

House-Hold Safety Recommendations in COVID-19 Pandemic

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ABSTRACT

Since COVID-19 is erupted as a pandemic world-wide, according to the World Health Organization (WHO), about 4,758,937 cases are confirmed and approximately 316,300 deaths are claimed. Therefore, every individual is confining himself in quarantine at home. As people are staying at home for about 3 months, house-hold precautions are important and should be followed to mitigate the proliferation of disease. Today, social distancing has become a national rule all over the world, so being eschew is loving yourself. As the world is hit by drastic pandemic, which has changed the entire pattern of living and everyone is in tough situation. To help the community, it is necessary to have some guidelines and recommendations to opt regarding household functioning. Meanwhile, it is important to provide awareness and explicit misconceptions about coronavirus and COVID-19, also to clarify its symptoms, its ways of transmission, and its preventions. Moreover, to suggest house-hold recommendations for COVID-19, including: health-care practices, hygiene-parameters, and transmission obstruction. Along with health-care suggestions for old-age persons, children, and most importantly for exposed individuals. Above all these usual discussed points, choice of food is prime need to live alive, when you are quarantining yourselves. Thus, choosing certain types of food are suggested to be added in your daily diet, to stay healthy. Hence, practical implementation of all these recommendations are core part of minimizing the spread of disease and remaining safe and healthy.

Keywords: COVID-19, Coronavirus, Pandemic, House-Hold, Home-Based, Safety, Precautions

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INTRODUCTION

Coronaviruses are enveloped RNA viruses that are distributed broadly among humans, other mammals, and birds and that cause respiratory, enteric, hepatic, and neurologic diseases.¹ Corona virus was initially discovered in animals in 1930.2 while in humans as SARS-CoV in 2003,3 and now corona virus has been reported to cause another infectious disease, COVID-19, which is a major cause of Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2). It has been ranked the third severe respiratory illness after the Severe Acute Respiratory Syndrome coronavirus (SARS-CoV) in 2002 and Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012. Both diseases were zoonotic and associated with the fatal illness that affected the human population in this century. Till now six species of corona virus have been identified to cause human illness. While, six out of four viruses 229E, OC43, NL63, and HKU1 are common and cause cold and flu like symptoms in immunocompromised persons. These viruses usually invade the human immune system in cold weather or when the body is more prone to infectious diseases.⁴ Moreover, patients infected with COVID-19 experience cold and flu like symptoms, but it could be fatal sometimes and deaths are usually reported in immunocompromised persons.

The only effective precautionary measure is to remain well educated about the virus and implement accordingly can slow down its transmission. Educate community on individual level to adopt complete hygienic measures. The mode of transmission of COVID-19 is via droplets of an infected individual. Mainly respiratory infections are transmitted through droplets of different sizes; droplets of size $>5-10\mu\text{m}$ are considered as respiratory droplets. According to the current reports, primary transmission of COVID-19 is known to spread through droplets and physical contacts, yet there are no reports of airborne transmission. Fomites around the infected individuals are also the immediate source of transmission.⁵

Right now, there is no vaccine or treatment available for COVID-19. However, there are many drugs that are being used on a trial basis such as certain antimalarial drugs. As till May, 2020 mid, a total number of 4.79 million confirmed cases of COVID-19 and 320,000 deaths globally; and 44,000 confirmed cases in Pakistan, with 209 deaths are reported by WHO. The SARS-CoV and MERS-CoV were transmitted human to human inefficiently,

unlike COVID-19 which transmits human to human efficiently. The transmission is facilitated by social gathering.⁴ This explains the sudden rise in incidence. The mortality rate of SARS was 9.6% and that of MERS was 34.4%. However, mortality rate of COVID-19 is lesser than SARS and MERS which makes it less fatal. However, still we have to take precautionary measures and we have to make sure that we have a good surveillance system, hospitals, enough adequate laboratories to identify cases and to provide efficient health measures. Since there is no identified vaccine or treatment, current efforts are directed towards blocking transmission, isolation, and protection.⁶

In this period of destruction, seeking disaster management is important and giving suggestion to minimize this situation is obligatory at every level, to sustain the social ups and downs together with unity and discipline. Moreover, it has been experienced that, whenever the change occurs, it starts with a single person. In this current situation, if we take the example, that when the vaccine will be made and the first individual will be immunized successfully, it will be that first individual, who stepped in for change and for mankind. Thus, it is necessary for every person to perform his/her part to help each other in implementation of recommendations and clarity of mind regarding pandemic. To provide awareness about coronavirus and COVID-19, its symptoms, its ways of transmission, and its prevention. To educate, about the misconception and myths about coronavirus and COVID-19. To suggest house-hold recommendations for COVID-19, including: health-care practices, hygiene-parameters, and transmission obstruction. To have the choice of food and nutrients in mind to opt in daily diet and health-care suggestions for old-age persons, children, and most importantly for exposed individuals.

