EXPERIENCE AND INSIGHT AUTHOR IN PREVENTING AND CURBING THE NOVEL CORONAVIRUS (COVID19) OUTBREAK

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Abstract

Introduction: In December 31, 2019, China gave bad news the World Health Organization (WHO) throughout an outbreak of a mysterious pneumonia characteristic in Wuhan, which is located in Hubei Province with 11 million people. On 1 January 2020, the source of the Coronavirus outbreak is a seafood market that has been closed. The Huanan Seafood Wholesale Market in Wuhan City, where the virus was first detected, fit that description to a tee, with vendors illegally trading in wild and exotic animals alongside the daily ocean catch. Discussion: This literature review retrieved the articles from databases such as Springer, PubMed, and Google Scholar. The articles on preventing were 17 articles and curbing were 15 articles. The literature review is a critical and in-depth evaluation of previous research to obtain important information about the dangers of the corona virus and the important of preventing and curbing the corona virus. Guidance regarding personal protective equipment in infection prevention and control is provided by WHO. Goggles and face shield must always be used to protect against potential hazards, and health workers don’t touch mucous membranes (eyes, nose or mouth). Conclusion: Recommendations for preventing health and preventing Covid19 are: limiting physical contact or being in a room with people without symptoms, covering the mouth with a tissue when sneezing or coughing and then throwing the tissue into the trash. If there are no tissues, use your sleeves to avoid liquids or droplets on other people or sticking to nearby objects, do not travel to the red zone against the spread of Covid19, rub hands properly for 20 seconds with soap and water. If it is quite difficult to find water, it is advisable to always have a Hand Sanitizer with an alcohol content of at least 60% which is believed to be able to kill germs. Recommendation for curbing the spread the Covid19 include: lockdown, stay at home, and physical inactivity.
INTRODUCTION

Coronaviruses are a genome family of positive sense RNA viruses with single-stranded, which infects humans and animals as a cause of respiratory and digestive tract diseases (1). An important issue is seeking ideas prevention of infectious disease mode to vulnerable communities (toddlers also elderly) and provide accurate treatment, monsidering the severity of Corona Virus Disease outbreak all over the world.

There are six coronaviruses, 2 viruses from the nasal cavity of human patients, which were originally the common cold, then named Human Coronavirus 229E and Human Coronavirus OC43 (2). Among them are two strains of the new coronavirus that have spread around the world, MERS-CoV and SARS-CoV which can infect humans and other animal intermediaries such as camels, bats, cattle and ferreys, and cause acute respiratory infections, severe lung inflammation to death, the zoonosis and genetic diversity as well as the similarity in its genome, have produced a deadly disease worldwide (3-5). Common types of corona viruses that affect humans, such as types 229E, NL63, OC43, and HKU1, usually can only cause mild to moderate upper respiratory tract diseases, such as the common cold (6-8). Regarding the spread of the corona virus, a test to detect it is very important.

In 31 Desember 2019, China gave bad news that the WHO throughtout an outbreak of a mysterious pneumonia characteristic in Wuhan, which is located in Hubei Province with 11 million people (9). On 1 January 2020 the source of the Coronavirus outbreak is a seafood market that has been closed (10). The Huanan Seafood Wholesale Market in Wuhan City, where the virus was first detected, fit that description to a tee, with vendors illegally trading in wild and exotic animals alongside the daily ocean catch (11). Coronaviruses, like influenza viruses, are still circulating in various animals but have not been found to infect humans. Some examples of corona viruses include alpha-coronaviruses and beta-coronaviruses are of particular importance to human health and gamma-coronaviruses and delta-coronaviruses which primarily infect birds, but there may be some of them that can be transmitted to mammals (12).

The coronavirus raises concerns that it could be highly contagious and quickly spread to many other parts of China and several other countries within 4 months of the first published report. On May 21, 2020 there are 82,967 confirmed cases of infection and 4,634 deaths have been reported in Mainland China and the Xinjiang Production and Construction Corps (13).
to monitor the symptoms you feel. Always follow the National Guidelines on self-isolation (24). Since the first reports emerged, healthcare workers in China have been forced to wear eye protection because it can reduce the risk from exposure to hazardous chemicals, exposure to airborne particles and reduce the risk of transmitting Covid19 to health services when health workers are in close contact with patients.

