



# Self-care, Household Cleaning and Disinfection During COVID-19 Pandemic: A Study from Metropolitan Cities of India

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## Abstract

Hygiene has been noticed as one of the most effective procedures against COVID-19 cross-transmission, especially hand hygiene and covering the face with the mask. Therefore, this study tried to peek into the people movements and seeks to understand how people are handling their daily use items like fruits and vegetables, how people are managing unavoidable grooming services, how people are disinfecting themselves after coming from outside, and what all hygienic practices they are following during this pandemic. Furthermore, this study attempts to explore ways through which people are disinfecting their houses. At last, the study seeks to explore the knowledge/information people have about Coronavirus. The study collected primary data through a self-administered questionnaire. A quota sampling technique was used to collect the data. Bivariate analysis was carried out to reach the study findings. Based on the findings, it is the need of the hour to disseminate the information on the use of unhealthy disinfectants as they lack the knowledge about the safe use of various types of cleaners and disinfectants. It is also reiterated that there is an urgency to promote further information on risk factors of Coronavirus among people and compulsion to promote healthy hand hygiene and sanitation practices. There is a need to promote information through mass media and other modes of awareness, such as artwork and announcements.

**Keywords** COVID-19 · Hygiene · Hand wash · Metro cities · India

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## 1 Introduction

When the world was gripped in the fervour of New Year celebrations, China was silently slipping into the outbreak of the 2019 novel coronavirus (2019-nCoV). In December 2019, Wuhan, Hubei province in China, became the centre of coronavirus outbreak [1, 2]. Very soon, the virus started expanding and engulfed countries across the globe. The cases were reported through air travel [3, 4]. In the beginning, the cases were reported to be associated with exposure to the seafood market in Wuhan. Still, person-to-person transmission is occurring at a rapid pace [5–7]. Coronavirus emerged as a public health concern and was declared a pandemic by the World Health Organization on 11th March 2020 [8]. On 29th June 2020, the coronavirus cases crossed the 1 billion mark worldwide [9]. After registering the first case on 30th January 2020, Coronavirus has become a public health concern in India [10]. By 3rd July 2020, India has registered 625,544 cases [11].

The onset of Coronavirus has affected people's lives in several ways, including confining them to their homes, making them adjust for work from home, reducing social contacts, and bringing other changes to their lifestyle [12–14]. This reduction in face-to-face interaction has led to an increase in the use of digital media in the economy and society [15, 16]. The coronavirus pandemic has brought some economic crisis, and a study has noted that amid this pandemic, stock prices of firms across digitally advanced sectors have remained resilient, whereas sectors digitally lagging are the most negatively impacted [17]. Notably, a study has noted a sharp increase in online trade during the pandemic [16]. Tien [18] rightly highlighted the importance of the Internet of Things, real-Time Decision making, and Artificial Intelligence in modern-day lives.

The outbreak of COVID-19 soon became a global pandemic and is currently posing severe challenges to the government across the world. The massive outbreaks worldwide have had severe impacts on the global economy and international relations, exacerbated by limiting cross-border movements of people and goods [19]. Li et al. [19] suggested that adhering to cross-cultural communication and collaboration, strengthening data and information sharing systems, adapting early experiences learned in other countries, utilizing the latest big data and advanced computing technologies would help combat the COVID-19 pandemic. Furthermore, Liu et al. [20] suggested that age-specific social contact patterns can accurately characterize the interactions among different groups of people and, therefore, explain the underlying disease transmission and associated risks in various phases of the outbreak.

Hygiene has been noticed as one of the most effective procedures against COVID-19 cross-transmission, especially hand hygiene and covering the face with the mask [21]. Various studies across different settings had focussed on the importance of hygienic practices in curbing down the menace of Coronavirus [22–24]. However, it is reported that there is a sharp increase in the use of sanitizers, the market shell goes empty suddenly, and people start utilizing unhealthy cleaners and disinfectants. Following which Food and Drug Administration (FDA) has to step out and issue warnings about hand sanitizers that are in question and said that using them can be toxic for the human body as they contain a high level of methanol [25]. That does not stop here; people have started utilizing sanitizers, antiseptic liquids, bleach, etc., to clean the vegetables

and fruits [26]. In India, sanitation practices are not given their due credit, and people do not follow hygienic practices [27, 28].

In a pandemic where hygienic practices can be a boon in limiting Coronavirus transmission, it becomes crucial to explore sanitation and hygienic practices among people. Coronavirus can spread by touching infected food items/groceries and then touching eyes, nose, or mouth [29]. So, it becomes important to understand the practices people employ while handling vegetables and groceries. Furthermore, cleaning and disinfecting household surfaces were linked to reducing coronavirus transmission [30]. Contact with contaminated surfaces followed by touching the eyes, nose, or mouth is one of the vital modes of coronavirus transmission [26, 30]. The genetic material of Coronavirus is enveloped by a fatty layer that is prone to soaps and detergents [31]. Therefore, it becomes important to disinfect floors through detergent. This study sheds light on the practice of disinfecting floors/surfaces by respondents involved.