Having above intentions in your back of mind as a supportive tools, following preventions and precautions can buckle you up for further competitive situation of pandemic, especially for home-based interventions and safety:

PREVENTION

To prevent infection and transmission of COVID-19, practice the following:

Respiratory Hygiene Measures:

- To make sure that all patients must cover their

mouth and nose while coughing and sneezing to avoid the transmission of disease.

- To ensure the availability of medical masks for patients suspected to have COVID-19 infection.
- In case of any contact with nasal secretion, one must wash hand to maintain personal hygiene.

Hand Hygiene Measures:

- Routinely used method to perform an effective hand hygiene is to rub your hands with ethanol or any other alcohol based product or to wash hands with soap.
- If your hands are not dirty with soil or any other substance, then ethanol based hand sanitizers are preferred to rub with.
- If the hands are dirty with soil or any other substance, then they must be washed with water and soap before applying the sanitizer.
- Try not to touch your face and eyes unnecessarily.
- Make sure to carry out social distancing, if you have to go out, then keep the distance of 2m at least.

After going through the preventions and precautions, following are misconceptions regarding coronavirus and COVID-19 disease. Which play a part in clarification of minds, whereas myths are still being discussed in localities after issuance of "Myth Buster" by WHO, recently in March-April, 2020. Moreover, we will discuss only few myths related to house-hold safety.

Myths about Corona Virus & COVID-19

Virus is an obligate intra-cellular parasite, it is not a living organism if we draw the line between living and nonliving organisms, it lies at the border.⁷ Many people on social media are associating myths with COVID-19. There is a list of myths that have been neglected by WHO. Some of them are listed below.⁵

The only preventive measure is Don't get the virus, Don't give virus.⁷ Furthermore, as the house-hold recommendations are discussed before in previous articles and studies since COVID-19 affected as epidemic. But this is the updated and complete version for quarantined and isolated families in

all dimensions, which ultimately contributes to the meantime situation and updated study as well. Its recommendations covers vast area from healthy to exposed ones, from children to old-ones, nutrient selections from healthy to junk ones and from indoor activities to outdoor ones. These recommendations are summed-up extract from the reviewed literature, regarding house-hold suggestions related to COVID-19 pandemic. Now, lets have a look to the recommended statements given below, but again action and implementations are important for every individual.

RECOMMENDATION STATEMENTS

Following are the recommendation statements for house-hold safety in coronavirus disease pandemic:

- Primary Intent
- Structuring House-Hold Environment
- Performing Daily Activities and Tasks
- Food Recommendations
- Care of Children
- Care for Old-One
- What if a Family Member is exposed?

PRIMARY INTENT

Recommendation 1:

Develop a house-hold-focused Care Plan, that comprise of different activities, provide proper awareness to family members, make organizational structure and a healthy environment to avoid mental illness regarding COVID-19 pandemic.

House-hold focused involvement is an effective prevention in the mitigation of the spread of disease, not just COVID-19, but also other numerous diseases as well. While, initial help can be taken through the internet, electronic media, digital communications regarding the care of COVID-19 or can discuss it with family doctors by face-to-face meetings along with the entire family for awareness and proper understanding of disease.⁸ In this discussion, an appropriate care plan should be made by the consultation of respective doctor about its treatments, precautions, preventions, preferences and advance directions for terminal ailment on palliative care.⁹ House-hold involvement is tested in randomize control trials (RCT) that stood with positive outcomes regarding medication.¹⁰

Moreover, satisfied ratings and acceptability were received by patients and their family members.¹¹

Structuring House-Hold Environment

Recommendation 2:

The house custodian is responsible for reminding and helping family members for proper implementation of plan.

