

Knowledge and Awareness of Upper Respiratory Tract Infection among Dental Students

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Abstract: -

➤ *Background:*

Dentists are at high risk of exposure to infections with droplets , blood-borne pathogens such as hepatitis B virus and other microorganisms that colonize the upper respiratory tract. This risk is increased by accidental injuries caused by dental instruments during patient treatment.

➤ *Aim:*

To assess the knowledge and awareness of upper respiratory tract infection among dental students.

➤ *Methodology:*

A self-administered questionnaire consisting of 24 questions was distributed to 110 dental students .The students participated in survey were asked about causes, symptoms and transmission of upper respiratory tract infections, composition of aerosols, control, contamination and prevention of aerosols. The questionnaire was made available on online for easy access. The data was collected and the results were analyzed.

➤ *Results:*

our survey showed that 50% of students had fairly good knowledge and awareness of upper respiratory tract infection.

➤ *Conclusion:*

It is concluded that some students have fair knowledge about upper respiratory tract infection. Focus on topic needed to enhance their knowledge such as aerosols and organisms causing respiratory illness.

I. INTRODUCTION

Upper respiratory tract infections (URTI) are one of the most frequently seen cases in the healthcare. It is an contagious infection transmitted by droplets , caused by a variety of bacteria and viruses. Rhinoviruses is most common viruses that cause URTI. The common upper respiratory tract infections are Acute rhino sinusitis, pharyngitis, tonsillitis, and acute otitis media^[1]. Dental workplace aerosols increases the risk of respiratory disease in dental health personnels and patients. Aerosols are nothing but it is an suspension in air (or) in a gas of solid (or) particle. The most rigorous aerosols occurs during oral

prophylaxis with ultrasonic scaler tips and during the use of bur with high speed handpiece^[2]. The aerosols are less than 100/microns where this microns can reach the pulmonary alveoli or float in the air for several hours and can also penetrate deep into respiratory system.

Dentists are more prone to high risk of URTI because they work with aerosols and other droplets, blood-borne pathogens. Dental workers are at high risk to get hepatitis and other upper respiratory infections^[3]. The infection is controlled by wearing gloves, masks by the dental health personnels. Educating dental students by providing knowledge about the URTI and their control measures to be taken to protect themselves and patients to stop spreading the infections. Hence our study was planned for a questionnaire based survey to know the awareness of dental students about URTI.

II. MATERIAL AND METHODOLOGY

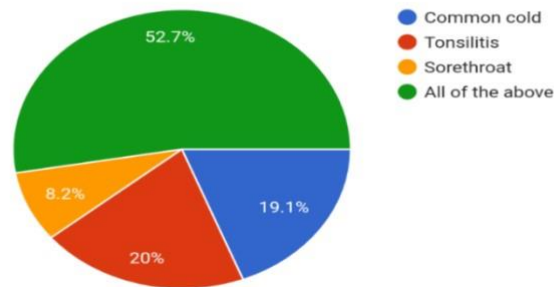
A cross sectional questionnaire survey was conducted to assess the awareness and knowledge of upper respiratory tract infection among dental students between 18-28years. The survey was conducted among dental students of our college. The study was conducted during covid19 lockdown period. The study was started on 20th Jan and ended on 10th Aug. An electronic questionnaire comprising of 24 questions including the demographic details was prepared on the format using google forms. Then the link was circulated on various social media platforms such as whatsapp messenger and Instagram with a note explaining the purpose of the study.

The questionnaire was designed mostly with closed ended questions (yes/no responses) and few with open ended questions to offer the subjects, the opportunity to express.

The participants were asked to complete and submit the responses to this online survey. It took about 5 to 7 minutes to complete the survey. Total of 110 samples were received with willingness. Form limiter was used to limit the multiple responses from same participant and to limit the data collection upto 110 responses. The questions were framed to access the awareness and knowledge of upper respiratory tract infections among dental students.

1.What are the upper respiratory tract infections?

