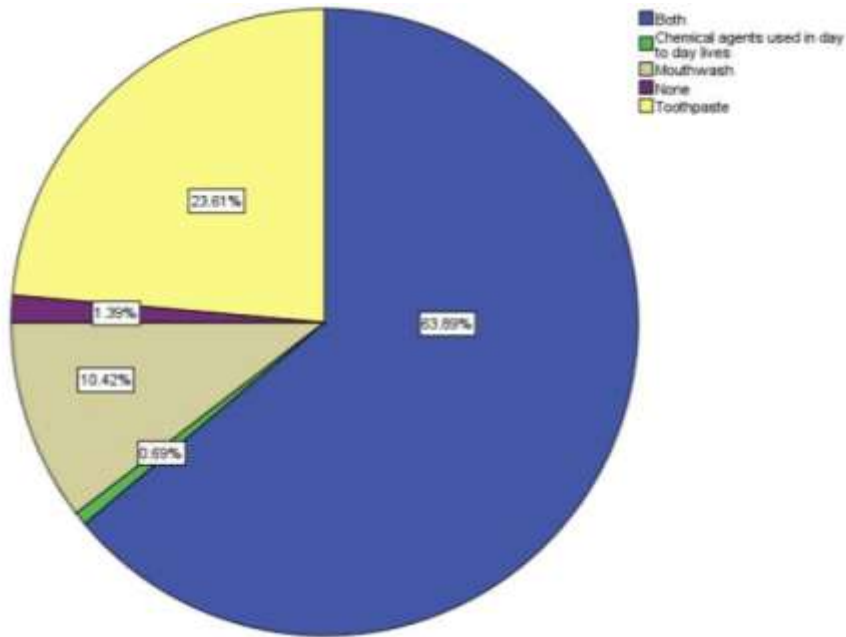


FIGURE 3. shows about 63.8 (blue) percent of the respondents have answered the question correctly as both.

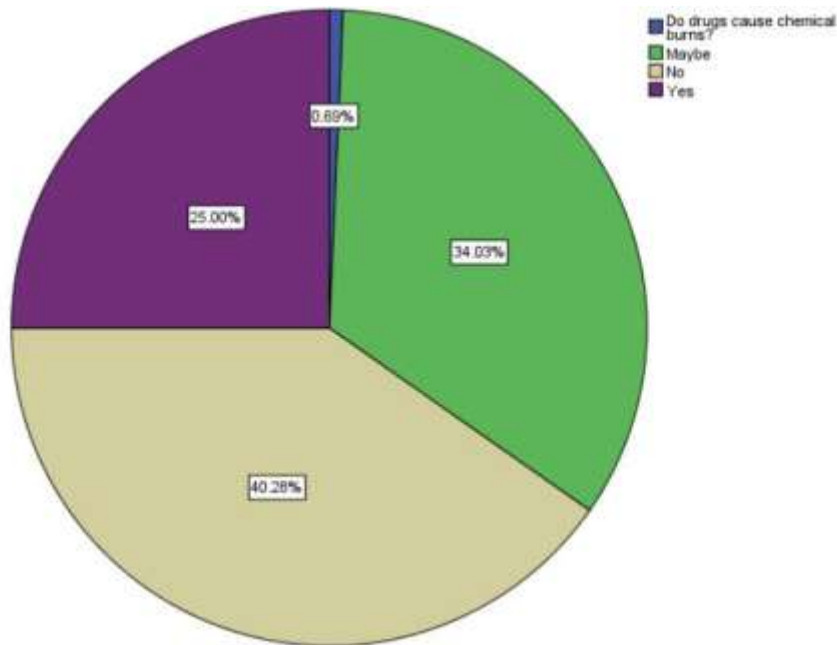


FIGURE 4. shows about 34 (beige) percent of the respondents have answered the question correctly as maybe.

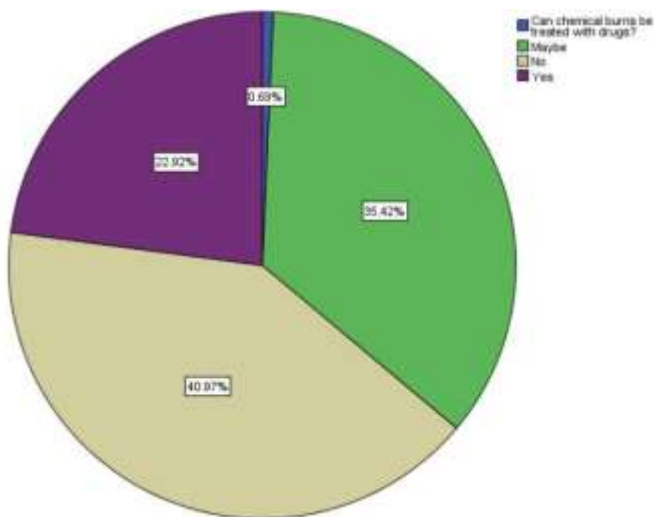


FIGURE 5. shows about 22.9 (purple) percent of the respondents have answered the question correctly as yes.