There are several routes of transmission of Covid19, including droplets or aerosols, airborne or airborne transmission, transmission through objects or surfaces, and via fecal-oral, but the most important is through the respiratory tract (25) and so far it has been shown that the virus is carried in droplets from the nose or mouth that come from an infected person when coughing, sneezing and talking. If these droplets come into contact with someone’s eyes, nose, or mouth directly or indirectly through a hand that has been in contact with an infected person, that person could become infected (10). WHO provides Guidelines for protection standards on Personal Protective Equipment in the Prevention and Control of Coronavirus Disease. Personal protective equipment such as eye protection (googles) and face shields (face masks) should always be worn, and health workers are advised not to touch the face, especially the mucous membranes in the mouth, nose and eyes (25-26).

Infected patients are people who within 14 days of appearing symptoms traveled from an infected country, or who were in close contact, such as family members, colleagues or medical personnel who treated the patient before they knew the patient was infected with Covid19 and must be properly isolated time, avoiding unnecessary direct contact. From the initial manifestation report there were almost more than 150 patients, clinical features such as conjunctivitis have not been reported, this cannot be controlled (10,22), especially because we know that conjunctivitis is present in other coronaviruses that are rarely known (27-28).

As this patient presents to health services with complaints of viral conjunctivitis, in examining neurological diseases, a medical history is important. A doctor may not have the opportunity to follow the disease in the first place. Usually patients come to the doctor when the disease is developing and to areas affected by the corona virus to areas affected by the coronavirus, as well as diagnose systemic flu-like symptoms and family history. Daily behavior to prevent and reduce transmission of the corona virus, such as maintaining hand hygiene by washing hands thoroughly with soap and running water, must always be carried out. Many health workers wear glasses or contact lenses because this can be an additional way to prevent the possibility of being infected with Covid19 transmission. All health care workers working in rooms with patients with suspected mild or severe MERS infection, as well as by infecting and attacking the patient’s body fluids, showed no evidence of serum MERS Antibody - CoV (29).

Given the limited information today, we must remain vigilant to better recognize the early manifestations of Covid19. Therefore, this infection does not only involve the respiratory tract, but also various other systems, one of which is the nervous system. Health workers must take appropriate and prompt actions and are advised to always maintain hand hygiene by washing hands with soap using running water and wearing gloves and protecting the open mucous membranes of patients, not forgetting to always wear glasses or face masks to reduce the risk of Covid19 transmission (24).

The Coronavirus infection are usually accompanied by complaints of fever, body warmth, body aches, muscle aches, headaches, sore throat, cough or runny nose (30,27). Because the incubation period for Covid19 ranges from 2 - 14 days after exposure, has a fast transmission power and the symptoms are difficult to distinguish from the flu in general, almost everyone underestimates the coronavirus which results in more cases being infected with the coronavirus (31-33). The Covid19 corona outbreak through the SARS-CoV-2 virus is still spreading and infecting many people around the world. The spread is very fast. This situation made WHO warn the public to take corona prevention measures by starting treatment earlier.

The purpose of literature review was to preventing and curbing the Novel Coronavirus outbreak. This literature review attempts to answer the following question: How preventing and curbing The Novel Coronavirus outbreak?

**DISCUSSION**

This manuscript current study utilized the several search engine (Springer, PubMed, and Google Scholar) to find those studies the preventing and curbing Covid19 between 2010 - 2020. Several important keywords should be selected to find a suitable study on this topic. Current study used “Preventing Covid19” as a keyword, all of which totaled 469,301 articles were found. This consist, research articles, book reviews, reviews, and articles review were defined as other categories. Then current study searched the topic using “Curbing Covid19” as associated keywords, and all of which totaled 12,737 articles were found. Therefore, current study manually reviewed 65 published sources including available theses, book chapters, reports that related. Theses types of sources are included in this review paper.
Preventing

Attempts to reduce or eliminate contamination by microorganisms in more than one patient through by using a harmless disinfectant on equipment before and after use with antiseptic soap. For the respiratory tract in China we recommend a mixture of ethanol and chlorhexidine as a disinfectant solution. In Wuhan using two disposable filters (PALL BB50TBreathing Circuit Filter, Pall Corp. USA), placed in inhalation and exhalation are used for infection control and are able to