The spread of Coronavirus has focused on hygiene; however, there is minimal research available from the Indian context that explores the hygienic practices in this pandemic situation in India [28]. This study explores hygienic practices among people in Delhi and Mumbai, India's two biggest metropolitan cities, where the cases are increasing continuously. The former is India's capital while later is economical capital; none of them can be closed for movements to a large extent as many people around India depend on them for survival. Though the Govt. is continuously taking steps, the increase in COVID-19 cases is out of control, which may be directly or indirectly related to the practices people are following. Therefore, this study tried to peek into the people movements and seeks to understand how people are handling their daily use items like fruits and vegetables, how people are managing unavoidable grooming services, how people are disinfecting themselves after coming from outside, and what all hygienic practices they are following during this pandemic. Furthermore, this study attempts to explore ways through which people are disinfecting their houses. At last, the study seeks to explore the knowledge/information people have about Coronavirus.

## 2 Data and Methodology

### 2.1 Study Area and Target population

Delhi and Mumbai were selected purposively as these two megacities are under the radar where movements are not only being done by the residing population but also other states/union territories population because of the various purposes directly-indirectly related to these million-plus cities with the high density and with the availability of the items-resources required to keep away from Coronavirus. The study has been conducted on people living in urban areas and using smartphones in Delhi and Mumbai. The study targeted to capture 400 samples having equal representation from both sexes; however, the final sample was 357.

## 2.2 Methods

The survey was conducted from 15th July to 19th July 2020 in Delhi and Mumbai using a self-administrative questionnaire prepared by the authors. A small pilot study was conducted for the validity and simplicity of the questionnaire, and required changes were made to the questionnaire before sharing same with the study participants. The data was collected using the Google platform as an online survey to provide insights into the knowledge and practices of the targeted population. The Google form link was posted and circulated using various social media platforms like WhatsApp Groups, Facebook, Instagram, and formally through E-mail. The ethical clearance was obtained from Institute Research Ethics Committee.

## 2.3 Informed Consent

The study participants were informed about the objectives of the study at the beginning of the survey. Online informed consent was obtained from each participant before proceeding with the questionnaire. Participants were assured that their confidentiality would be maintained. They could refuse to answer any questions or skip the question any time. The results would only be used for research purposes.

## 2.4 Sampling Technique

Quota sampling technique was used to collect the data. Quota sampling is a non-probabilistic sampling method where we divide the survey population into mutually exclusive subgroups, in this case by age, sex, and the city. Survey questions asked about general awareness, attitudes, and practices related to the use of household cleaners and disinfectants and about specific information regarding cleaning and disinfection strategies for prevention of SARS-CoV-2 transmission. Response frequencies were analyzed using STATA 14.0 statistical software.

## 2.5 Study Variables

The questionnaire consisted of demographic characteristics, including age, gender, education level, work status, place of residence, and the number of family members in the household. The study is focused on hygiene practices apart from that general awareness about SARS-CoV-2, such as knowledge about symptoms, risk factors, and comorbidities of SARS-CoV-2. The hygiene practices included 15 items on the frequency of going out, cleaning hands/clothes/footwear/mask, maintaining personal hygiene, cleaning fruits/vegetables/groceries, frequency of cleaning the house, and disinfectants used for cleaning purposes. Three questions about the knowledge towards the SARS-CoV-2 were asked; Coronavirus cannot affect the healthy people, wearing mask/PPE can prevent the Coronavirus, and Newspaper/Internet/WhatsApp, etc. provide true information related to COVID-19 using a three-point Likert scale "agree," "cannot say," or "disagree."

### 3 Results

The sample of the targeted population is equal in both the cities and both the age groups (< 25 years and 25 + years). Around 82 percent of the sample of the study group were graduated or pursuing graduation at the time of the survey depicting the educational background that the majority of highly educated people can fill up the form; however, most of the individuals handle smartphones these days.

Figure 1 depicts the frequency of visits outside the home in a week among respondents by various background characteristics. One-fifth of the respondents aged less than 25 years went outside the home more than two times in a week, whereas two-fifths of the respondents aged more than 25 years went outside the home more than two times a week. A higher percentage of males (55.8%) than females (11.9%) went outside the home more than two times a week. Around half of the respondents who were working (48.6%) went outside home more than twice a week, whereas only one-fifth (20.1%) of the non-working respondents went outside home more than twice a week. A higher proportion of respondents from Delhi (35.5%), compared to respondents from Mumbai (26.3%), visited outside the home more than twice a week.

