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Respiratory Viral Outbreak in Dental Clinics - A Review

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Abstract: A respiratory viral outbreak is the outbreak of viral disease related to respiration and respiratory system. Respiratory viral diseases are classified into two types. They are upper respiratory viral diseases and lower respiratory viral diseases. Some of the common respiratory viruses include influenza virus, respiratory syncytial virus, parainfluenza virus, adenovirus, rhinovirus, human metapneumovirus. The route of entry of the virus is from the outer environment the microbe gets inside the host body and reaches the target cells and starts multiplying inside the target cells and then burst opens, the newly formed viruses are released into the bloodstream of the host and those new viruses get new target cells in the host body, till it reaches the particular amount virus, there will be no symptoms seen. And the dental clinics are considered the high-risk zones for the outbreak of viruses. The aim of the review was to create awareness among the dentist about the respiratory viruses and to be safe and prevent outbreaks in dental clinics. This is a review study setting, evaluating the respiratory viral outbreaks in dental clinics. Data for the study were collected from search engines like PUBMED, GOOGLE SCHOLAR, MeSH, Cochrane, Semantic scholar. A total number of 70 articles were selected. In this review, the viral disease outbreaks are limited to the respiratory system. With this we can conclude that the data obtained from the present study may be useful for practitioners to be safe, prevent outbreaks and easy diagnosis of diseases and give treatment after precautions and preventive measures for the viral disease are taken.

Keywords: Respiratory disease, outbreak, viruses, Dental clinics, Preventive measures, Vaccines

INTRODUCTION

An outbreak is an increase in the occurrence of a disease in a particular place which impacts thousands of people. Respiratory viral Outbreak is the outbreak of viral disease related to respiration and respiratory system. Respiratory viral diseases are classified into two types. They are upper respiratory viral diseases and lower respiratory viral diseases. Upper respiratory viral diseases are the disease that affects the upper respiratory parts (nose and nasal passages, paranasal sinuses, the pharynx, and the portion of the larynx above the vocal folds) whereas the lower respiratory diseases are the disease that affects the lower respiratory parts (the portion of the larynx below the vocal folds, trachea, bronchi and bronchioles)('Detection of respiratory viruses', no date). Some of the common respiratory viruses include influenza virus, respiratory syncytial virus, parainfluenza virus, adenovirus, rhinovirus, human metapneumovirus (Ashwin and Muralidharan, 2015). The viruses that affect the upper respiratory tract are Rhinovirus, Coronavirus, herpes virus, influenza virus, parainfluenza virus, Adenoviruses, Bocavirus, Coxsackievirus, Respiratory syncytial virus (Harrison, 2017). The viruses that affect the lower respiratory tract are influenza virus, parainfluenza virus, Adenoviruses, Bocavirus, Metapneumovirus.
Common sources of infections are man, animal to person, water/food, insects, some are unknown sometimes. The mode of transmission will be, direct contact, indirect contact, droplet transmission (inhalation), ingestion, inoculation (through injury/bites), transplacental transmission (from mother to foetus via the placenta). The different size of droplets are 1) Droplets - too large (>10 μm) 2), Droplet nuclei - small enough - inhaled (<5 μm) (Fox, 2007)(Girija *et al.*, 2019). The route of entry of the virus is from the outer environment. The microbe gets inside the host body and reaches the target cells and starts multiplying inside the target cells and then burst open. The newly-formed viruses are released into the bloodstream of the host and those new viruses get new target cells in the host body. Till it reaches the particular amount of the virus, there will be no symptoms seen (Schmidt, 2019)(Selvakumar and Np, 2017). The dental clinics are the high-risk zones for the outbreak of

viruses. The greater part of the large droplets travels an insignificant six feet. The distance travelled by aerosol is unknown. The general guideline is a feet distance for aerosols, but in open space, it is to stand six feet apart. On the off chance that the aerosol that individuals breathe out in different settings are critical in spreading the infection, the six-foot separation would not be defensive because those are conveyed all the more effectively via air flows. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020)

MATERIALS AND METHODS

This is a review study setting, evaluating the respiratory viral outbreak in dental clinics. Data for the study were collected from search engines like PUBMED, GOOGLE SCHOLAR, MeSH, Cochrane, Semantic scholar. A Total number of 70 articles were searched. A total number of 45 articles were selected. A number of articles with known concepts are 10, A total number of 20 articles with recent updates. Articles related to viral outbreaks, articles related to respiratory viral diseases, articles related to respiratory disorders are included. Articles not related to viral disease outbreaks, articles not related to respiratory diseases are excluded. Period or duration considered for reference articles 1980 to 2020.

