

# Frequency of Use of Facemasks and Sanitizers during COVID 19 Pandemic among the residents of Lahore

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## ABSTRACT

**Background:** Coronavirus disease 2019 (COVID-19) is an infectious disease leads to severe acute respiratory syndrome coronavirus. In December 2019; the disease was first identified in Wuhan, one of the cities of province of China. The disease has spread globally and resulting in the coronavirus pandemic 2019-20. The majority of cases lead to mild symptoms. Some cases cause pneumonia and multi-organ failure.

**Aim:** To determine frequency of use of facemasks and sanitizers during COVID 19 pandemic among the residents of Lahore.

**Research methodology:** This descriptive study was conducted at Lahore from 16<sup>th</sup> March 2020 to 15<sup>th</sup> September 2020 among residents of Lahore. After taking informed consent from 1200 subjects of 10 years age or more from both sexes were selected through convenient sampling method. The data were entered and interpreted as frequency and percentage distribution.

**Results:** In this study 1200 subjects were included, 820(68.33%) males and 380(31.67%) females. 668(81.56%) males and 300(78.94%) females were in the age group of 19-44 years while 421(51.34%) males and 187(49.21%) females were educated. In this study 408(49.75%) males and 193(50.79%) females used face masks whereas 412(50.24%) males and 187(49.21%) females used no facemasks. 448(54.63%) males and 201(52.89%) females used sanitizers whereas 372(45.37%) males and 179(47.11%) females used no sanitizers.

**Conclusion:** Around half of males and females used facemasks and sanitizers of any category. Majority of highly educated and educated males and females used facemasks and sanitizers thus showing education as profound factor. Use of facemasks among illiterate females was better than males.

**Keywords:** Corona virus, Covid 19, Facemask. Sanitizer, Wuhan,

## INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease leads to severe acute respiratory syndrome coronavirus<sup>1</sup>. In December 2019; the disease was first identified in Wuhan, one of the cities of province of China. The disease has spread globally and resulting in the coronavirus pandemic 2019-20<sup>2,3</sup>. Common symptoms are fever, muscle pain, cough, sputum production with less common symptoms, difficulty in breathing, sputum, sore throat and diarrhea<sup>4,5</sup>. The majority of cases lead to mild symptoms<sup>6</sup>, some cases cause pneumonia and multi-organ failure<sup>2,7</sup>. The rate of deaths per number is 4.4 % in diagnosed cases till 23 March 2020. Rate of death ranges from 0.2 percent to 15 percent, according to age group and other health problems<sup>8</sup>.

Coronavirus is spread from person to person via droplet infection produced during coughing or sneezing<sup>9,10</sup>. It can also be spread by touching contaminated surfaces and then touching faces of each other<sup>9</sup>. The virus can survive on surfaces up to maximum three days<sup>11</sup>. The onset of symptoms is between 02 and 14 days after exposure, with average of 05 days<sup>12</sup>. The diagnosis is made by reverse transcription polymerase chain reaction (RT-PCR) from a nasopharyngeal swab which is standard method. The infection can also be diagnosed from a chest x-ray or CT scan

showing features of pneumonia with combination of symptoms and risk factors<sup>13</sup>.

Frequent hand washing, avoid hand touching of the face and social distancing are the preventive measures from infection<sup>14</sup>. The use of facemasks or face covering is recommended for suspected cases and their care providers though simple masks or covering may be used by them<sup>15</sup>. Till now no vaccine or any antiviral treatment for COVID-19 is established. Management involves supportive treatment, isolation, and interventional measures<sup>16</sup>.

The coronavirus disease was declared the outbreak of the 2019-20 as a Public Health Emergency of International Concern by World Health Organization (WHO) on 30 January 2020<sup>17</sup> and a pandemic of corona virus on 11 March 2020<sup>3</sup>. Local transmission of this disease has been reported in majority of the countries of the world.<sup>18</sup> The purpose of this study was to determine the use of facemasks and sanitizers among the public of Lahore regarding the preventive measures of Covid 19 pandemic.