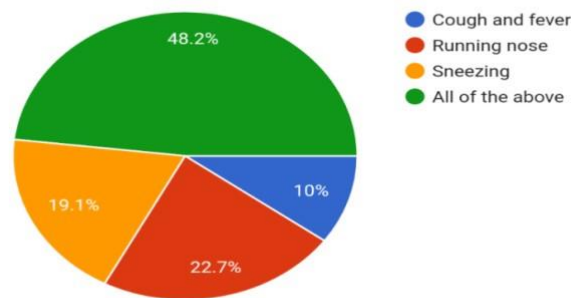
110 responses



out of 110 students, for question no 1: 52.7% of people selected the correct option D – All of the above. Remaining percentage of people selected other options.

2.What are the symptoms of upper respiratory infections?

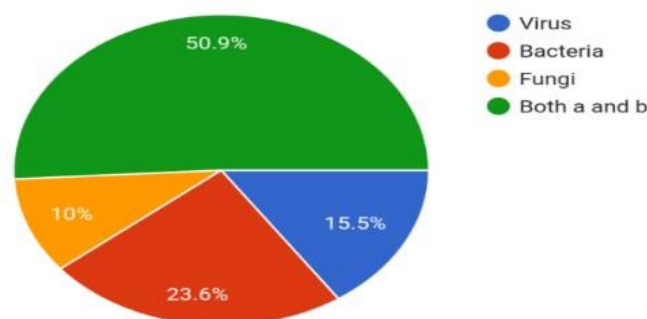
110 responses



Out of 110 students, for question no 2: 48.2% of people selected the correct Option D – All of the above. Remaining percentage of people selected other options.

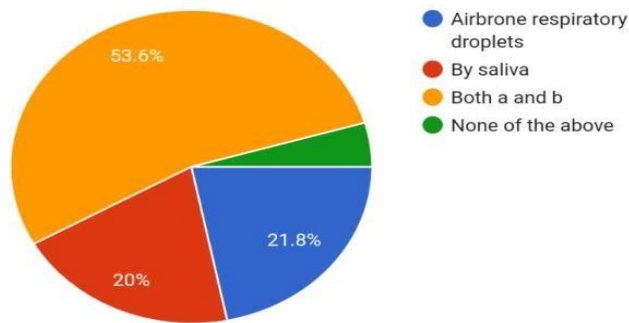
3.Upper respiratory tract infections is commonly caused by

110 responses



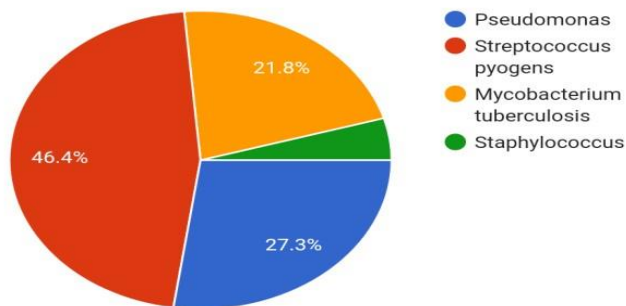
Out of 110 responses, for question no 3: 50.9% of people selected the correct answer Option D -All of the above. Remaining percentage of people selected other options.

4.Upper respiratory tract infections spread by
110 responses



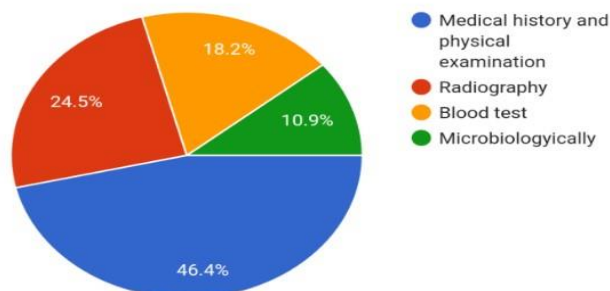
Out of 110 students question no 4: 53.6% of people selected correct answer Option -c. Remaining percentage of people selected other options.

5.Which bacteria causes upper respiratory tract infections?
110 responses



Out of 110 students question no 5: 46.4% of people selected correct answer Option -B Remaining percentage of people selected other options.