Family caregivers (FCG) play a vital role in the direct and supportive care to patients in the family. This strategy is used for patients with chronic infections like tuberculosis (treatment partner) and patients with cancer. The hospice strategy in cancer care is supportive of family caregiver's involvement in care planning. They are encouraged to take a leadership role in facilitating the implementation of a care plan and conduct of family affairs.¹² The importance of FCG will further be emphasized in the Universal Health Care reform as there is a shift from hospital care to outpatient and home-based care.¹³

In the context of COVID-19 epidemic, there is a need to encourage the cooperation of all family members to sustain their adherence to the family plan. The effectiveness of FCG in this aspect has been reviewed in several publications. In families with terminal illness, FCG was able to engage other family members into decisions and cooperation. In one randomized controlled trial, FCGs were able

to engage family members into discussion and agreement on the care plan. After the care plan was agreed, FCGs were also able to have continued discussion, modification, and implementation of the plan.¹⁴

However, FCGs may struggle with a complicated medical management plans. There may be a need for structured training. Such training can be a series of face-to-face meetings, web-based, or use of other digital technologies. Face-to-face trainings has been used to improve the FCG's ability to decrease inappropriate use of medications in patients with dementia.¹⁵ Because of the grave task given to them, some FCG develop stress and anxiety during care giving. A web based training program has been successfully used to address the FCG's anxiety and distress.¹⁶

Recommendation 3:

Identify the weak subjects, such as: old-aged, children and member existing chronic ailment are at risk and should need extra care.

March, 2020, in China rate of death modalities were severe with 79,968 confirmed cases. At that time most of them were old-aged and people with certain diseases, who were suspected to infection with serious results.¹⁷ While, in the United States, the CDC suggested forceful measures against the transmission of COVID-19 and warned old and

Myths	Truths
It is generally considered that the virus transmits faster in cold weather rather than hot weather even killed in humid and hot weather.	There are no such evidence of COVID-19 spread in cold weather and killed on hot weather, Virus is transmitted in all types of environment.
COVID-19 spreads through mosquito bite.	It is not vector borne disease, there are no such evidence of transmission by mosquito.
Equipment of hand drying could kill virus.	Such equipment do not kill virus but proper hand washing could might wash out the virus particles on your hands.
Individual died as soon as it is infected by virus.	Reports and evidence showed that there is 96-97% recovery rate of COVID-19 infected patients.
Using alcohol during illness could cure the infected person.	Using alcohol reduces immunity and enhances the chance of serious infection, so alcohol consumption does not cure COVID-19 infected patient.
COVID-19 does not infect young people	It can infect anyone, there is no age limit. WHO recommended everyone to follow hand and respiratory hygiene.
COVID-19 patients can be treated by antibiotics.	Antibiotics cannot cure viral diseases even broad spectrum antibiotics like Penicillin cannot treat COVID-19.

weak ones to check themselves up. Whereas, it is recommended that elderly and people with chronic illness should take appropriate measures including: maintain 2-meter gaps, avoid going in public and wash hands often to reduce the chances to get sick.¹⁸

Recommendation 4:

Educate your maid, baby-sitter or helper, who is living with you, about COVID-19 and help them too to follow the plan.

Educate persons who are quarantined about IPC (Infection Prevention and Controls) measures. All persons working in the home quarantined area (including: maids, baby-sitters, helpers, or nurses) need to have training on standard precautions before the quarantine measures are imposed. The quarantined persons should understand the importance of promptly seeking medical care if they develop symptoms.⁵

Recommendation 5:

Arrange a separate room for isolation that in case, if a member may get exposed to COVID-19.

The experiences of this COVID-19 outbreak emphasizes the importance of environmental and infection control at home. Transmission of airborne infection depends on the concentration of breathable infectious pathogens in room air. Room infection control is achieved by removing contaminated air from the room, controlling the direction of airflow and air cleaners.¹⁹ Negative pressure isolation rooms have been a standard strategy to control the spread of not only of tuberculosis but as a part of general infection control.²⁰ The negative pressure room at home is simply a room with an exhaust fan installed either in the windows or ceiling. This is a common appliance for bathrooms and toilet.

Recommendation 6:

All family members should strictly remain at home, avoid celebrations and gathering. Try not travel and specially hinder yourselves to use public transport, during the community quarantine periods.