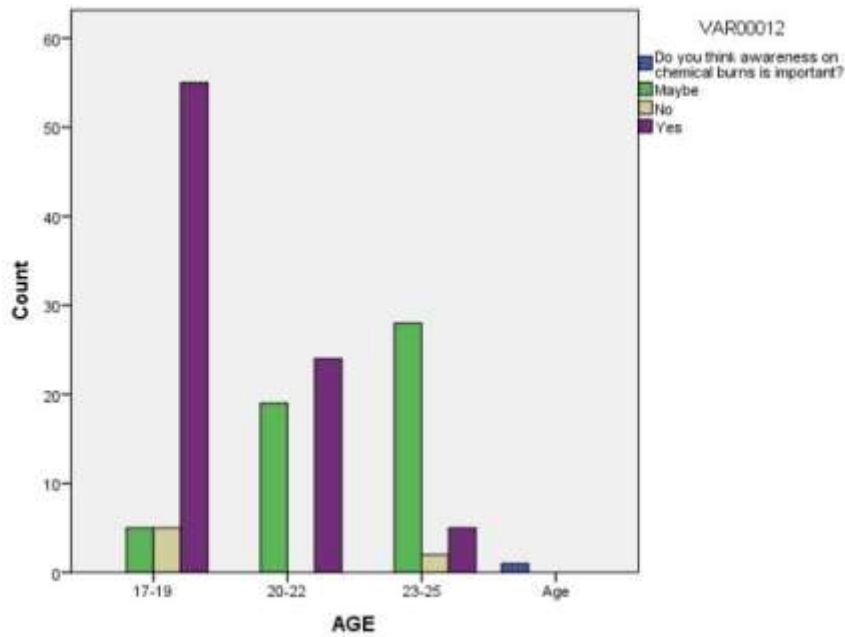


FIGURE 6. The X axis is age and the Y axis is if they think awareness on chemical burns is important. The purple-coloured bar shows the response to be yes, the green-coloured part shows to be maybe and the beige-coloured part is shown to be no. The figure shows that the respondents belonging to the age group of 17-19 think awareness on chemical burns is important. Pearson chi-square value is 0.067 ($p > 0.05$), hence it is statistically significant.

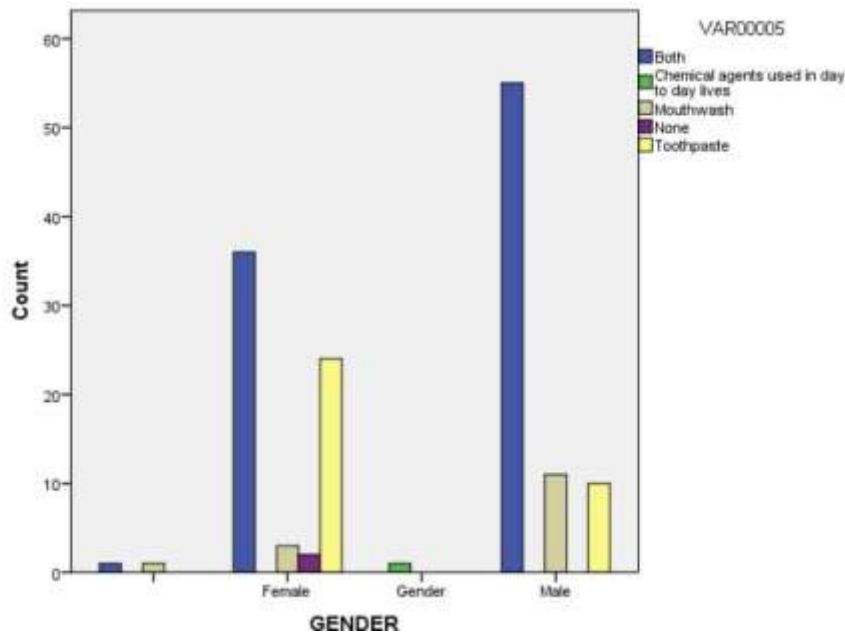


FIGURE 7. The X axis is gender and the Y axis is chemical agents used everyday. The blue-coloured bar shows the response to be both, the yellow-coloured part shows to be toothpaste and the beige-coloured part is shown to be mouthwash. The figure shows that males have answered the question correctly. Pearson chi-square value is 0.067 ($p > 0.05$), hence it is statistically significant.