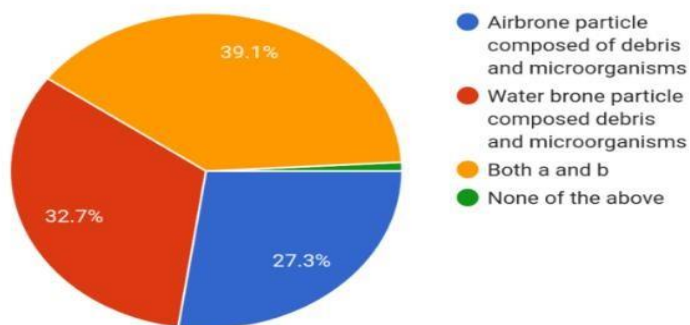
6.Upper respiratory tract infections is commonly diagnosed by
110 responses



Out of 110 students question no 6: 46.4% of people selected correct answer Option -A. Remaining percentage of people selected other options.

7. What are dental aerosols?

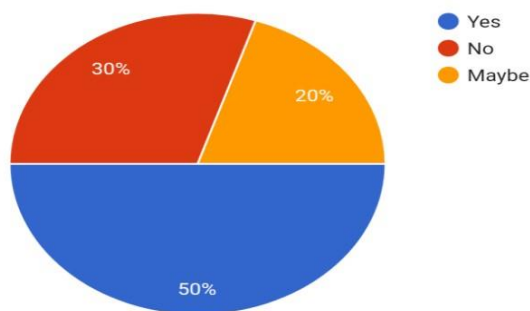
110 responses



Out of 110 students question no 7: 39.1% of people selected correct answer Option -c. Remaining percentage of people selected other options

8. Do you think that aerosols will cause upper respiratory tract infections

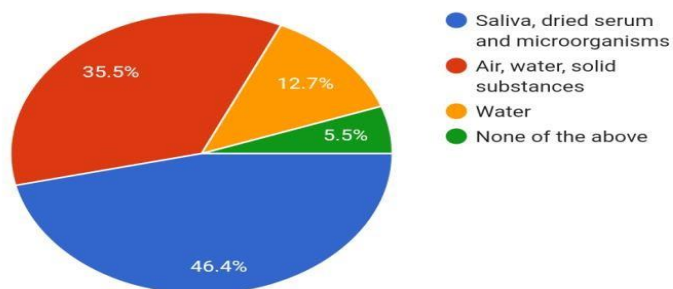
110 responses



Out of 110 students, question no 9: 35.5% of people selected correct answer Option -A. Remaining percentage of people selected other options.

9. Composition of aerosols

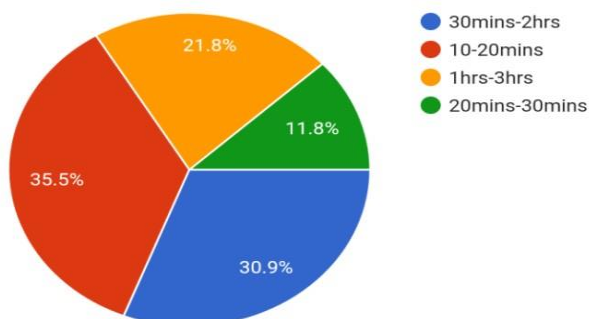
110 responses



Out of 110 students, question no 9: 46.4% of people selected correct answer. Option-A. Remaining percentage of people selected other options.

10.How long do dental aerosols stay in the air?

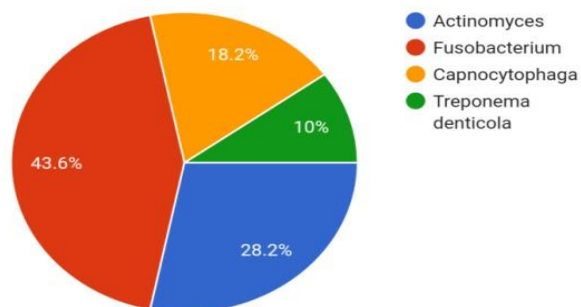
110 responses



Out of 110 students, question no 10: 11.8% of people selected correct answer. Option -D. Remaining percentage of people selected other options.