## RESEARCH METHODOLOGY

This descriptive study was conducted at Lahore from 16<sup>th</sup> March 2020 to 15<sup>th</sup> September 2020 among residents of Lahore. After taking informed consent from 1200 subjects of 10 years age or more from both sexes were selected through convenient sampling method. Data were collected

on a specified questionnaire by a doctor and required informations regarding the age group, standard of education, use of different types of facemasks and sanitizers were recorded after interviewing the participants. The data were entered and interpreted as frequency and percentage distribution. Only those citizens of Lahore fulfilling the inclusion criteria were included in this study. The data were analyzed by SPSS version 24.

## RESULTS

In this study 1200 subjects were included, 820(68.33%) males and 380(31.67%) females. 668(81.50%) male and 300(79%) female subjects belonged to the most productive age group 19-44 years. Age and gender distribution of study subjects is shown in. (Table-1)

In this study 62(07.56%) male and 22(05.79%) female participants from 10-18 years age group, 228(27.80%) male and 181(47.63%) female participants from 19-24 years age group, 244(29.75%) male and 85(22.37%) female participants from 25-34 years age group, 196(23.90%) male and 34(08.95%) female participants from 35-44 years age group, 42(05.12%) male and 28(07.37%) female participants from 45-54 years age group, 30(03.12%) male and 16(04.21%) female participants from 55-64 years age group and 18(02.20%) male and 14(03.68%) female participants from 65 years or above age group used facemasks.

Study showed that 76(09.27%) male and 38(10%) female participants were illiterate, 161(19.63%) male and 102(26.84%) female participants were literate (at least primary education), 421(51.34%) male and 187(49.21%) female participants were educated (education less than graduation) and 162(19.76%) male and 63(16.58%) female

participants were highly educated (education graduation or more).

It was observed during this study that 12(15.79%) illiterate males and 13(34.21%) illiterate females used facemasks whereas only 08(10.53%) illiterate males and 07(18.42%) illiterate females used sanitizers. 41(25.47%) literate males and 27 (26.47%) literate females used facemasks whereas 57(35.40%) literate males and 37(36.27%) literate females used sanitizers. 211(50.12%) educated males and 111(59.36%) educated females used facemasks whereas 257(61.05%) males and 123(65.78%) used sanitizers from this category. 144(88.89%) highly educated males and 42(66.67%) highly educated females used facemasks and 126(77.78%) males and 26(41.27%) females used sanitizers from this category. 408(49.75%) males and 193(50.79%) females did not use facemasks and 448(54.63%) males and 193 (50.79%) females did not use sanitizers (Table-2)

It was observed that 66(08.05%) males and 34(8.95%) females used N95 facemasks, 210(25.61%) males and 131 (34.47%) females used surgical facemasks, 132(16.09%) males and 28 (07.37%) females used homemade facemasks. 412 (50.24%) males and 187(49.21%) females did not use. Majority of participants used surgical facemasks. During this study it was observed that 76(09.29%) males and 29(07.63%) females used alcohol based sanitizers, 127(15.49%) males and 46 (12.10%) females used alcohol for rubbing, 111(13.54%) males and 57(15%) females used Dettol sanitizers, 134 (16.34%) males and 69 (18.16%) females used soap & water sanitizers. 372(45.37%) males and 179(47.11%) females used no sanitizers. (Table-3)

Table-1 Age groups of participants

Gender	Age groups in years						
	10-18 years	19-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65 years or more
Male(n=820)	62(07.56%)	228(27.80%)	244(29.75%)	196(23.90%)	42(05.12%)	30(03.12%)	18(02.20%)
Female(n=380)	22(05.79%)	181(47.63%)	85(22.37%)	34(08.95%)	28(07.37%)	16(04.21%)	14(03.68%)