During an evolving epidemic, community mitigation strategies, such as social distancing, can slow down virus transmission. Other strategies are cancelling or postponing school or after-school activities or activities with a high rate of mixed contact.²¹ At present, therapeutic strategies for COVID-19 are

only supportive and prevention aimed at reducing transmission in the family and community using a strict quarantine strategy. Aggressive isolation measures in China have led to a progressive reduction of cases. In Italy, because of the aging population, political and health authorities are implementing home containing efforts especially for the high risk and elderly.²² Singapore, adopted a multipronged surveillance strategy that included applying the case definition tracing contacts of patients with confirmed COVID-19. Containment measures, including patient isolation, quarantine, and community education and precautions were performed to minimize disease spread. These have been effective in suppressing expansion of the outbreak.²³ On the other hand, this strategy of quarantine and isolation did not seem to work in South Korea, which already has more than a thousand identified cases. Its below 1% mortality compared to Italy, however, can be explained by difference in population demographics.²⁴

Public health experts studied the Wuhan, China, experience and proposed conceptual models for the COVID-19 outbreak. In this model, the factors that affect limit spread are individual behavior, holidays, extension, hospitalization, and quarantine of sick persons.²⁵ Other models suggest that intensive contact tracing followed by quarantine and isolation, can effectively reduce the number and transmission risk. On top of these strategies, Beijing also implemented strict travel restriction, increased the effectiveness of quarantine more than a thousand times. With these strategies, the spread can reach its peak in two weeks from which it is expected to decline. However, it is essential to estimate the economic cost implication of such intervention.²⁶

Performing Daily Activities and Tasks

Recommendation 7:

Take sunlight daily and indulge yourselves in exercises that produce diaphragmatic breathing (rope-skipping, weight-lifting etc) to get fresh air and to rebuild walls of lungs.

Fresh Air is a Disinfectant Patients treated outdoors were less likely to be exposed to the infectious germs that are often present in conventional hospital wards. They were breathing clean air in what must have been a largely sterile environment. We know this because, in the 1960s, Defence scientists proved that

fresh air is a natural disinfectant. Something in it, which they called the Open Air Factor, is far more harmful to airborne bacteria and the influenza virus than indoor air. They couldn't identify exactly what the Open Air Factor is. But they found it was effective both at night and during the daytime.²⁷

Sunlight and Influenza Infection
Putting infected patients out in the sun may have helped because it inactivates the influenza virus. It also kills bacteria that cause lung and other infections in hospitals. They knew it was a disinfectant. One advantage of placing patients outside in the sun is they can synthesize vitamin D in their skin if sunlight is strong enough.

Low vitamin D levels are now linked to respiratory infections and may increase susceptibility to influenza. Also, our body's biological rhythms appear to influence how we resist infections. New research suggests they can alter our inflammatory response to the flu virus. As with vitamin D, at the time of the 1918 pandemic, the important part played by sunlight in synchronizing these rhythms.²⁸

Recommendation 8:

Try to opt personal hygienic etiquettes, which should include: daily bath, regular and pertinent hand-washing, try to minimize your contact with nose, eyes or mouth. Follow proper coughing and sneezing ethics, use tissue to clean nose. Strict use of personal eating utensils (including: plates, glass, spoon or fork etc.), bathing-towels, blankets, bedclothes etc.

Hand washing with soap and water for 20 seconds or more, covering your mouth and nose while coughing or sneezing, daily bath, minimal hand contact with facial area are standard recommendations to minimize respiratory infections. The effectiveness of these recommendations has been shown in several randomized controlled trials. One trial in a village in China compared intensive education and training on hand hygiene while the other group received general hygiene education. The hand hygiene group resulted to better knowledge, improved practice and reduced incidence of hand-foot-and-mouth disease.²⁸

It does not matter if the soap or detergent has antibacterial property or none. In one trial, households were randomized to use either commercially available non-antibacterial or antibacterial general cleaning products, laundry detergents and hand-washing soap. The incidence

of respiratory symptoms during an average of 24 months observation was similar whether the products had antibacterial or non-antibacterial property.²⁹ Personal hygiene education and training can also be delivered using video and digital media. This strategy has been shown to be acceptable to parents and caregivers. Encouraging hand hygiene has also been tested in the workplace. In a cluster trial of 21 working units, persons in the soap-and-water arm reported a significant 24% lower weekly prevalence of gastrointestinal tract illness with some marginal effects on respiratory tract illness. There was no difference if hand hygiene was either by soap and water or alcohol-based rub.³⁰ Providing a comprehensive hand hygiene program in the workplace also significantly reduced the incidence of health care claims and increased employee satisfaction.³¹