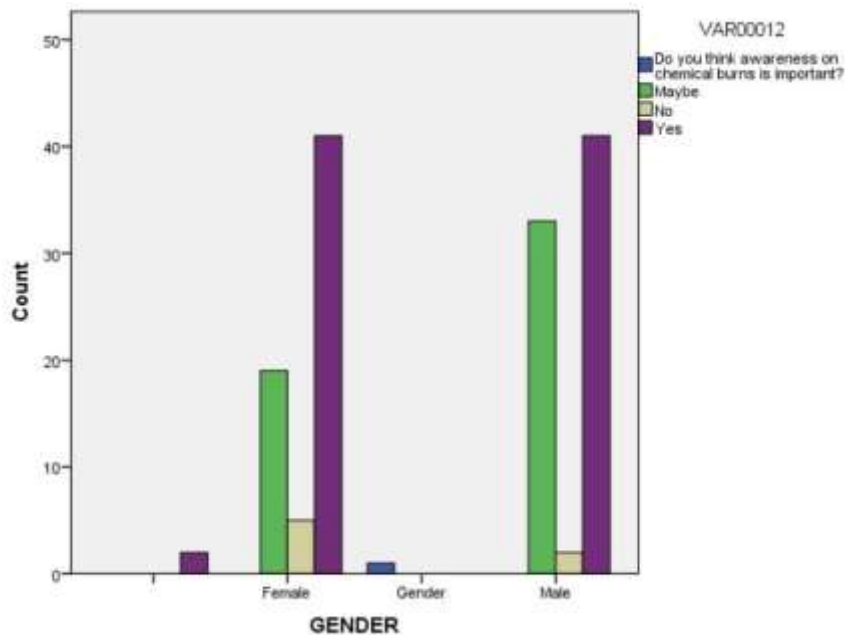


FIGURE 8. The X axis is gender and Y axis is whether they think awareness on chemical burns is important shows that both males and females think that awareness on chemical burns is



important. The purple-coloured bar shows the response to be yes, the green-coloured part shows to be maybe and the beige-coloured part is shown to be no. Pearson chi-square value is 0.067 ($p > 0.05$), hence it is statistically significant.

DISCUSSION

First aid should be given to chemical burns immediately if possible. This includes removing the chemical that caused the burn and rinsing the skin under running water for 10 to 20 minutes. If a chemical comes into contact with your eyes, rinse your eyes continuously for at least 20 minutes before seeking emergency care. The respondents belonging to the age group of 17-19 think awareness on chemical burns is important. The cross tab of gender and the chemical agents used everyday. The figure shows that males have answered the question correctly. The cross tab of gender and whether they think awareness on chemical burns is important. (28) People with minor chemical burns do not require hospitalisation. For more severe burns, patients should receive treatment as for a typical thermal burn patient. In some situations an antidote may be given to counteract the offending chemical agent. (29) Healthcare professionals should be knowledgeable about chemical burns from exposure to acids (pH less than 7), alkalis (pH greater than 7), and irritants to recognize, manage and care for these common types of injury. Chemical burns are the result of exposures to a variety of substances commonly found in the home, workplace, and surrounding environment. The burn may be obvious, for example, from a direct spill or other exposure, or more covert, especially in children. Chemical burns can cause short-term, long-term, and lifelong health problems, especially if undertreated. Occasionally, they can result in premature death, especially if ingested in an attempt to self-harm. This activity reviews the pathophysiology and presentation of chemical burns and highlights the role of the interprofessional team in its management. The limitations are to be fulfilled in order to spread awareness.

The limitations of the present study is that the awareness and information on chemical burns in dental operatory was not passed on to a larger population.

Further study needs to be done in the topic in order to spread awareness among a vast population.

CONCLUSION



The aim of this study was to pass on the information and awareness on chemical burns in dental operations. The aim was carried out and fulfilled and the purpose of the study was done. Most of the respondents were aware of chemical burns in dental operatory.

AUTHORS CONTRIBUTIONS

Nehal Safiya: Literature search, data collection, analysis, manuscript drafting.

Dr. Dhanraj M: Aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation and final corrections of the manuscript.

Dr. L.Keerthi Sasanka: Data verification, manuscript drafting, preparation of manuscript.

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CONFLICT OF INTEREST

The author declares that there was no conflict of interest in the present study.

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