11.Microbes identified during periodontal therapy in aerosols

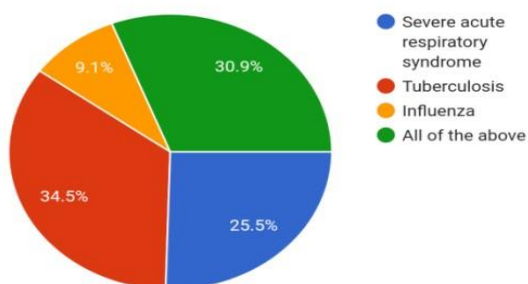
110 responses



Out of 110 students, question no 11: 43.6% of people selected correct answer Option-B. Remaining percentage of people selected other options.

12.What are the diseases known to spread through droplets or aerosols

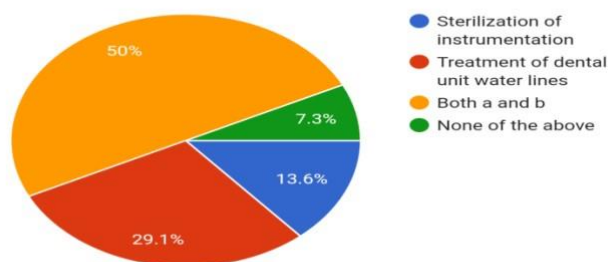
110 responses



Out of 110 students, question no 12: 30.9% of people selected correct answer Option D. Remaining percentage of people selected other options.

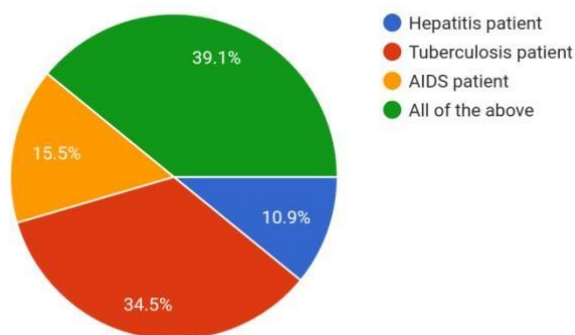
15. Methods of reducing airbone contamination

110 responses



13. Who are all the potential threat

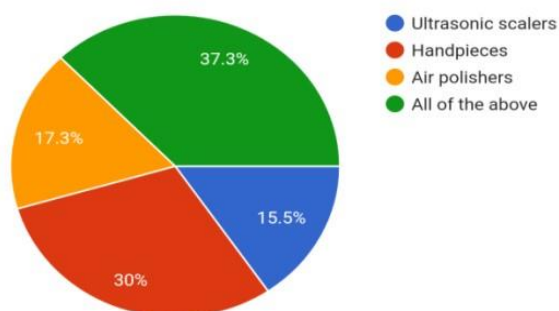
110 responses



out of 110 students, question no 13: 39.1% of people selected correct answer. Option- D. Remaining percentage of people selected other options.

14. Which instruments will produce the visible aerosols

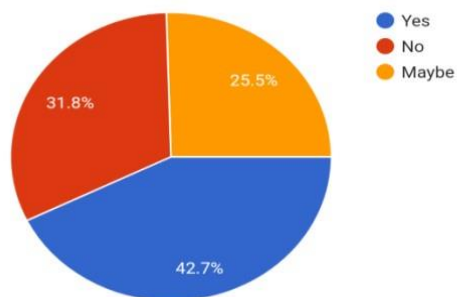
110 responses



Out of 110 students, question no 14: 37.3% of people selected correct answer Option D. Remaining percentage of people selected other options.

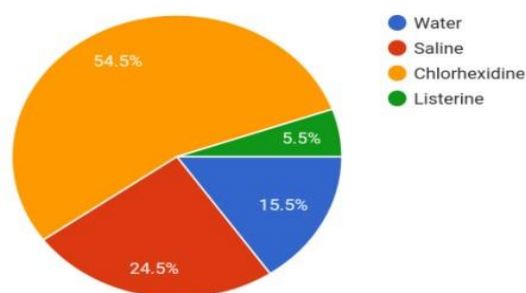
out of 110 students, question no 15: 50% of people selected correct answer option- C. Remaining percentage of people selected other options.