Recommendation 9:

Frequent cleaning of daily used surfaces more likely: mobiles, optical-glasses, different gadgets, door-handles (especially refrigerators, stove, microwave oven etc), arm-chairs, table-tops, toilets seats and sink-basins with ordinary cleansing agents, detergents or a mixer of water and alcohol.

SARS-CoV-2 is stable on plastic and stainless steel and viable virus was detected up to 72 hours on these surfaces. Corona viruses are sensitive to heat and can be killed at 56°C for 30 min. In addition, ether, 75% alcohol, chlorine disinfectant, per acetic acid, and chloroform can effectively inactivate the virus. These are common household cleaning products that can be used for home sanitation and safety. Home environment safety is a common issue that affects the health of children in the household. In one survey of community households, there was a high rate of safety failures.³²

Improved sanitation in the home has been shown to improve the health of household members. A community-randomized-controlled trial in 51 rural communities was done to evaluate whether an environmental home-based intervention package, consisting of improved solid-fuel stoves, kitchen sinks, solar disinfection of drinking water and hygiene promotion, reduced lower respiratory infections and diarrheal disease. After the trial, the mean diarrhea incidence was 2.8 episodes per child-year in the intervention compared with 3.1 episodes in the control arm. There was no observed difference in the incidence of respiratory tract infection.³³ Cleaning personnel should wear disposable gloves when cleaning surfaces or

handling clothing or linen soiled with body fluids, and they should perform hand hygiene before putting on and after removing their gloves.⁵

Recommendation 10:

When a person goes out, he must wear surgical-latex gloves and masks for prevention and when he returns back to home, he must change clothes and spray the brought stuff with detergents, before using them, specially in the days of pandemic.

As the environment is contaminated all around now a days, regarding COVID-19 pandemic. We do not know who and where things, surfaces, places, and bodies are corona-sufficient. Therefore, we should appropriately follow the precautions to minimize the transmission, whereas we should change and clean clothes, bed-sheets, and towels accordingly using laundry soap and water or machine wash at 60-90 °C (140–194 °F) with common laundry detergent, and dry them thoroughly.⁵

Recommendation 11:

Indulge yourselves and other members in indoor recreational activities such as: painting, sketching, reading, home-based camping, sports etc.

There is substantive evidence of many different psychological and social health benefits of participation in sport by children and adolescents. Furthermore, there is a consensus that participation in sport for children and adolescents is associated with improved psychological and social health, above and beyond other forms of leisure-time PA. More specifically, there are reports that participation in team sports rather than individual activities is associated with better health. It is conjectured that this is due to the social nature of team sports, and that the health benefits are enhanced through the positive involvement of peers and adults.

However, the research is predominantly based on cross-sectional studies. In light of the research evidence, acknowledging that research to date is predominantly based on cross-sectional studies, it is recommended that community sport participation are advocated as a form of leisure time PA for children and adolescents; to not only improve the obesity crisis associated with low PA levels, but to enhance other psychological and social health outcomes.³⁴ Experimental studies with small groups generally showed moderate reductions in depression, anxiety, and some related physiological signs.³⁵ Research findings establish that participation in creative activity positively

correlates with improved mental health.³⁶

FOOD RECOMMENDATION

Recommendation 12:

Maintaining a healthy balanced diet incorporating specific foods can boost our immunity that can be a key to lower the risk of infection. With the continued rise in Covid-19 cases, human immune system might need to fight back to the possible viral infection, it is important for us to be more mindful of in taking the food that enhances our immunity.