Dentists have persistent exposure risk in their profession. Many of the procedures involved in dental treatment generate aerosol or splatter. Apart from this, contact with the mucus membrane of the patients has a risk of transfer of infections. Most dental clinics are small, closed and air conditioned. This environment is most conducive for the microorganisms to persist and be suspended for long. The aerosol load will depend on the number of dental chairs in the clinics. The risk of aerosol is more for a dentist because of the close proximity to the patients for a longer duration.

Subclinical And Latent Infection

Indicative diseases are evident and clinical, though contamination that is dynamic however doesn't deliver perceptible side effects might be called improper, quiet, subclinical, or mysterious(Lee, 2016). Contamination that is inert or lethargic is known as an idle disease. Instances of inert contamination incorporate, Ceaseless Congenital Rubella, CMV, EBV, hepatitis B, HIV. Inert HSV, VZV, adenovirus and some retroviral contaminations. Sorts of subclinical diseases: Baylisascaris procyonis, Bordetella (Pertussis or challenging hack), Chlamydia pneumoniae, Chlamydia trachomatis (Chlamydia), Clostridium difficile, Cyclospora cayetanensis, Dengue infection, Dientamoeba fragilis. Intense respiratory diseases (ARIs) represent 20%–40% of outpatient and 12%–35% of inpatient participation in an emergency clinic. Greater part (80%) of recognized infections incorporate RSV, flu A and B, human parainfluenza infections and Human metapneumovirus(Jolles, 2014).

Incidents Reported In India

India has faced many respiratory viral outbreaks in history. Considering the population density, climate and lifestyle in India it can be understood easily about the risk of community spread. The viral infection outbreaks are also seen in the recent past also. In April 2003-Severe Acute Respiratory Syndrome (SARS), which spread from the Middle east. In October 2003, Dengue fever outbreak in India. In September 2005 - Japanese Encephalitis (JE) outbreak in India, which spread from southeast Asia. In February 2006 - Avian flu outbreak in India. In March 2006 - Chikungunya and Dengue outbreak in south-west India. In May 2017 - Zika infection disease outbreak India. In May 2018 - Nipah infection outbreak India. February 2020-Coronavirus outbreak in India, which spread from south-east Asia('WHO | India', 2018a).

Respiratory Viruses

Respiratory viruses are the most frequent causative agents of disease in humans. One-fifth of child mortality worldwide is related to acute respiratory infections(Shahana and Muralidharan, 2016). SARS, Corona, MERS viruses have emerged in recent years as threats to public health. Some respiratory viruses are recognised to circulate commonly in all age groups. They are 1) influenza virus, 2) respiratory syncytial virus, 3) parainfluenza virus, 4)adenovirus, 5)rhinovirus, 6)human metapneumovirus (Szefler *et al.*, 2015; Schmidt, 2019).

Influenza virus

Influenza is a viral infection that can be deadly, attacks your respiratory system — (your nose, throat and lungs). Influenza is commonly called flu. Symptoms include fever, chills, muscle aches, cough, congestion, runny nose, headaches and fatigue (Pattemore and Jennings, 2008)(Marickar, Geetha and Neelakantan, 2014; Shahana and Muralidharan, 2016). Flu is primarily treated with rest and fluid intake to allow the body to fight the infection on its own. Paracetamol may help cure the symptoms but NSAIDs should be avoided. An annual vaccine can help prevent the flu and limit its complications. There are 2 main types of influenza virus: Type A and Type B. Type A influenza can be dangerous and is known to cause outbreaks and increase your risk of disease. Unlike a type B infection, type A viruses are categorized by subtypes. influenza A viruses have been associated with more hospitalizations and deaths in children and the elderly than in other age groups (Schmid, Scott Schmid and Rouse, 2005), (Pratha and Geetha, 2017).