16. Do you think pre procedural rinse for 60seconds can reduce aerosols
110 responses



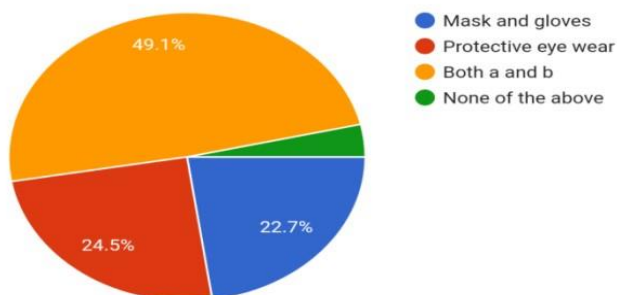
Out of 110 students, question no 16: 42.7% of people selected correct answer Option A. Remaining percentage of people selected other options

17. If yes, which of the following can reduce aerosols contamination
110 responses



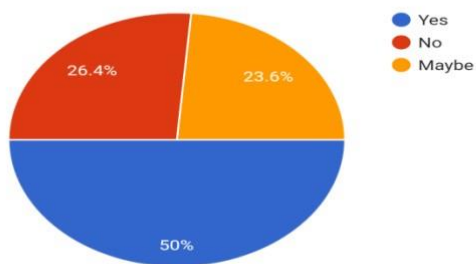
Out of 110 students, question no 17: 54.5% of people selected correct answer Option -C. Remaining percentage of people selected other options.

18.What are the self protection measures to prevent aerosols contamination
110 responses



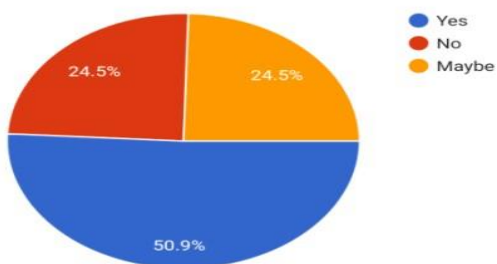
Out of 110 students, question no 18: 49.1% of people selected correct answer Option- C. Remaining percentage of people selected other options.

19. Do you know adding chlorhexidine gluconate in the dental ...l aerosols contamination
110 responses



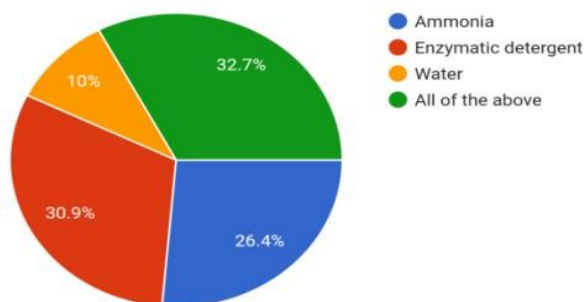
out of 110 students, question no 19: 50% of people selected correct answer-A. Remaining percentage of people selected other options.

20. Do high vaccum suction /evacator positioned close to ultr...ce aerosols production?
110 responses



Out of 110 students, question no 20: 50.9% of people selected correct answer Option – A. Remaining percentage of people selected other options.

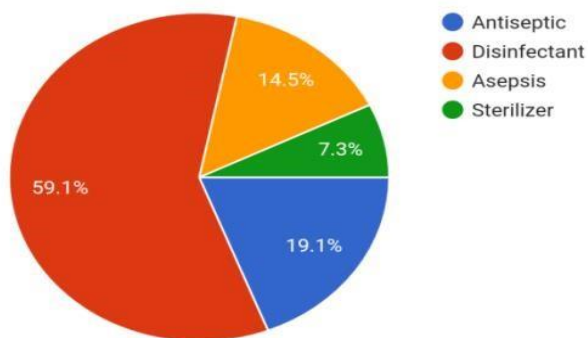
21. Clearing suction lines after every procedure using which of...s in aerosols control?
110 responses



out of 110 students, question no 26.4% of people selected correct answer option -A. Remaining percentage of people selected other options.

22.What is fumigation?

