

## Household hygiene and sanitation in rural and urban area: Special emphasis on covid19 pandemic

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### **Abstract**

*The provision of safe water, sanitation and waste management and household hygienic conditions is essential for preventing and for protecting human health during all infectious disease outbreaks, including of coronavirus disease 2019 (COVID-19) in both rural and urban. Hygiene and sanitation approaches are needed to prevent the transmission of microorganism directly and indirectly. Indians faced great challenges namely urban area density, air pollution, and smokers, low hand washing habits, low access to clean water and drinking water, open defecation behavior, limited personal protective equipment. Pandemic control policy with the hygiene sanitation approach is carried out with 4 factors namely personal protect equipment, health education, personal hygiene, and sanitation.*

*Keywords: contagious disease, covid19, household hygiene, sanitation, disease transmission*

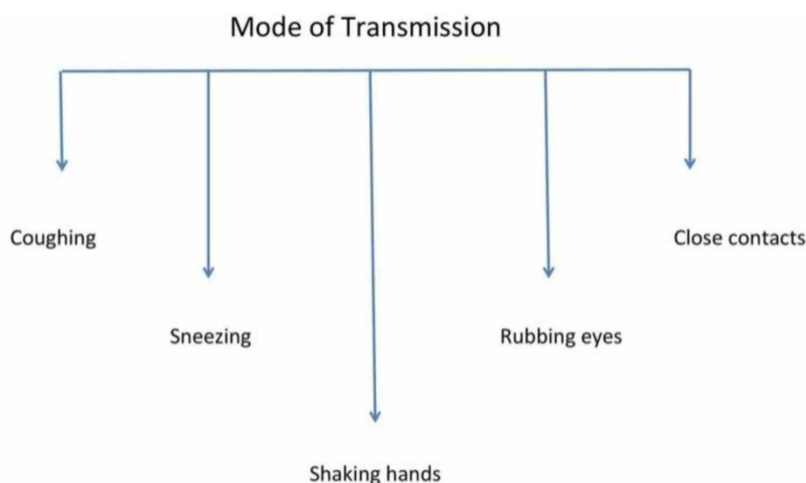
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### **Objective**

The most important household measures for preventing transmission of infectious diseases.

### **Introduction**

The contagious disease including COVID-19 transmission is reported to be directly and indirectly, directly through droplets when coughing (1). Transmission occurs from person to person, especially in those who do not use personal protective equipment (PPE) and contact with infected people (2,3). Therefore WHO recommends doing physical distancing by keeping a distance and avoiding crowds and using masks. Indirectly, by touching the surface of objects that have a virus and then touching the mouth, nose, and eyes before washing hands. SARS COV-2 was even found in eye fluid, this can be a source of infection. Therefore it is advisable to wash hands with soap and disinfecting the surface of objects that are often used. Handwashing with soap in India is very low, so there is a risk of transmission through hygiene.



**Figure 1: Mode of transmission COVID-19.**

The low personal hygiene and poor sanitation indicators in India are a challenge in controlling contagious disease in India. Hygiene and sanitation factors need to get the attention of policymakers in controlling pandemic.

### **The challenges of hygiene and sanitation in India**

#### **Urban area density**

Activity in the crowd can transmit COVID-19 quickly because droplets can spread and infect others (4). For this reason, social distancing is needed to reduce crowds, close schools, workplaces, terminals. Living in a crowded house and a large number of residents and lack of air ventilation can interfere with health, especially airborne diseases (5). The use of proper ventilation can help prevent airborne diseases that generally occur in homes in urban areas. Increasing air ventilation is effective to reduce the risk of long-range airborne transmission and help prevent droplet-borne.

#### **Low hand washing habits**

The hand as a medium of transmission of contagious disease like COVID-19, touches the surface of objects contaminated with viruses and bacteria then touches the nose, mouth, and eyes. The ideal hand hygiene materials for homes in order of effectiveness are:

- Water and soap or alcohol-based hand rubs.
- Ash
- Water alone

#### **Open defecation especially in rural area**

Thousands of Indian children die each year from diarrhea and other diseases caused by poor sanitation. Open defecation, such as in rivers, fields, forests, will pollute the soil and water.

## Disease prevention policy with hygiene and sanitation approach



Figure 2: Corona virus safety. Follow these easy steps to help prevent the spread of COVID-19

### Disinfection and safety management at home

- Engaging in frequent hand hygiene using appropriate techniques. If alcohol-based hand rubs or soap and water are not available or feasible, then using chlorinated water (0.05%) for hand washing is an option as a short-term measure.
- Consideration should be given to safely managing household waste and excreta (faeces and urine) throughout the entire sanitation chain, starting with ensuring access to regularly cleaned, accessible and functioning toilets and to the safe containment, conveyance, treatment and eventual disposal of sewage and sludge.
- Regular household soap or detergent should be used for cleaning first and then, after rinsing, regular household disinfectant containing 0.1% sodium hypochlorite (that is, equivalent to 1000 ppm or 1 part household bleach with 5% sodium hypochlorite to 50 parts water) should be applied.
- PPE should be worn while cleaning; including mask, goggles, a fluid-resistant apron and gloves, and hand hygiene should be performed after removing PPE.
- Frequently touched surfaces throughout the patient's care area should be cleaned regularly, such as tables and other bedroom furniture.
- Bathrooms shared by COVID-19 patients and other household members should be cleaned and disinfected at least once a day.
- Do not share cups, glasses, dishes or cutlery with the infected household members.
- Maintain proper distance from the infected household members.

### Low-cost budgetary details of sanitizer preparation at home

#### Alcohol based sanitizer

Reagents	Amount	Price (INR)
aloe vera leaf extract/gel	50 millilitre (1/3 cup)	10
Rubbing alcohol	150 millilitre (2/3 cup)	65
Complete sanitizer	200 millilitre	75

### Soap based sanitizer

Materials	Amount	Price (INR)
Ash powder	four teaspoons (10 gram)	00
Soap water	one cup (200 millilitre)	15
Complete soap based sanitizer	one cup (200 millilitre)	15

### Conclusion

COVID-19 transmission can occur directly through droplets to other people or indirectly through touching the surface of an infective object. Hygiene prevention such as using masks and washing hands is needed. The challenges in controlling contagious disease is urban area density, air pollution and smoking, low hand washing habit, low access to clean water and drinking water, open defecation, hygiene and sanitation approach namely through personal protect equipment, health education, personal hygiene and sanitation. However, hand washing with soap and water or an alcohol based hand rub is the most important measure for preventing transmission within affordable budge.

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