Respiratory syncytial virus

Human metapneumovirus is a virus that causes respiratory tract infection with the infected cells of the mucosa fusing together to form a syncytium. It is a lower respiratory disease.Respiratory syncytial virus, or RSV, is a common respiratory virus that usually causes mild, cold-like symptoms (Pichon, Lina and Josset, 2017),(Pratha and Geetha, 2017; Vaishali and Geetha, 2018). Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. Symptoms of RSV include: runny nose, coughing, sneezing, sore throat, mild headache, decreased appetite, fever, wheezing, rapid breathing and other breathing difficulties (McIntosh, Malinoski and Randolph, 2004)(Zhu *et al.*, 2009).

Parainfluenza virus

Parainfluenza viruses are the virus that cause human parainfluenza. Parainfluenza is a common virus that can cause both upper and lower respiratory infections, including colds, bronchitis, croup, and pneumonia. it is not related to influenza virus (the flu). It is caused by an entirely different virus (Guo *et al.*, 2020), (M, Geetha and Thangavelu, 2019). They are commonly transmitted from a sneeze, coming in contact with infectious material and touching your eyes, nose or mouth. The virus can stay alive in the air up to an hour. 4 types of HPIV are there, they are HVIP 1(most common cause of croup), HVIP 2 (causes croup, upper & lower respiratory diseases), HVIP 3 (associated with bronchitis and pneumonia), HVIP 4 (Mild upper respiratory tract disease in children & old age people) ('Parainfluenza virus', no date) (Institute and National Cancer Institute, 2020a).

Adenovirus

Adenoviruses are a group of common viruses that infect the lining of your eyes, airways and lungs, intestines, urinary tract, and nervous system. They're common causes of fever, coughs, sore throats, diarrhoea, and pink eyes(Zhu *et al.*, 2009)(Girija As and Priyadharsini J, 2019)(Smiline, Vijayashree and Paramasivam, 2018)). Infections happen in children more often than in adults, but anyone can get them.Adenoviruses can cause a wide range of illnesses such as common cold or flu-like symptoms, fever, sore throat, acute bronchitis (inflammation of the airways of the lungs, sometimes called a "chest cold"), pneumonia (infection of the lungs), conjunctivitis. It causes Respiratory infection. Fluid from the nose, mouth, throat, and lungs (respiratory tract) ('Adenovirus', no date)(Girija, Jayaseelan and Arumugam, 2018).

Rhinovirus

The rhinovirus is the most common viral infectious agent in humans and is the predominant cause of the common cold.(Smiline, Vijayashree and Paramasivam, 2018; Institute and National Cancer Institute, 2020e) Rhinovirus infection proliferates in temperatures of 33–35 °C (91–95 °F), the temperatures found in the nose Signs and symptoms of rhinovirus infection, Nasal dryness or irritation - Maybe first symptom, Sore throat or throat irritation – Common and bothersome initial symptom, Nasal discharge, nasal congestion, and sneezing – Intensify over 2-3 days, Headache, Facial and ear pressure, Loss of sense of smell and taste (Institute and National Cancer Institute, 2020d)(Institute and National Cancer Institute, 2020c)(Institute and National Cancer Institute, 2020b).

Human metapneumovirus

Human metapneumovirus (HMPV) can cause upper and lower respiratory disease in people of all ages, especially among young children, older adults, and people with weakened immune systems. HMPV causes respiratory infection in humans of all ages and is spread by contact with respiratory secretions of infected persons or contaminated objects/surfaces(Tripp, 2010; Paramasivam, Vijayashree Priyadharsini and Raghunandhakumar, 2020). The incubation and contagious periods are not well defined but are probably similar to those of respiratory syncytial virus. Human metapneumovirus (HMPV) is a respiratory virus that can cause severe lower respiratory tract disease and even death(Permpalung *et al.*, 2020), (Priyadharsini *et al.*, 2018b).