Figure 2 shows how respondents in Delhi and Mumbai clean the vegetables. Around two-fifths of the respondents in Delhi (41.9%) and Mumbai (45%) wash their vegetables with normal water, and one-third of the respondents in Delhi (34.9%) and Mumbai (32.7%) wash their vegetables with hot water. Around one-fourth of the respondents in Delhi (25.8%) and a little more than one-fifth of the respondents in Mumbai (22.2%) prefer to keep their vegetables aside for a day before using them.

Figure 3 depicts respondents' frequency of washing or disinfecting floor/house/surface in Delhi and Mumbai. Nearly 14 percent of the respondents in Delhi and 16 percent of the respondents in Mumbai clean their house every time someone comes home from outside. Almost 8.6 percent of respondents in Delhi and 9.9 percent of respondents in Mumbai clean their house once a week, and around the equal proportion of respondents in Delhi (4.8%) and Mumbai (4.7%) clean their home twice a week.

Figure 4 shows how respondents clean or disinfect their floor/surface/house in Delhi and Mumbai. Nearly three-fifths of the respondents in Delhi (58.1%) and Mumbai

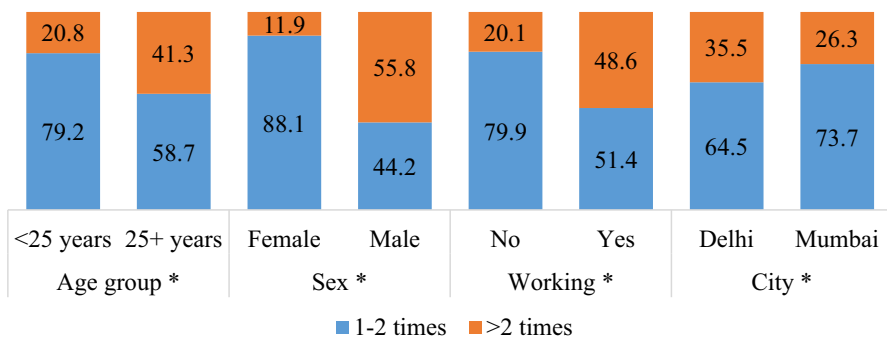


Fig. 1 Frequency of visits outside home in a week among respondents in Delhi and Mumbai

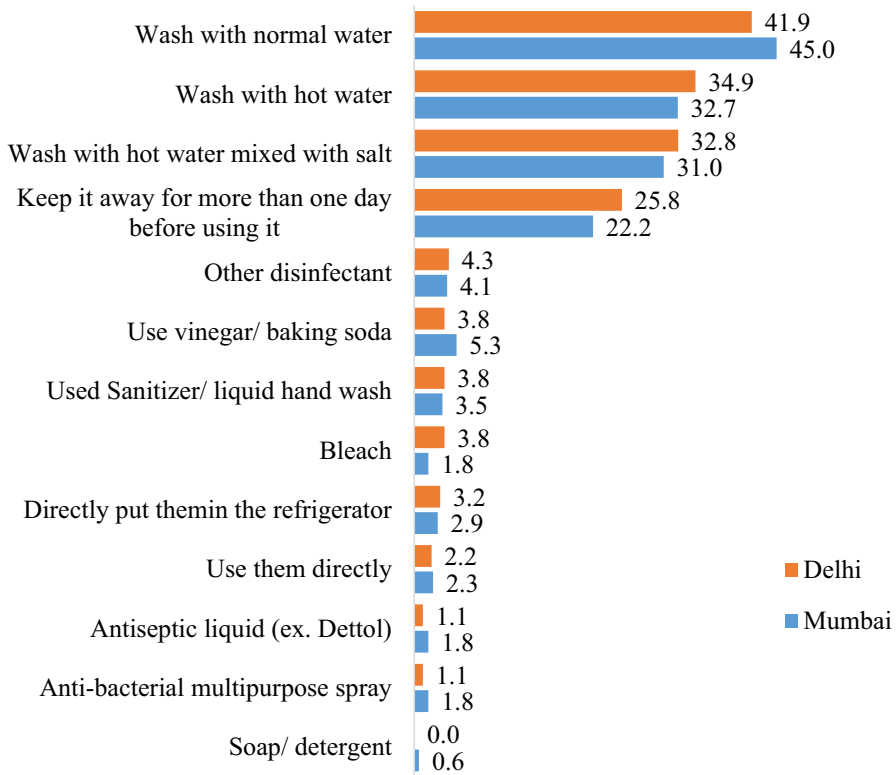


Fig. 2 Percentage distribution of respondents in Delhi and Mumbai by ways through which they clean the vegetables