A healthy and nutritious balanced diet is essential to keep us healthy and well. Adequate nutrition is required for all the cells to function properly and support immune cells to initiate responses against pathogens. The performance of immune system is influenced by what we eat. Food rich in nutrients such as copper, folate, iron, zinc and vitamins A, B6, B12, C and D play a crucial role in our immune system. Experts say that boosting your immune system may be essential during the times of increased risk, like now. There some healthy ingredients easily available in kitchen that boost our immune system are as follows:

- Almonds are popular among dried foods. It is an excellent source of Vitamin E and antioxidants that protect against oxidative stress. They also contain manganese, fiber and helps to reduce cholesterol level. In addition, almonds is rich in magnesium that may benefit the immune system. Check how often you are taking it during the lockdown.
- Broccoli is rich in Vitamin A, C and E. Broccoli contains antioxidants such as sulforaphane and phytochemicals that can fight against viruses and support the immune system. It can be a good choice to eat regularly if it is available during this time of lockdown.
- Fennel Flower or Black-Seed, usually called "Kalonji" in Asian countries. It is a popular spice helps in giving a nice aroma to food. But, it has some miraculous effects against COVID-19, as it is anti-inflammatory, anti-oxidant (can prevent or slow damage to cells caused by free radicals, unstable molecules that the body produces as a reaction to environmental and other pressures.) and anti-bacterial as well.
- Garlic a popular and pungent herb with a characteristic aroma, is rich in sulfur-containing compounds. It helps to boost immune system

and can fight against common cold and infections. It is widely believed to have antiviral and antibacterial effects, with health benefits such as reducing risk of heart disease and lowering blood pressure.

- Lemon/Orange/Kiwifruit are citrus rich fruits and are sources of Vitamin C. However, 100 grams of kiwifruit contains 154 % of Vitamin C that is almost twice of lemons and oranges. Kiwifruit contains many minerals and vitamins such as Vitamin A, B6, B12, E and potassium, calcium, iron as well as folate, which gives our body a nutritional boost. Vitamin C helps in strengthening the immunity of the body against harmful pathogens. It may not be the season for orange now but check if lemon or kiwi are available.
- Melon Seeds are a powerhouse of nutrients like folate, iron, zinc, copper, magnesium, potassium. These seeds are considered to be highly nutritious, as they are also rich in amino acids, proteins and vitamin B complex. All these nutrients together help in boosting your body's metabolism.
- Mushrooms as a source of Vitamin D, protect us against respiratory diseases which is very significant at the time of covid-19 outbreak. Research states Vitamin D supplementation in our diet can lower the risk for infections like respiratory tract infections by reducing production of pro-inflammatory compounds in body.
- Spinach is one of the easy to grow vegetables. Even during this time of lockdown, we can make ourselves available with it. Spinach has beta-carotene, i.e; main dietary source of Vitamin A that increases the disease fighting cells in body. It is also rich in vitamin C and full of antioxidants and nutrients like flavonoids, carotenoids etc. that helps in proper immune function.³⁷
- Sunflower Seeds is one of the widely used ornamental plant. Its seed is incredibly rich in phosphorus, magnesium, copper, calcium, iron, phosphorus, selenium and vitamin E, which can boost the immune system by fighting off free radicals that can damage cells.³⁸ You may have dried sunflower seeds in your kitchen. Remind yourselves to intake more of it.

- Turmeric, a widely used spice is considered to boost immunity. Research suggests that it contains a bright-yellow compound known as curcumin, which might enhance immune function. Curcumin has antioxidant and anti-inflammatory effects.³⁹
- Yogurt as a great source of probiotics, and Vitamin D, is commonly used dessert in every households, has the quality of promoting the immune system. Yogurt can also be beneficial for fighting the common cold and influenza-like respiratory infections and boost our body's natural defenses against diseases.

CARE OF CHILDREN

Recommendation 13:

Help them to wash hands frequently with soap. Refrain them from using hand-sanitizers because unintentionally they may not put their hand into their mouth.

Hand washing with soap and water for 20 seconds or more, covering your mouth and nose while coughing or sneezing, daily bath, minimal hand contact with the facial area are standard recommendations to minimize respiratory infections. The effectiveness of these recommendations has been shown in several randomized controlled trials. One trial in a village in China compared intensive education and training on hand hygiene, while the other group received general hygiene education. The hand hygiene group resulted in better knowledge, improved practice, and reduced incidence of hand-foot-and-mouth disease.²⁸ Taking importance of hand-washing from the research conducted in China's village as discussed before, can be concluded in such a way that using alcohol-based hand sanitizers can lead to dry skin (All those drying effects can lead to increased appearance of fine lines and wrinkles, as well as calluses, cracks, flakiness and leading to increased dehydration), infections, and even alcohol slow poisoning.