Table 1. Literature Review

| Authors                  | Research Title                                                                 | Population   | Method                                                                 | Result                                                                 | Conclusion |
|--------------------------|-------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------|------------------------------------------------------------------------|------------|
| Meng L, Qiu H, Wan L, Ai Y, Xue Z, Guo Q, et al (34). | Intubation and Ventilation amid the COVID-19                                  | 80,409 patients | The authors present the experience of caring for the critically ill patients with COVID-19 in Wuhan. It is extremely important to follow strict self-protection precautions. | Intubation and invasive ventilation support may be superior to high-flow oxygen therapy and bilevel positive airway pressure ventilation in boosting transpulmonary pressure | In this article, we summarize the firsthand experience pertinent to intubation and ventilation management from the physicians who are taking care of COVID-19 in Wuhan. |
| Loeb M (39)              |                                                                |              | A complete surgical setup was arranged for a male human cadaver. The “patient” was draped with a surgical draping. A drape barrier separate the operating table from the anesthesiologist’s. | The surgeon and the surgical assistant showed a more severe contamination than other members of the surgical team. Surveillance cultures revealed contamination with Staphylococcus aureus for the anesthesiologist and the “patient’s” head as well. | Aerosols can become contaminated with pathogens if the patient is infected or colonized by using high-speed cutters in cervical spine surgery to produce an aerosol cloud that spreads throughout the operating room and contaminates the operating room. |
| Makovicka JL, Bingham JS, Patel KA, Young SW, Beauchamp CP, Spangehl MJ (35). | Surgeon Personal Protection: An Underappreciated Benefit of Positive-Pressure Exhaust Suits | For air sampling detection, 103 standard Petri dishes with Manitol Salt agar (Merek) were used, which were exposed to the contaminated aerosol. | | | Orthopaedic and trauma surgery using power tools, pulsatile lavage and electrocautery are surgical aerosol-generating. |
| Hirschmann MT, Hart A, Henckel J, Sadoghi P, Seil R, Mouton C (36). | Coronavirus Disease: personal protective equipment for orthopedic surgeons. | General population | A systematic review of this article is the literature available using the keyword “COVID-19”. | Helmet or task force can also be an option for protection from the dangers of body sprays, but it only protect healthy people from transmission of the virus through droplets combined with protective masks. | Conclusions we found a significant reduction in viral shedding (Supplementary Table 2) in respiratory droplets for OC43 (Extended Data Fig. 4) and influenza B virus and in aerosols for NL63 (Extended Data Fig. 4). |
| Leung NHL, Chu DKW, Shiu EYC, Chan K, Mcdevitt JJ, Hau BJP, et al (37). | Respiratory virus shedding in exhaled breath and efficacy of face masks | Most participants were younger adults and 5% were age 11-17 years, but there were more children with influenza virus. | Study design. Participants were recruited year-round from March 2013 through May 2016 in a general outpatient clinic of a private hospital in Hong Kong. | Authors screened 3,363 individuals in two study phases, ultimately enrolling 246 individuals who provided exhaled breath samples. Among these 246 participants, 122 (50%) participants were randomized to not wearing a face mask during the first exhaled breath collection. | |
| Lee S, Hwang D, Li H, Tsai C, Chen C, Chen J (38) | Particle Siza-Selective Assessment of Protection of European Standard FFP Respirators and Surgical Masks against Particles-Tested with Human Subjects | The sample was selected only from a younger population in Taiwan and the number of subjects was small, there is a limit that extends to all workers and other races | The method used in this article is a description of the Personal Sampling System for Respiratory Protection Evaluation. | Fit testing Results, Protection Factors of Tested Respirators, Association between Fit Factors and Protection Factors | The FFP and SM respirators tested in this study had poor protection against particles between 0.263 and 0.384 μm. Particles in the 0.093–1.61 μm size range are a protective factor for FFP respirators and do not affect size. |
| Bartoszko JJ, Abdul M, Farooqi M, Alhazzani W, Loeb M (39) | Medical Masks vs N95 respirators for preventing COVID-19 in healthcare workers: Asysematic review and meta-analysis of randomized trials | The population was healthcare workers and reported on any of the following outcome: viral respiratory infection laboratory confirmed by PCR, serology, or viral culture, laboratory confirmed coronavirus infection, laboratory confirmed influenza infection. | Data Sources: MEDLINE, Embase, and CENTRAL from January 1, 2014, to March 9, 2020, Data Selection: Randomized controlled trials comparing the protective effect of surgical masks to N95 respirators in healthcare workers. | Search results and study characteristics, Effect on outcomes and Quality assessment. | Search results and study characteristics, Effect on outcomes and Quality assessment. |