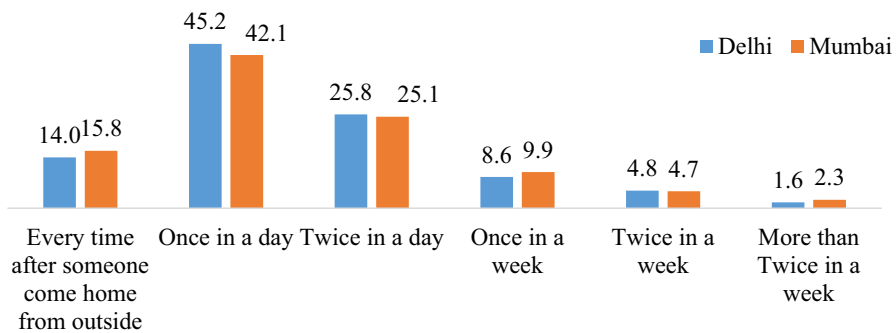
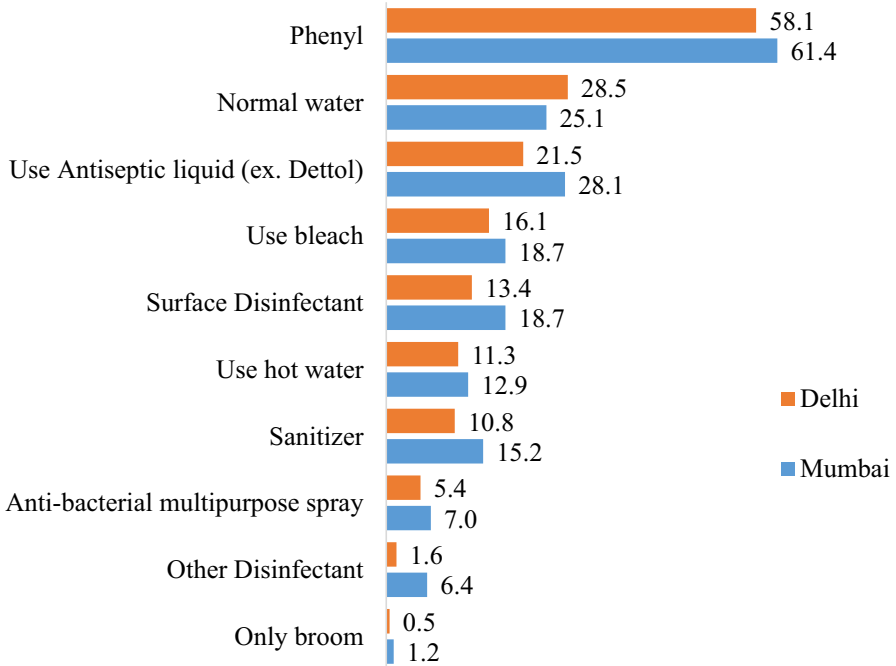


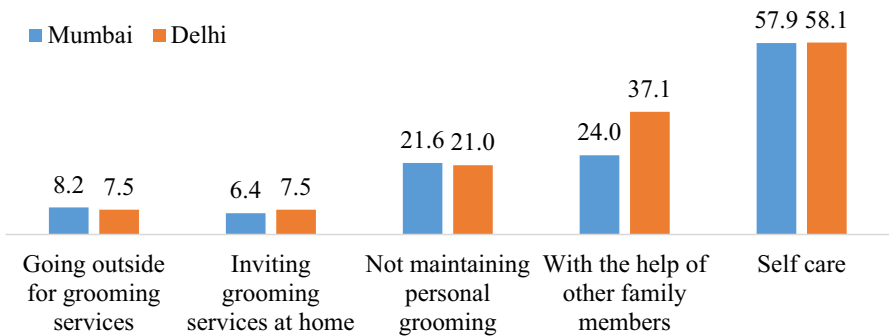
Fig. 3 Frequency of washing floor/house/surface by respondents in Delhi and Mumbai