Table 2: Standard of education and use of facemasks & sanitizers in participants

Gender	Variable	Standard of Education			
		Illiterate (No education)	Literate (primary education)	Educated (Matric or more)	Highly educated (Graduation or more)
Male(n=820)	Total	76(9.27%)	161(19.63%)	421(51.34%)	162(19.76%)
	Use of Mask	12(15.79%)	41(25.47%)	211(50.12%)	144(88.89%)
	Use of sanitizer	08(10.53%)	57(35.40%)	257(61.05%)	126(77.78%)
Female(n=380)	Total	38(10.00%)	102(26.84%)	187(49.21%)	63(16.58%)
	Use of masks	13((34.21%)	27(26.47%)	111(59.36%)	42(66.67%)
	Uses of sanitizer	07(18.42%)	37(36.27%)	123(65.78%)	26(41.27%)

Table 3: Types of facemasks and sanitizers used by participants

Gender	Types of facemasks				
	N95 facemasks/ Respirator	Surgical facemasks	Homemade facemasks	No use of face masks	
Male (n=820)	88(10.73%)	270 (32.93%)	150(18.29%)	312(38.05%)	
Female (n=380)	34 (08.95%)	131(34.47%)	28(07.37%)	187(49.21%)	
	Types of sanitizers				
	Alcohol based sanitizer	Rubbing Alcohol	Dettol Sanitizers	Soap & water	No use of sanitizers
Male (n=820)	76(09.27%)	127(15.49%)	111(13.54%)	134(16.34%)	372(45.37%)
Female(n=380)	29(07.63%)	46(12.10%)	57(15.00%)	69(18.16%)	179(47.11%)

## DISCUSSION

There were significant predictors of improved compliance with other forms of preventive behaviour: higher perceived susceptibility, higher perceived severity, higher perceived benefits, older age, female gender, higher education level, presently or previously married, higher level of awareness of a disease or health measure, and provision of information by health professionals shown in different studies.<sup>19,20</sup> If thinking about the sex, it is observed that females are less willing to take risks, and are inclined towards preventive measures than their male counterparts.<sup>21</sup> In this study all age groups were included. The purpose was to assess which age group was more responsible for the preventive measures regarding covid 19. It was observed majority of the male participants belonged to 19-44 years age group whereas majority of female participants belonged to 19-34 years age group showed maximum responsibility in the use of facemasks. It was observed during this study that majority of the males and females were educated but approximately 1/3 illiterate and literate males and females also participated in this study, showed awareness about preventive measures against covid 19.

Pivotal role is played in the prevention and control of respiratory disease transmission by facemasks. However, compliance with its use is affected by a number of factors. Easy referencing can be made with the use of five components of Health belief model (HBM)<sup>22</sup>. The Health Belief Model (HBM) hypothesizes that health-related behavior depends on the combination of several components, namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy<sup>23</sup>. It was observed that majority of males and female participants were educated in this study. A few numbers of participants were either literate or illiterate. Majority of educated and highly educated males and females used facemasks and sanitizers. It is observed that education has great impact on use of facemasks and sanitizers among both genders. Majority of highly educated males used facemasks and sanitizers whereas half of educated males used facemasks and sanitizers. Majority of the educated females used facemasks whereas less than half of highly educated females used facemasks and sanitizers. This is appreciable that use of facemasks among illiterate females was better than males. The use of facemasks and sanitizers was better among educated females as compared to educated males whereas use of facemasks and sanitizers was better among highly educated males as compared to highly educated females.

It was observed that approximately half of the participants used facemasks of any type during this pandemic. Majority of the participants used surgical facemasks. N95 facemasks were used by medical personnel. Participants were interested to use this type of facemask but those were not available in the market due to many reasons or if available were very expensive.

Washing hands with soap and water whenever possible is recommended by the Centers for Disease Control (CDC) because the amounts of all types of germs and chemicals on hands are reduced by hand washing. If soap and water are not available, use of hand sanitizer with a

concentration of at least 60% alcohol can avoid getting sick and spreading germs to others<sup>24</sup>. Noting that consumers are getting difficulties in accessing alcohol-based hand sanitizers containing at least 60% alcohol, on March 14, 2020, FDA released an Immediately in Effect Guidance titled, "Policy for Temporary Compounding of Certain Alcohol-Based Hand Sanitizer Products During the Public Health Emergency"<sup>25</sup>.