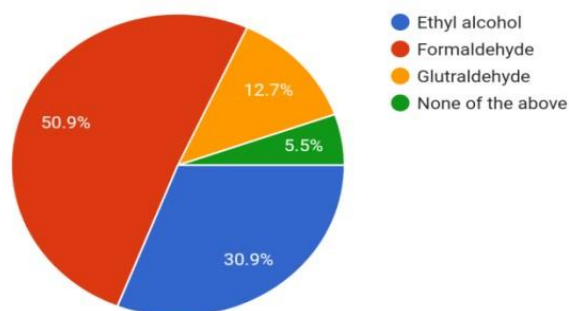
110 responses



out of 110 students, question no 22: 59.1% of people selected correct answer option-B. Remaining percentage of people selected other options

23.Which one of the chemical used for fumigation?

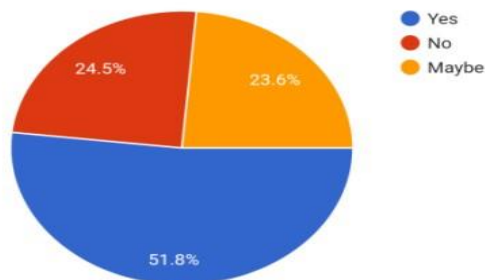
110 responses



out of 110 students, question no 23: 50.9% of people selected correct answer. Option -B. Remaining percentage of people selected other options.

24. Do you think that hepatitis will affect dental professionalist?

110 responses



out of 110 students, question 24: 51.8% of people selected correct answer option- A . Remaining percentage of people selected other options.

III. DISCUSSION

Upper respiratory tract infections (URTI) is an acute illness caused by various bacteria and viruses. The upper respiratory tract includes the nose, sinuses, larynx and pharynx^[1]. The signs and symptoms of URTI are cold, cough, sore throat, nasal congestion, headache, sneezing, low grade fever and itchiness in the nose. This symptoms may persist for 14 days (or) more^[5]. Upper respiratory tract infection is caused by bacteria namely *streptococcus pyogenes*, *staphylococci*, *corynebacterium*, *streptococcus pneumonia*, *haemophilus influenzae* and *diphtheria*^[6]. URTIs are classified based on the area of inflammation, Rhinitis, Sinusitis, Nasopharyngitis, Epiglottitis, Laryngitis, Laryngotracheitis and tracheitis. URTI can be diagnosed microbiologically by culture, there are various treatments available against this infection and vaccination against this infection is also available.

Aerosols is combination of both liquid and solid particles. It is composed of saliva, dried serum and microorganisms, the size of the droplet nuclei is 0.5 to 10 microns^[7]. Aerosols are produced by usage of ultrasonic scaler tip and burs at a high speed handpiece. Aerosols have limited penetration into the respiratory system. The source of dental aerosols are patient, dental unit waterlines and instruments. Aerosols increase risks to dental surgeons and patients.^[8] Aerosols plays a role in causing COVID-19 the worldwide pandemic disease in 2020. The droplet infections can be prevented by using PPE, N95 mask and social distancing.

The present study shows that the 50% dental students had fair knowledge on microorganisms, causes, symptoms and microorganism causing upper respiratory tract infection and 40% of the students are not aware that URTI is a droplet infection. Our study showed that some of the students have little knowledge and awareness of aerosols and 70% of the students are not aware that the microorganisms in aerosols can cause upper respiratory illness. The survey revealed that 55% of the students preferred oral mouth rinse before and after commencement of any aerosol procedures. The present survey shows that 50% of the students are aware about fumigation. 52% of the students are aware that hepatitis will affect dental professionalist.


Our study conducted among dental students and showed that they have fairly good knowledge and awareness on dental aerosols and upper respiratory infection. They lack knowledge on aerosol contamination, control and prevention.

It is concluded that more clinical session could be planned in colleges, which could improve their knowledge on URTI and Dental workplace aerosols. The student seemed to show a good interest in learning and gaining more knowledge about URTI and Aerosols.

IV. CONCLUSION

Our study observed that dental undergraduates have fair knowledge about URTI but lack definite knowledge about aerosols. So, they require that updating their knowledge in better way. The survey was conducted among a particular group of students and does not indicate it is appropriate to everyone. Therefore continuous educational programs, training workshops on infection control should be given to students to enhance their clinical practice.

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