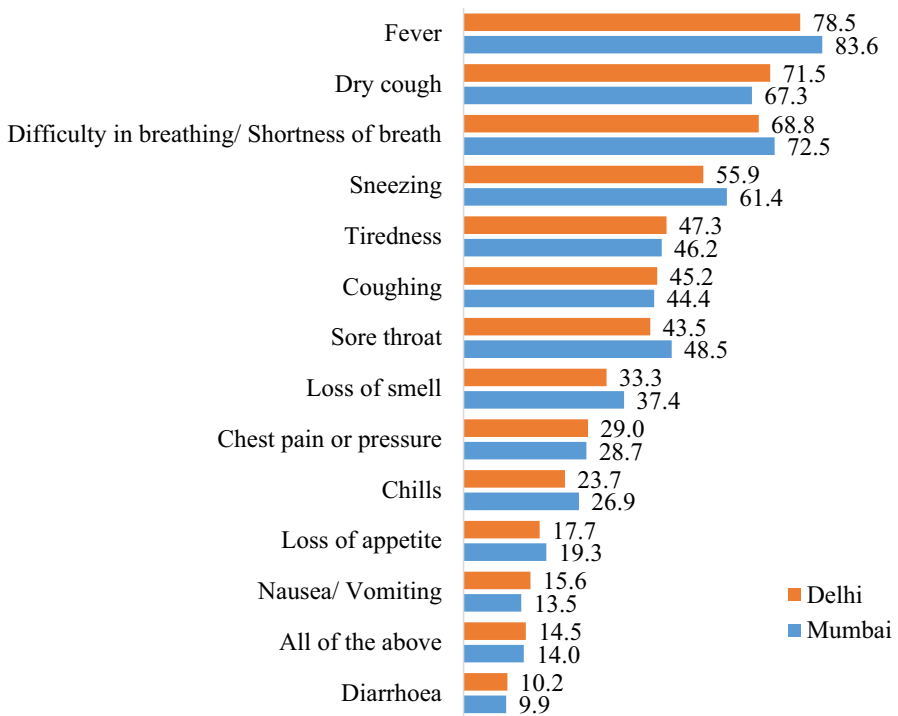
**Fig. 4** Percentage distribution of respondents in Delhi and Mumbai by ways through which they disinfect floor/house/surface

(61.4%) clean their house/surface/floor with phenyl. Almost one-fifth of the respondents in Delhi (21.5%), more than one-fourth of the respondents in Mumbai (28.1%), clean their house with antiseptic liquid. Around one-tenth of the respondents in Delhi (11.3%) and Mumbai (12.9%) clean their homes with hot water.

Figure 5 shows how respondents in Delhi and Mumbai were availing of grooming services. Nearly one-fifth of the respondents in Delhi (21.6%) and Mumbai (21%)



**Fig. 5** Grooming services availed by respondents in Delhi and Mumbai



**Fig. 6** Knowledge of symptoms of COVID-19 reported by respondents

were not maintaining personal grooming at the survey time. Almost 24 percent of the respondents in Delhi and 37 percent of the respondents in Mumbai availed themselves of grooming services with the help of other family members. More than half of the respondents maintained grooming services through self-care in Delhi and Mumbai.

Figure 6 shows the knowledge of symptoms of Coronavirus reported by respondents in Delhi and Mumbai. Around four-fifths of the respondents in Delhi (78.5%) and Mumbai (83.6%) reported fever as a symptom of Coronavirus. Around one-third of the respondent in Delhi (33.3%) and Mumbai (37.4%) reported the loss of smell as a symptom of Coronavirus. A nearly similar proportion of respondents in Delhi and Mumbai reported tiredness and coughing as symptoms of Coronavirus.

Figure 7 shows the knowledge of respondents regarding Coronavirus. Around one-fifth of the respondents in Delhi (19.4%) and Mumbai (19.9%) agreed that Coronavirus could not affect healthy people. Around 13 percent of the respondents in Delhi and Mumbai disagreed that wearing masks/PPE can prevent the Coronavirus. About 18 percent of the respondents in Delhi and 26 percent of the respondents in Mumbai disagreed that newspapers/internet/WhatsApp etc. provide trustworthy information regarding Coronavirus.

Table 1 shows the proportion of respondents using the type of mask and practicing hand wash. Nearly half of the respondents in Delhi and Mumbai did not use a proper mask and used any other substitute for masks such as handkerchiefs and other things.



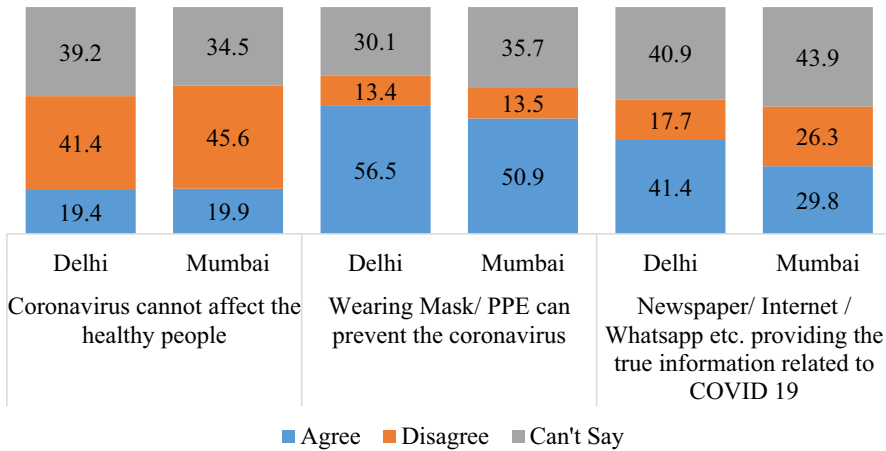


Fig. 7 Knowledge of respondents regarding COVID-19 in Delhi and Mumbai

Table 1 Type of mask used and frequency of hand washing among respondents in Delhi and Mumbai