The use of alcohol-based hand sanitizers with greater than 60% ethanol or 70% isopropanol was recommended by the Centers for Disease Control (CDC) as the preferred form of hand hygiene in healthcare settings, based on greater access to hand sanitizer. Health care personnel who use alcohol-based hand sanitizers as a part of their hand hygiene routine can inform their patients that they are following Centers for Disease Control (CDC) guidelines<sup>26</sup>.

It was observed during this study that more than 50% males and females used any type of sanitizer during this covid 19 pandemic which means public is well aware about hand washing to kill the virus. Majority of males and females used Dettol sanitizers.

During this study, the number of participants those used facemasks and sanitizers was very low from March to April whereas this number increased in months of May and June. There were instructions by the National Command and Operational center Islamabad and different government officials for use of facemasks at crowded places from time to time. Traffic police also made challan of different motor cycle and car drivers those were without facemasks but result was not up to the mark. On 20<sup>th</sup> June 2020 Government of the Punjab issued order No. SO(G)/P&SHD/4-1/2020 that "All citizens in province of Punjab shall use face covering at all public places, during travel and conduct of any business, private or official." The main hindrance was lack of legislation by Federal or Provincial governments or any ordinance regarding mandatory use of facemasks.

## CONCLUSION

It was observed during this study that majority of the males and females were educated. Approximately 50% males and females used facemasks and sanitizers of any type during this covid 19 pandemic. Majority of educated and highly educated males and females used facemasks and sanitizers. This is appreciable that use of facemasks among illiterate females was better than males. Study showed that education has great impact on use of facemasks and sanitizers among both genders.

## REFERENCES

1. World Health Organization. Naming the coronavirus disease (covid-19) and the virus that causes it. 2020. URL [https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-\(covid-2019\)-and-the-virus-that-causes-it](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it).
2. Hui DS, I Azhar E, Madani TA, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health-The latest 2019 novel coronavirus outbreak in Wuhan, China. *Int J Infect Dis*. 2020; 91:264-66.