Moreover, weakens immune system as sanitizer disturbs and kills normal natural skin microbiota and regular usage may disrupt the natural barrier function, reducing skin's ability to protect itself. Whereas, in case of children it is dangerous to use and as well as for adults, yet they can somehow sustain their bodies.

Recommendation 14:

Don't let them go near the coughing and sneezing individual. Clean and disinfect their toys, feeding-cups, walkers, cot-bed etc regularly. Make a proper diet plan and watch for the sign of stress in your child.

The mode of transmission of COVID-19 is droplets of an infected individual. Mainly the respiratory infections are transmitted through droplets of different sizes, droplets of size $>5-10\mu\text{m}$ are considered as respiratory droplets. According to the current reports, the primary transmission of COVID-19 is happening through droplets and physical contacts, yet there are no reports of airborne transmission. Fomites around the infected individuals are also the immediate source of transmission.⁵ So, it is necessary for children to avoid going near the coughing or sneezing person. Moreover, to maintain their hygiene, daily or after some intervals disinfect their routinely used surfaces including: toys, remotes, feeding-cups, sleeping area or playing area. Regarding these days make a diet-plan for young-ones to make their immunity strong, provide them healthy edible and liquids including: barley water, try to use milk as shakes of banana, dates etc. Furthermore, these days everyone is talking about corona and hammering it into our minds, though children listen and might get stressed by news of daily deaths or patients. So, see for the stress marks and try not to talk about its severity or destruction in front of innocents.

CARE OF OLD ONES

Recommendation 15:

Pay extra attention to those, who have existing chronic illness such as: cardiovascular diseases (cerebrovascular disease, ischemic cardiopathy etc), respiratory diseases (asthma, COPD etc) and Diabetes mellitus.

March, 2020, in China, the rate of death modalities was severe with 79,968 confirmed cases. At that time, most of them were old-aged and people with certain diseases, who were suspected to infection with serious results.¹⁷ While, in the United States, the CDC suggested forceful measures against the transmission of COVID-19 and warned old and weak ones to check themselves up. Whereas, it is recommended that the elderly and people with chronic illness should take appropriate measures including: maintain 2-meter gaps, avoid going in public and wash hands often to reduce the chances to get sick.¹⁸

Recommendation 16:

Fresh Air is a Disinfectant
Patients treated outdoors were less likely to be exposed to the infectious germs that are often present in conventional hospital wards. They were breathing clean air in what must have been a largely sterile environment. We know this because, in the 1960s, Defence scientists proved that fresh air is a natural disinfectant. Something in it, which they called the Open Air Factor, is far more harmful to airborne bacteria and the influenza virus than indoor air. However, they found it was effective both at night and during the daytime.¹⁷

Move them to the window room and help to go for fresh air. Talk frequent to them on different topics, to keep them socialize. Provide them good nutrients and indulge them in different house-hold activities and recreational activities as well.

Modern societies are experiencing radical technological, economic, demographic, and social changes that affect major alterations in individual lives and the roles they play. Socialization accomplished in childhood is clearly insufficient for adulthood. These changes in social location may necessitate substantial changes in identity, attitude, and behavior. At the same time, technological development leads to the continuous creation of new roles, which did not exist at the time children were being socialized, and increasing numbers of older adults find that the skills they learned have become useless. New learning becomes imperative, though difficult. So, it is necessary to give time to adults especially in this crucial time of social distancing and tense environment to make their health better and avoiding the chances of depression in them. The house guardians should encourage their youngsters to talk and give quality time to adults and old-ones. By this they will understand and love each other, moreover both generations will interact with each other as house is built from bricks, but home is built by care and love.

What if a FAMILY MEMBER is EXPOSED?

Recommendation 17:

Advise the exposed person to remain in room, use mask, maintain physical distance of approximately 2 meter, monitor symptoms and clean the stuff by him or herself, to avoid further transmission.