Dentist's Exposure to Respiratory Viruses in Dental Clinics

When we speak about respiratory viral disease during a viral outbreak, dentists are the one who are at high risk. While treating patients they are supposed to be in close position with the patient and also they have direct contact with the oral cavity of the patient. Instruments like 3 way syringes, handpieces can spread the disease (DePaola and Grant, 2019). The oral cavity is the party place of microbes. Since dentists are closely bonded with oral cavities, they are at high risk. And those instruments splashes water droplets from the oral cavity; viruses can spread through those water droplets(Miller and Palenik, 2014; DePaola and Grant, 2019).

An aerosol (abbreviation of "aero-solution") is a suspension of liquid droplets in air or another gas. The production of airborne materials during dental procedures is obvious. This is evident during tooth preparation with a rotary instrument, air abrasion, air-water syringe, ultrasonic scaler and air polishing and from the dental unit waterlines. Aerosols due to their ability to stay airborne and potential to enter respiratory passages, spreads the disease at a comparatively high rate(Gayer, 2015). splatter droplets are also considered a potential infection threat.

Aerosols from dental systems are made out of water, microorganisms, tissue, tooth residue, and liquids, for example, spit and blood. spread of aerosols are capable of causing cross-contamination in the dental center, bringing about impedance of the wellbeing status of patients, dental experts, and dental partners. The expressions "aerosol" and "splatter" in the dental condition were utilized by Micik and associates. Pressurized canned products were characterized as particles under 50 micrometers in distance across(Barbeschi, 2015).

Most dental treatment techniques, particularly when utilizing rapid handpieces, ultrasonic scaler and water/air syringe, have the potential for making sullied mist concentrates and splatter that contain microorganisms and blood. (Gamage *et al.*, 2005; Barbeschi, 2015),('Aerosols', no date). The little particles of an aerosol (0.5 to 10 μm in measurement) can possibly be suspended in air and infiltrate profound into the respiratory alveoli and are thought to convey the best potential for transmitting contaminations, while bigger particles of a splatter (more noteworthy than 50 μm in width) settle effectively onto ecological surfaces. Irresistibly microbes are available in the oral cavity and the respiratory tract, and from that point, they can enter the blood and salivation(Hidy, 1984a, 1984b, 1984c).

Barrier precautions are a fundamental component of infection control PPE kit is used for Personal Protection worn by employees. These PPE kit components are gloves, gowns, shoe covers, head covers, masks, respirators, eye protection, face shields, and goggles. Routine cleaning and PPE doffing once per day by healthcare workers is a must and the disinfectant should be used. Protocol-alert includes identifying patients with disease, disposable surgical face masks, isolating the patient, masks outside their rooms are compulsory. Operative protocols use antiviral drugs, and movement restrictions in the Containment Zone('Aerosols', no date; Gras, 2003).

Aerosol production of some dental instruments favors the spread of these microorganisms. Transmission pathways of aerosols in a dental clinic are of three types 1)from the patient to doctor, 2) from doctor to patient, 3) from patient to patient.. The particular idea of the dental specialist's activity, for example, the dental specialist's inward breath zone imparted to patient's exhalation zone, just as the utilization of rapid instruments delivering a lot of pressurized canned products, salivation and blood sprinkling onto the dental specialist's face, and so on., makes different opportunities for contact with viruses(Mohr, 2005). The water droplets produced during dental treatment in the patient's mouth can cause the spread of microorganisms and influence the nature of dentistry condition.

During dental strategies that produce water droplets, rubber dams give hindrance security from the mouth and will basically prevent all pathogens rising up out of respiratory exhalation (Hidy, 1984a). Utilization of rubber dams during cavity preparation has a notable decrease in the spread of microorganisms. The utilization of breathing devices and force devices in dental practice and orthopedics may cause a danger of the spread of airborne disease (Hidy, 1984a, 1984b).

Hand washing and sanitizing

To ensure yourself as well as other people against the infection, clean your hands as often as possible and altogether. Use alcohol-containing hand sanitizer or wash your hands with cleanser and water. On the off chance that you utilize alcohol-containing hand sanitizer, ensure you use and store it cautiously. Keep alcohol-containing hand sanitizers out of kids. Show them how to apply the sanitizer and screen its utilization (Halton *et al.*, 2011; Greeson *et al.*, 2019). Apply a coin-sized sum on your hands. There is no compelling reason to utilize a lot of the item. Abstain from contacting your eyes, mouth and nose following utilizing a liquor based hand sanitizer, as it can cause aggravation. Hand sanitizers prescribed to ensure against infections are alcohol-containing and in this way can be combustible (Lee, Hong and Kim, 2015).