3. Haque T, Hossain KM, Bhuiyan MM, Ananna SA, Chowdhury SH, Islam MR, Ahmed A, Rahman MM. Knowledge, attitude and practices (KAP) towards COVID-19 and assessment of risks of infection by SARS-CoV-2 among the Bangladeshi population: An online cross sectional survey.
4. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *Jama*. 2020 Apr 7; 323(13):1239-42.
5. Burton D, Fishpaw M, Michel N, Sheppard P, Winfree P. The "Third Inning": Next Steps for Congress in Addressing the Coronavirus. Heritage Foundation Backgrounder. 2020 Mar 17(3477).
6. Tian S, Hu N, Lou J, Chen K, Kang X, Xiang Z, Chen H, Wang D, Liu N, Liu D, Chen G. Characteristics of COVID-19 infection in Beijing. *Journal of Infection*. 2020 Feb 27.
7. Chauhan S. Comprehensive review of coronavirus disease 2019 (COVID-19). *Biomedical Journal*. 2020 Jun 1.
8. ELGhamrawy SM. Diagnosis and Prediction Model for COVID19 Patients Response to Treatment based on Convolutional Neural Networks and Whale Optimization Algorithm Using CT Images. *MedRxiv*. 2020 Jan 1.
9. Nkwoemeka NE, Okwelogu IS, Chiedozi AP. A Scoping Review on Epidemiology, Etiology, Transmission, Clinical Presentation, Treatment and Management of Coronavirus Disease (COVID-19). *European Journal of Biology and Medical Science Research*. 2020 Apr; 8(2):45-54.
10. Peeri NC, Shrestha N, Rahman MS, Zaki R, Tan Z, Bibi S, Baghbanzadeh M, Aghamohammadi N, Zhang W, Haque U. The SARS, MERS and novel coronavirus (COVID-19) epidemics, the newest and biggest global health threats: what lessons have we learned? *International journal of epidemiology*. 2020 Feb 22.
11. Ajimsha MS, Neeraj Gampawar MP, Surendran PJ, Jacob P, Vasileios Karpouzis MP, Haneef M, Aleef M, Shameem Ali MP, Reshma Praveen MP, Bouguerra E, Noora Almudahka PT. Acute Care Physiotherapy Management of COVID-19 Patients in Qatar: Consensus-Based Recommendations.
12. Tavakoli A, Vahdat K, Keshavarz M. Novel Coronavirus Disease 2019 (COVID-19): An Emerging Infectious Disease in the 21st Century. *ISMJ*. 2020 Jan 10;22(6):432-50
13. Jin YH, Cai L, Cheng ZS, Cheng H, Deng T, Fan YP, Fang C, Huang D, Huang LQ, Huang Q, Han Y. A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (standard version). *Military Medical Research*. 2020 Dec 1; 7(1):4.
14. Saeed MA, Zaher TI, Khorshed SE, Saraya M, Mahmoud TM, Emara MH, Mahrous AM, Hassan NA, Khattab FM, Abdelmaksoud MA, Emara EH. The SARS-COV2 (COVID-19) Pandemic: What Clinicians should knew. *Afro-Egyptian Journal of Infectious and Endemic Diseases*. 2020 Jun 1;10(2):65-92.
15. Wei M, Yuan J, Liu Y, Fu T, Yu X, Zhang ZJ. Novel coronavirus infection in hospitalized infants under 1 year of age in China. *Jama*. 2020 Apr 7;323(13):1313-4.
16. Tavakoli A, Vahdat K, Keshavarz M. Novel Coronavirus Disease 2019 (COVID-19): An Emerging Infectious Disease in the 21st Century. *ISMJ*. 2020 Jan 10;22(6):432-50.
17. Adhikari SP, Meng S, Wu YJ, Mao YP, Ye RX, Wang QZ, Sun C, Sylvia S, Rozelle S, Raat H, Zhou H. Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review. *Infectious diseases of poverty*. 2020 Dec;9(1):1-2.
18. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, Iosifidis C, Agha R. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International Journal of Surgery*. 2020 Feb 26..
19. Taylor M, Raphael B, Barr M, Agho K, Stevens G, Jorm L. Public health measures During an Anticipated influenza pandemic: factors influencing willingness to comply. *Risk management and Healthcare policy*. 2009; 2:9.
20. Leung GM, Lam TH, Ho LM, Ho SY, Chan BH, Wong IO, Hedley AJ. The impact of Community Psychological responses on outbreak control for severe acute respiratory Syndrome in Hong Kong. *Journal of Epidemiology & Community Health*. 2003 Nov1; 57(11):857-63.
21. Archer J. Sex differences in aggression in real-world settings: A meta-analytic review. *Review of general Psychology*. 2004 Dec; 8(4):291-322.
22. Sim SW, Moey KS, Tan NC. The use of facemasks to prevent respiratory infection: a Literature review in the context of the Health Belief Model. *Singapore medical journal*. 2014 Mar; 55(3):160.
23. Abraham C, Sheeran P. The health belief model. *Predicting health behaviour*. 2005 Jul 1; 2:28-80.
24. Todd EC, Michaels BS, Smith D, Greig JD, Bartleson CA. Outbreaks where food Workers have been implicated in the spread of foodborne disease. Part 9. Washing and Drying of hands to reduce microbial contamination. *Journal of food protection*. 2010 Oct; 73(10):1937-55.
25. Ragheb M. Risk quantification. *Nature*. 2020; 2:26.
26. Centers for Disease Control and Prevention. CDC 24/7: Saving Lives. *Protecting People: Alcohol consumption*