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Sterile surgical gowns are used to keep doctors and the OR team in a sterile state, free from germs or viruses that stick to clothing and are part of standard protection in OR. In every operation to reduce intraoperative wound contamination and minimize the risk of patient infection, the hospital has an The surgical team consists of: Surgeons; The surgical team is led by a senior surgeon or surgeons who have already performed the surgery. Surgical assistant (1 person or more) anesthetic assistant doctor, resident, or nurse, under the direction of the surgeon. The assistant holds the retractor and suction to see the location of the operation who must have technical and non-technical skills in their respective fields and wear sterile surgical clothing. The disinfectant that is often sprayed in the 3-8 m area around the operating table can protect against blood and fluids from surgery (35).

A helmet or task force can also be an option for protection from the dangers of body sprays, but it only protects the faces of oneself and others from droplets in the air due to airborne transmission of Covid19 combined with a respirator mask (36).

Use surgical masks is useful for preventing transmission spread by transmission of droplets such as Covid19 to most health workers. There are real theories as to the opposite of systematic literature reviews or what is also called literature studies and literature studies by Leung et al., nevertheless it is well-established that it provides inadequate protection against transmission of Covid19 and appears to play an important role in airborne spread, which found that surgical masks can be used by medical personnel while on duty as an option can effectively reduce detection of the coronavirus because they have a coating. Which is able to dispel the splash of saliva. Anyway, to limit further transmission of Covid19, continue to implement health protocols using personal protective equipment (PPE) according to standardization for healthcare workers. Personal protective equipment helps protect all part of the medical personnel’s body against the possibility of potential hazards / work accidents.

This study shows that the face is very vulnerable to material and fluid strikes during joint arthroplasty Surgery. The knee and hip protectors used in this study are proven to be used for splashing blood, fat, and body tissues, thereby minimizing exposure to the risk of blood-borne viruses. We recommend using PPE to protect staff and conserve PPE while providing rapid access to emergency care and fulfilling EMTALA obligations for low-risk patients during the coronavirus pandemic..
Goggles are very important for orthopedic surgeons and traumatology doctors, because many surgical procedures are performed for treating musculoskeletal trauma, the use of medical tools and instruments often occurs due to contamination of every member of the health care unit in the operating room and contaminating the operating table surface in an area of up to 6 marounds (35).

In addition, saliva splash in the mouth and nose area less frequently than in the eye area, hip replacement is currently one of the most common orthopedic surgeries, although patient satisfaction in the short and long term varies widely. However, orthopedic specialists are advised to protect the eyes and face from conjunctival hazards (40).

Now telemedicine treatment is one of the options taken by the community to reduce contact with hospitals, making it easier to provide electronic Personal Protective Equipment (PPE) for health workers. People’s concerns about visiting the hospital are also their own problems, when someone has a medical problem but is afraid of contracting it if they go to the doctor for treatment. During the handling of the Covid19 pandemic, many hospitals were over capacity. Therefore, the government wants to ensure that only priority patients are allowed to come to the hospital, while patients who do not need hospitalization can be handled through online services such as video or telephone. Telemedicine services can save time and money and help patients decide whether to stay at home alone, or need to visit a doctor, or enter the emergency room when sick (41).

To prevent further spread necessary, preventive measures serve to minimize the risk of cases spreading, detect cases early, and minimize the chance of spreading the virus. Infection Prevention and Control Strategies focus on isolation at home or at home care for people with mild symptoms such as people in close monitoring and symptomatic high-risk contact while paying attention to the possibility of worsening (42).

Medical masks can protect people who wear masks from becoming infected, and can prevent transmission from other people who have symptoms, therefore WHO does not recommend the use of medical masks for people who do not have Covid19 symptoms. It is important to wear a mask properly, the use of an inappropriate mask does not protect the risk of Covid19 infection. In the interim guidelines, the WHO recommends that medical masks be prioritized for medical personnel (43).