Type of mask used	Mumbai	Delhi
Any cloth (handkerchief, dupatta, stole use as mask)	50.9	50.5
Use disposable/surgical mask	46.8	38.7
Use N95 mask	24.6	29.6
Use pollution or dust mask	17.5	23.1
<i>Disinfect hands now a days</i>		
Before having meals	56.1	64.0
After every meeting with someone outside	63.2	61.3
After receiving any doorstep delivery	38.0	47.3
After or before any activities	52.6	45.7
Before touching mouth/nose/eyes	38.0	44.1
Before cooking food	35.7	39.8

Around 25 percent of the respondents in Mumbai and 30 percent in Delhi used the N95 mask. About 47 percent of the respondents in Mumbai and 39 percent in Delhi used a disposable/surgical mask. Nearly 56 percent of the respondents in Mumbai and 64 percent in Delhi washed their hands before having a meal. More than two-thirds of the respondents in Delhi (61.3%) and Mumbai (63.2%) washed their hands after meeting someone outside their home. Nearly 38 percent of the respondents in Mumbai and 47 percent in Delhi washed their hands after receiving any doorstep delivery.

Table 2 shows the cleaning methods for grocery items among respondents in Delhi and Mumbai. Nearly two-fifths of the respondents in Delhi and Mumbai keep the grocery items aside for more than one day before using them. Almost 30 percent of respondents in Mumbai and Delhi wash the grocery items with normal water, whereas

**Table 2** Methods used for cleaning/sanitizing Grocery in last 15 days by respondents in Delhi and Mumbai

Method used for cleaning/sanitizing grocery	Mumbai	Delhi
Keep it away for more than one day before using it	40.4	40.9
Wash with normal water	29.8	30.1
Wash with hot water	19.3	13.4
Use vinegar/baking soda	6.4	12.4
Wash with hot water mixed with salt	13.5	12.4
Used sanitizer/liquid hand wash	23.4	11.3
Anti-bacterial multipurpose spray	5.3	7.5
Directly put them in the refrigerator	6.4	4.3
Antiseptic liquid (ex. Dettol)	4.7	3.2
Bleach	2.9	1.1
Soap/detergent	0.6	0.5

19 percent of respondents in Mumbai and 13 percent of respondents in Delhi were the grocery items with hot water before using them. Nearly 23 percent of the respondents in Mumbai and 11 percent in Delhi wash their grocery items with sanitizer/liquid hand wash before using them.

Table 3 depicts different hygienic practices followed by respondents in Delhi and Mumbai. Nearly three-fifths of the respondents in Mumbai (61.4%) and three-fourths of the respondents in Delhi (75.3%) wash their hands and legs for at least 20 s with soap/hand wash after coming home from outside. Nearly 29 percent of the respondents in Mumbai and 39 percent in Delhi clean themselves at the doorstep itself after coming from outside. Almost one-fourth of the respondents in Mumbai (26.3%) and one-third of the respondents in Delhi (32.8%) wash their masks with water after every use. Nearly three-fourths of the respondents in Mumbai (74.9%) and 70 percent of the respondents in Delhi keep their footwear outside the home after coming from outside the home. Nearly one-fifth of the respondents in Mumbai (22.2%) and Delhi (20.4%) do not feel the need to clean their card/wallet after coming from outside the home. Nearly 6 percent of the respondents in Mumbai and 5 percent in Delhi contact their family members immediately after reaching home from outside without cleaning themselves.

Table 4 shows the proportion of respondents having knowledge about the various risk factors of Coronavirus and co-morbidities related to Coronavirus. Nearly 74 percent of the respondents in Mumbai and 71 percent of the respondents in Delhi acknowledge not following social distancing as a risk factor for Coronavirus. Around 39 percent of the respondents in Mumbai and 44 percent of the respondents in Delhi agreed that older age is a risk factor for Coronavirus. Approximately 32 percent of the respondents in Mumbai and 29 percent in Delhi acknowledge co-morbidities as a risk factor for Coronavirus. More than 70 percent of the respondents in Mumbai and Delhi acknowledge respiratory diseases as a risk factor for Coronavirus. Around 44 percent of the respondents in Mumbai and 35 percent in Delhi agreed that diabetes is an associated risk factor for Coronavirus.