Strategies that include isolation of cases while infectious exclusion and quarantining of individuals without evidence of immunity and vaccination have been shown to be effective in controlling measles outbreak. However, the idea to maximize

containment should be based on the expected benefit of reactive interventions, balanced against the logistical challenges in implementing them.⁴⁰ Isolation and containment efforts must be done carefully as there is ambivalence about adopting isolation and personal distancing due to their perceived adverse impact and potential to attract social stigma.⁴¹ This is already being seen in the current response to the COVID-19 pandemic. Discrimination and prejudice towards a certain country or people because of fear or misinformation have been seen on social media. This might jeopardize the efforts to control the pandemic.⁴² Other interventions include screening at ports of entry and personal protection like wearing masks, gloves, and gown. The effectiveness of these strategies is the subject of a Cochrane meta-analysis during the period of H1N1 outbreak. The results showed that hygienic measures, such as handwashing, especially around younger children, can prevent the spread of infection in the household. Surgical masks or N95 masks were equally consistent effective measures. N95 mask was equal to simple surgical mask but more expensive, uncomfortable, and irritating to the skin. There was limited evidence that social distancing was effective, especially if related to the risk of exposure.⁴³ These interventions were also subjected to health economic analysis in the background of H1N1 epidemic. The results showed that hospital quarantine is highly cost-effective. However, school closures, antiviral treatments, and social distancing were not cost-efficient measures. The authors, however, concluded that such interventions may become cost-effective for severe pandemics and when there is human-to-human transmission.⁴⁴

Recommendation 18:

See for the symptoms for 14 days, if they are mild then continue home quarantine, use paracetamol for fever and consult your family doctor. If symptoms get severe, call respective hospital, before going to hospital.

A recent scoping review of the epidemiology, causes, clinical diagnosis, prevention, and control of COVID-19 reported that the initial symptoms include fever, cough, fatigue, pneumonia, headache, diarrhea, hemoptysis, and dyspnea.⁴⁵ It can also present as an asymptomatic carrier state, acute respiratory disease, and pneumonia. Adults represent the population with the highest infection rate based on recent statistics. However, neonates and children can also be infected. Severe cases are

more likely to be older patients with underlying comorbidities compared to mild cases. In addition, nosocomial infection of hospitalized patients and healthcare workers and viral transmission from asymptomatic carriers are possible.⁴⁶ The figure below can guide the family on when the symptoms might appear if a member is exposed or affected.

There are few publications describing the course of illness in mild cases. A case report revealed that patients' symptoms started to appear on the 3rd day. The symptoms were usually slight sore throat, cough, and mild fever. After testing positive for COVID-19, the symptoms disappear by the 10th day. However, the polymerase chain reaction can remain positive until the 21st day.⁴⁷

Recommendation 19:

Don't panic in this situation, be courageous and supportive for an exposed member, keep him psychological healthy and socially supportive. Moreover, provide him adequate nutrition, sleep and rest.

It is necessary to highlight that about 81% of people with COVID-19 have mild disease and do not require immediate hospitalization (Wu Z and McGoogan JM 52). There is no specific treatment suggested nor the vaccine is formulated either for COVID-19 until now. Whereas, at home for mild cases, symptomatic and supportive treatments include: Anti-pyretic for fever and appropriate liquids and nutrition. While, for moderate to high risk, patients need to be admitted to hospital for oxygen therapy and major treatment involvement.²¹

CONCLUSION

As discussed before COVID-19 disease have been declared as a pandemic in early 2020 and about 4,758,937 confirmed cases with 316,300 deaths are reported world-wide till now. To get rid of this disease, WHO recommend quarantine as a preventive measure for further spread of disease. So, in this case there is a need of house-hold interventions for families are important, who are isolated in their homes and don't know how to repel or face the situation when you are quarantined. To encourage and suggest several put-ups, we have compiled a set of recommendations to opt and implement upon them, to mitigate transmission of disease and provoke awareness in them to tackle the situation practically. It is an important piece of literature for FCG to maintain the decorum and

respond in every situation regarding COVID-19 within the premises of house. As a summary, we recommend “Stay home to save world and stay safe to save generations, not with the fear of COVID-19 disease, but to live for each other with love, care and respect. Give quality time to your family and make these days healthy, happier and precious for one another in this tough time”.

Abbreviations:

Following are some of the abbreviations discussed above in literature:

COVID-19	Coronavirus Infectious Disease-2019
M E R S - CoV	Middle-East Respiratory Syndrome - Coronavirus
SARS-CoV	Severe Acute Respiratory Syndrome - Coronavirus
FCG	Family Care-Giver
IPC	Infection Prevention and Control
PA	Physical Activity

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