The guidelines for high-risk situations recommend the use of medical masks for all those working in the clinical area of health facilities when treating patients. Some examples of personal protective equipment that must be used to protect and safeguard medical personnel for prevention in Covid19 patients are the use of surgical masks, eye protection, face shields and medical gloves with proper use (44-45).

International tourists must be vigilant when entering areas affected by the outbreak, such as avoiding direct human contact for people with acute respiratory disease, diligently wash hands and maintain cleanliness, especially after coming into contact with people or surfaces; the correct application of cough etiquette can help control Covid19; and coping with contact with live or lifeless pets or consuming bats or other animals. People should reduce traveling outside the home when it is not important (46-47).

Improve life patterns (adequate sleep, healthy and balanced diet also exercise) and regular health checks to prevent and control coronavirus infections (48-49). CDC recommendations, effective ways to deal with the global coronavirus pandemic are: limit close contact with other people who are symptomatic and asymptomatic, protect the mouth and nose when coughing and sneezing b with a tissue or handkerchief and dispose of the tissue in the existing trash, reduce traveling to red zone areas. Wash both palms for 20 seconds using soap and water, If it is quite difficult to find water, it is advisable to always have a Hand Sanitizer with an alcohol content of at least 60% which is believed to be able to kill germs, limiting touching the face because it has the potential to increase the risk of pathogenic infections, also clean and disinfect frequently touched surfaces (50).

**Curbing**

Lockdown, also a term widely used during the coronavirus pandemic as a substitute for “mass quarantine” where residents are ‘forced’ or advised to stay at home or live in settlements to prevent harm and in this case to limit the spread of the virus. Therefore, it is mostly used to ward off ongoing outbreaks such as the Covid19 outbreak, requiring residents to only leave their homes to attend work that is really important (urgent), buy food or medicine, or go home, sick (51).

This lockdown strategy has proven capable of stemming the Covid19 outbreak in China and limiting exports of reactive infected cases abroad. However, it can also have various side effects due to fixed stay at home orders, thereby jeopardizing personal health and disrupting social habits. It is necessary to consider a strategy that does not violate the provisions of regional regulations and needs to be immediately determined and communicated to the general public to prepare for the Covid19 outbreak (52-53).
Reducing physical activity, one of which is by locking down and staying at home, can also do sports both at home and outside the home. At home you can do exercise, cooking, doing housework, etc. Outside the house can be by cycling, jogging, walking in the morning, etc (54).

For the stay at home rules to do some individual outdoor sports, such as they can also be done indoors, such as brisk walking (vigorous), running and cycling indoors (eg treadmill, stationary bicycle, etc.). Strength training or aerobics requires very specialized and expensive equipment in addition than training bands, fitness balls, video or app-guided training without equipment. In addition, you can also do light exercise such as climbing stairs, doing step exercises, or even strength training (55).

The need to avoid all types of sports injuries be it direct sports, indirect sports, or excessive exercise with adequate warm-up and proper exercise equipment (56).Because most of the need for health resources, especially in the emergency room and intensive care unit (ICU), this time it is confused to handle a large number of Covid19 patients who are infected with the corona virus and need immediate treatment (57). Because the direct result of the corona virus is characterized by a fairly large disturbance, it may be due to systemic inflammation of stimulates an immune response, particularly protecting against infection with foreign macromolecules or invading organisms that involve and injure T cells also suppressing blood flow to organs (58).

May also be advisable Immunomodulatory foods have an immune function that is able to repair damaged body cells thereby strengthening the immune system. There are several kinds of synthetic vitamins, examples of which are vitamins A, C, and D to increase body immunity of the Novel Coronavirus Disease (nCoV-19) (59-60).

CONCLUSION

Recommendations for preventing effective ways to deal with the global coronavirus pandemic are: limit close contact with other people who are symptomatic and asymptomatic, protect the mouth and nose when coughing and sneezing b with a tissue or handkerchief and dispose of the tissue in the existing trash, reduce traveling to red zone areas. Wash both palms for 20 seconds using soap and water, If it is quite difficult to find water, it is advisable to always have a Hand Sanitizer with an alcohol content of at least 60% which is believed to be able to kill germs, limiting touching the face because it has the potential to increase the risk of pathogenic infections, also clean and disinfect frequently touched surfaces. Recommendation for curbing the spread of Covid19 include: lockdown, physical inactivity, and weight gain.

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