Try not to use it before taking care of the fire. Under no situation, drink or let kids swallow alcohol-containing hand sanitizer. It may very well be harmful. Washing your hands with cleanser and water is likewise compelling against infections(Weik, 2000). Hand cleanliness is a significant part of standard precautionary measures and one of the best strategies to forestall transmission of pathogens related with social insurance. Notwithstanding

hand cleanliness, the utilization of individual defensive gear ought to be guided by hazard evaluation and the degree of contact foreseen to blood and body liquids, or pathogens(Pal *et al.*, 2020). Notwithstanding rehearsals done by wellbeing labourers when giving consideration, all people (counting patients and guests) ought to conform to disease control rehearses in social insurance settings. The control of the spread of pathogens from the source is critical to maintain a strategic distance from transmission (Hirschmann *et al.*, 2020).

Personal protective equipment

Utilize personal protective equipment (PPE) suitably, including gloves and outfit. Wear an outfit and gloves for all communications; that may include contact with the patient or the patient's things(‘Personal protective equipment. Protective footwear’, no date). Wearing PPE upon and disposing of before leaving the patient room is done to prevent the spread of pathogens. Standard Precautions like Hand Hygiene, Personal Protective Equipment (PPE), Needlestick and Sharps Injury Prevention, Cleaning and Disinfection, Respiratory Hygiene (Cough Etiquette), Waste Disposal, Safe Injection Practices, Hand cleanliness, Gloves (Wear when contacting blood, body liquids, discharges, mucous films, non intact skin), Facial insurance (eyes, nose, and mouth), Gown, Environmental cleaning are the essential degree of disease control safeguards which are to be utilized, as a basic thing to do(Institute of Medicine, Board on Health Sciences Policy and Committee on Personal Protective Equipment for Healthcare Workers During an Influenza Pandemic, 2007).

Chlorhexidine Mouthwash

Chlorhexidine mouthwash as a pre procedural wash is more powerful than the natural mouthwash. Preprocedural wash has a distinct advantage in the treatment point of view however, the decrease in the bacterial amount in saliva has not proportionately declined. Decrease in the bacterial amount utilizing 0.2percent of chlorhexidine gluconate mouthwash is seen(Bescos *et al.*, 2020).

Trimming off the dental prosthesis the measure of vaporized molecules was created more. It shows there is a high danger of transmission of contamination to the dental specialist and the lab experts. Anyway it ought to be borne as a primary concern that there is a chance of even infections brought through them. Subsequently before cutting the dental prosthesis, the prosthetic material ought to be drenched in a chlorhexidine or some other wide range disinfectant to forestall the airborne tainting. More Dentists and partners are inclined to the microbial disease in their working region because of vaporized defilement(Solís *et al.*, 2011; Penmetsa *et al.*, 2019).

HEPA Filters

HEPA, which represents High Efficiency Particulate Air, is used to depict channels that can trap 99.97 percent of particles that are 0.3 microns.That micron size (0.3) is the most infiltrating molecule size. Researchers have discovered that particles of that size sidestep air channels more than bigger or littler particles. HEPA filters consist of intertwined glass filaments, fibres and carbon content. As particles navigate through this web, they're removed from environmental air.. In Europe, a filter only needs to capture 85 percent of particles sized at 0.3 microns. The American standard is often referred to as “True HEPA.”An air purifier with a HEPA filter would work best, alongside decreasing humidity levels in that environment.(*What is a HEPA filter?*, no date). HEPA filters can remove the virus particles in the atmosphere and reduce the viral burden there by reducing the risk of transmission. Today as per the DCI norms use of HEPA filter is mandatory in all dental clinics.