**Table 3** Different hygienic practices followed by respondents in Delhi and Mumbai

Hygiene related practices	Mumbai	Delhi
<i>Clean/disinfect self after coming home from outside</i>		
Washings hands and legs for at least 20 s using soap/hand wash liquid	61.4	75.3
Sanitizing hands only	55.0	53.2
Bath with normal water	23.4	30.6
Wash hands with normal water	11.1	12.9
Bath with hot water	44.4	11.3
Washings hands using antiseptic liquid	9.9	7.0
<i>Place of cleaning/disinfecting self after coming home from outside</i>		
Bathroom	78.9	75.8
Main doorstep/outside home	29.2	39.2
Bedroom	2.9	6.5
<i>Time taken to clean (Disinfect) self after coming from outside</i>		
Immediately	90.9	89.5
After 5–10 min	7.5	9.9
After half an hour	1.6	0.6
<i>Clean/disinfect used mask</i>		
Wash it with antiseptic liquid (e.g. Dettol)	66.1	59.1
Wash it with water after ever use	26.3	32.8
Always use disposable/surgical mask	24.0	19.9
Use anti-bacterial multipurpose spray	7.6	11.3
<i>Clean/disinfect the clothes after coming home from outside</i>		
Change the clothes	57.9	60.8
Washed the clothes immediately with soap	48.0	48.4
Dip it in antiseptic liquid	25.1	22.0
Use anti-bacterial multipurpose spray	13.5	9.1
Keep it wearing because wearing the same may not be issue	5.8	7.5
Keep it wearing because need to go outside again	6.4	6.5
<i>Clean/disinfect your footwear</i>		
Keep the footwear outside the home	74.9	69.9
Bring footwear inside home and keep aside	19.3	22.6
Bring footwear inside home and wash them immediately	18.7	19.4
<i>Clean/disinfect your cash/card/wallet</i>		
Sanitizer	47.4	50.0
Keep them away for more than one day	29.2	29.0
Didn't need to clean	22.2	20.4
Anti-bacterial multipurpose spray	15.2	14.0
Liquid hand wash/use other disinfectant	12.3	13.4
Antiseptic liquid (ex. Dettol)	5.8	4.8

**Table 3** (continued)

Hygiene related practices	Mumbai	Delhi
Only online payments	1.2	2.2
<i>When do contact the other family members after reaching home</i>		
After washing my hand	45.2	43.3
After taking bath	37.6	42.7
After changing clothes	9.7	7.6
Immediately after reaching home	5.9	4.7
Living alone	1.6	1.8

**Table 4** Knowledge about the risk factors and co-morbidities related to COVID-19

	Mumbai	Delhi
<i>Risk factors</i>		
Not following the social distance	73.7	71.0
Going outside frequently	66.7	69.9
Weak immunity	64.3	67.2
More meetings (due to business)	48.5	51.6
Older ages	38.6	44.1
Close social interaction	43.3	37.6
Co-morbidity	32.2	29.0
<i>Comorbidities</i>		
Respiratory diseases (like asthma)	71.9	71.5
Diabetes	44.4	35.5
Other diseases (liver, lung, heart)	32.7	33.9
Kidney ailments	18.1	21.5
Don't know	19.9	20.5
Obesity	9.9	8.6
People with blood group A	4.7	6.5

## 4 Discussion

This study aimed at examining the various hygienic practices followed by respondents in Delhi and Mumbai during the coronavirus outbreak. Several significant findings emerged from this study; 1. The frequency of visiting outside the home more than twice a week is higher among males than females. 2. A higher proportion of respondents in Delhi visited outside the home more than twice a week than their counterparts. 3. More than two-fifths of the respondents in Delhi and Mumbai washed their vegetables with only normal water. 4. More than one-fourth of the respondents in Delhi and Mumbai clean their house/floor/surface with normal water. 5. Nearly one-fifth of the respondents in Delhi and Mumbai were not maintaining personal hygiene. 6. Nearly

one-fifth of the respondents in Delhi and Mumbai agreed that Coronavirus could not affect healthy people. 7. Nearly half of the respondents in Delhi and Mumbai use any cloth to substitute for a mask.