Environmental cleaning

Advancement of a secure atmosphere is a foundation of counteraction of transmission of pathogens in medicinal services. Implementing source control measures for all people with respiratory indications through advancement of respiratory cleanliness and hack behavior gives a secure atmosphere. Create arrangements which encourage the execution of contamination control measures. Evaluate The risk of introduction to body substances or sullied surfaces before any medicinal services movement. Make this an everyday practice(‘WHO | India’, 2018b), Select PPE dependent on the evaluation of hazard, clean sterile gloves, sanitizing liquid, safe outfit, veil and eye assurance or a face shield. Instruction for wellbeing labourers, patients and guests is Covering mouth and nose when yawning or sneezing, Hand cleanliness after contact with respiratory discharges, Spatial detachment of people with intense febrile respiratory indications(‘WHO | India’, 2018c).

Social distancing

Social distancing is a non-pharmaceutical contamination-counteraction. It is practised, to decline contact between the individuals who are infected with a sickness causing pathogen and the individuals who are not. This in the end, prompts decline in spread and mortality(Reluga, 2020). At the point when somebody yawns, sneezess, or talks they splash little fluid droplets from their nose or mouth which may contain infection. In the event that you are excessively close, you can take in the aerosols, including the infection if the individual has the illness(Lang, no date).

Vaccines

Vaccines are used to stimulate the production of antibodies and provide immunity against one or several diseases, prepared from the causative agent of a disease, its products, or a synthetic substitute, treated to act as an antigen without inducing the disease.Vaccines are made by taking viruses and inactivating or weakening them so that they can't reproduce (or replicate) themselves very well or so that they can't replicate at all(Schmid, Scott Schmid and Rouse, 2005; Bueno-Marí, Paulo Gouveia Almeida and Navarro, 2015). Vaccines given to children contain enough of the virus or bacteria to develop immunity, but not enough to make them sick. Dentists should protect themselves by vaccination against viruses and it has considerable importance in controlling respiratory diseases. H1N1 Influenza vaccine, RSV vaccine, Pneumococcal vaccine, MERS vaccine are some of the vaccines used to prevent respiratory viral disease spread (McIntosh, Malinoski and Randolph, 2004)(Shahzan *et al.*, 2019).

Vaccines recommended in India

It is recommended to have a valid protection against hepatitis B, measles, mumps, rubella, influenza, varicella, diphtheria, tetanus, poliomyelitis and pertussis. The Department of Health (DoH) guidelines recommend that clinical members of the dental team should be up to date with the following vaccines: Hep B (HBV) vaccine – Antibody titres for hepatitis B must be checked one to four months after the completion of a primary course of vaccine.

Outbreaks of acute respiratory illness are common and can occur in many settings (e.g., communities, nursing homes, military barracks)(Hoffmann and Paranhos-Baccalà, 2014). Explicit treatments, contamination control rehearses, and other preventive measures might be important to control spread. Subsequently, examination concerning the clinical and epidemiological highlights, just as the etiology is especially essential to general well being(Bueno-Marí, Paulo Gouveia Almeida and Navarro, 2015). Predominant clinical respiratory outbreaks include Prolonged paroxysmal cough, Bronchitis, Pneumonia, Influenza-like illness, Acute respiratory distress syndrome or rapidly progressive pneumonia. Now to this list, SARS, Corona, MERS have also been added (Walker and Ison, 2014).

Financial Impacts

The proof announced, in different examinations the scourge infection impacts on the nation's economy from numerous points of view including the wellbeing, transportation, rural and the travel industry areas. exchange with different nations will also be affected, while the interconnectedness of present day economies implies that a pandemic can likewise involve universal flexible chains(Achonu, Laporte and Gardam, 2005). The fact is that the high mortality rate, decreased trade value and decreased international travels are also the effects of epidemic outbreaks globally and is not simply a local phenomenon. It is very important for all countries to take necessary measures to manage the national economy loss due to this threat.(Tavana, 2017)(Priyadharsini *et al.*, 2018a). Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

CONCLUSION

Dentistry is a beautiful field of medicine, dental care is like offering life care to the patients. Any profession has its own risk, like in dentistry. It is clear and obvious that any hospital set up is at very high risk for an outbreak of respiratory viral diseases. There is evidence from previous authors that there are incidences of transmission of upper respiratory viruses and herpes viruses in the dental office. In this review the viral disease outbreaks are limited with the respiratory system. With this we can conclude that the data obtained from the present study may be useful for practitioners to be safe, prevent outbreaks and easy diagnosis of diseases and give treatment after precautions and preventive measures for viral disease are taken.

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