This study is important in outlining the hygienic practices followed by respondents in Delhi and Mumbai. These cities are the two biggest metropolitan areas and are prime contributors to the overall coronavirus cases. This study found that half of the respondents used any cloth to substitute for masks. A study has highlighted that a homemade or medical mask is not as effective as an N95 mask in blocking a virus [32]. Engaging in practices that defer the use of masks shall be demotivated. Handwashing and wearing a mask are deemed essential in slowing down the spread of Coronavirus [33, 34]. A large proportion of respondents in this study do not wash their hands before touching the mouth/nose/eyes and after receiving any doorstep delivery. However, masks may be difficult to procure in the current shortage, and poor people may not afford high-quality masks that provide safety against Coronavirus; therefore, it is highly valuable to promote handwashing at an extensive scale. Studies have noted improper handwashing due to the unavailability of soap [35]. However, handwashing should be practiced watchfully, and rational hand-hygiene measures respectful of the skin must be instructed [21].

The study found that a good proportion of respondents do not disinfect their groceries and vegetables before using them. Respondents wash vegetables and groceries with plain normal water. A study had highlighted the importance of disinfecting the vegetables before using them [29]. A few respondents also clean their vegetables in bleach, which may be a harmful practice. A report has highlighted that using bleach and soap solution is not recommended to clean vegetables [36]. Washing clothes is another essential hygienic practice. Around half of the respondents washed their clothes with soap immediately after coming from outside. A handful of respondents did not wash their clothes and kept wearing the same clothes after coming home from outside. Around one-fifth of the respondents do not disinfect or clean their card/wallet after coming outside. At the onset, restrictions on human mobility are highly desirable to slow down the spread [37]. Further, if people have to move out, it is recommended to disinfect themselves and belongings like clothes, footwear, wallet, etc., after reaching home to avoid spread to Coronavirus. Clothing can contain an infectious virus passed on, so it is vital to wash them [38].

This study also examined the prevalence of knowledge about the various risk factors of Coronavirus among respondents in Delhi and Mumbai. A little more than 70 percent of the respondents agreed that not following the social distance is a risk factor for Coronavirus, and the remaining respondents do not term social distance as a risk factor. Various studies have highlighted the importance of social distancing in slowing down the Coronavirus [39, 40]. The knowledge of overall risk factors of Coronavirus was found to be higher among respondents in Delhi than respondents in Mumbai. Knowledge of symptoms of Coronavirus among respondents was not entirely satisfactory. Only one-third of the respondents in Delhi and Mumbai acknowledge the loss of smell as a symptom of Coronavirus. Various studies have noticed the loss of smell as an important symptom for Coronavirus [41, 42]. The study noted that males were more likely to go outside than females during COVID-19. Studies have posited that men's dismissive attitudes toward the risks of the virus reflect their attempts to conform

to masculine norms that valorize bravery and strength [43]. On the other hand, men's relaxed attitudes are not simply a reflection of their efforts not to appear "weak" [44]; instead, these attitudes also reflect their protection from the unique and burdensome care work demands generated by a global pandemic. The study has some potential limitations. The data is collected from only two metropolitan cities and cannot be generalized over a large population. Furthermore, the sampling procedure was inadequate and may have presented a biased unknowingly. Despite a few limitations, this study helped explore the hygienic practices followed by people and examined knowledge of various risk factors of Coronavirus. This study provides first-hand information and various aspects and can be a critical information in promoting hygiene among people.

## 5 Conclusion

The study provided insights into the knowledge of risk factors of Coronavirus among respondents in Delhi and Mumbai. Based on the findings, it is need of the hour to disseminate the information on the use of unhealthy disinfectants as they lack the knowledge about the safe use of various types of cleaners and disinfectants. It is also reiterated that there is an urgency to promote further information on risk factors of Coronavirus among people and compulsion to promote healthy hand hygiene and sanitation practices. It is important to pass on the information related to symptoms of Coronavirus. Suppose in metropolitan cities where most of the population is educated and has access to all kinds of media, people do not have adequate information about Coronavirus. In that case, it is worth understanding the situation in rural areas. There is a need to promote information through mass media and other modes of awareness, such as artwork and announcements. Given the gravity of the Coronavirus outbreak, it is crucial to promote WHO guidelines and implement 'SAVE LIVES: Clean Your Hands' campaign in India.

**Author Contribution** VC: Data curation, Conceptualization. AG: Conceptualization, Methodology, Software. RP: Writing-Reviewing and Editing, Visualization. SC: Writing-Original Draft Preparation. NKA: Supervision, Validation. SK: Data collection, Supervision, Validation.

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**Data Availability** The data is collected by the authors for the sole purpose of research only. The data is available with the authors.

**Code Availability** Not Applicable.

## Declarations

**Ethical Approval** Ethical approval was received from the Institute Research Ethics Committee (University of Petroleum and Energy Studies, Dehradun, Uttarakhand, India). Moreover, consent was taken from the participants also.

**Conflict of interest** The authors declare that they have no conflict of interest.

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