

Wearing mask during covid-19 to limit the spread amongst the general population of western India: Knowledge, Attitude and Practices

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Abstract

Background: Despite the availability of prevention guidelines and recommendations on wearing masks mandatorily, many people lack knowledge for use and importance of wearing masks during this pandemic.

Objective: This study aims to assess the level of Knowledge, Attitude and Practices regarding wearing mask during covid-19 amongst the general population of Western India.

Materials & Methods: General Population from western part of India were enrolled. An online questionnaire was sent which comprised of 23 questions about general characteristics and their knowledge,

attitude, and practices about wearing mask. The study period was from June-August 2021.

Results: Most participants were following the correct practice of not sharing mask (90.6%), wearing mask in public place (98.3%). 66% were washing hands before and after using mask while 65.6% didn't remove mask while talking. 76.3% participants knew mode of transmission of COVID-19. More than 95% participants knew the necessity of wearing masks against COVID-19.

Conclusion: Western India population were aware of mode of transmission of COVID 19 and importance of wearing masks for protection.

Keywords: COVID-19, Coronavirus, Pandemic, masks.

Introduction

A novel coronavirus disease outbreak (COVID-19) has touched many aspects of daily life all over the world. This newly found viral illness that had begun in Wuhan, China & later spread worldwide, thus calling it a Pandemic. The rapidly spreading virus looks to be much more contagious than coronaviruses that cause SARS and Middle East respiratory illness.¹ Air - borne particulates spread while touching as well as coming into contact with infectious individual, or coming in contact with a contaminated surface are possible routes of human-to-human transmission.² Furthermore, Alternative pathways such as blood or saliva have not been investigated yet.

Both pharmaceutical and non-pharmaceutical treatment options are available for COVID-19. Although pharmacological interventions are the most efficient, vaccines and antiviral drugs require a long time to get manufactured, hence they cannot then control an emergency caused by a new virus in the early stages.^{3,4} Nonpharmaceutical measures such as wearing masks & washing hands are critical in this situation to lower the danger by building a barrier to prevent aerosol spread and protect vulnerable groups.^{5,6} Masks can filter the air that enters the lungs, and they have a great effect in pulmonary infectious disease epidemics.⁷ Hand-washing & mask-wearing were found to be beneficial in preventing viral spread during onset of acute respiratory syndrome (SARS).⁸

As the usage of facial masks during the COVID-19 epidemic becomes more popular, the public's utilisation marketed, handmade, and improvised masks has exploded, with a wide range of style, material, and construction.⁹ Similarly, various novel "hacks" devices and alterations (enhancements) that aim at improving the

technical specifications of conventional masks (usually surgical & procedure masks) have been published in the news and social media outlets.¹⁰ Despite their broad distribution and use during the epidemic, limited analyses of the effectiveness of such face coverings or mask modifications in filtering airborne particles have been conducted.^{11,12}

Wearing masks seems to be a more often adopted preventative measure that has less impact on a society than social separation, remaining at home, or even quarantine approach.¹⁴ Furthermore, unlike complete protection methods like vaccination, masks only can decrease the risk of illness to a certain extent.^{15,16} Furthermore, given mask protection would only be effective for a given timeframe, behaviour of an individual is time-dependent, ie as the disease progresses, people may change their minds.^{17,18}

People's attitudes influence how they assess the decision context and probable outcomes. It has been incorporated into numerous decision-making theories as a significant determinant of decision-making processes. According to risk attitude research, persons who are more risk averse are less prone to make risky judgments. Recent research has found that risk attitude influenced protective actions and compliance with containment measures like social distancing during the COVID-19 pandemic.²⁰

Methodology

After receiving consent from SVIEC, this study was carried out. General population of western India were included after obtaining consent to participate.

Participants were evaluated by web-based questionnaire. The questionnaire consisted of 23 questions and was written in English. All of the participants were picked using the given selection criteria. The sample of general population was selected through convenient sampling randomly by email and social media platforms like

WhatsApp, Facebook and Instagram. Participants were sent an online-generated link to complete the survey. The survey questionnaire itself asked for informed consent. Questions in this study were concerned of the following areas (i) Knowledge (ii) Attitude (iii) Practices regarding wearing of masks during COVID-19. After all of the participants had completed the questionnaire, the data was entered into an Excel sheet and statistical analysis was performed.

At the 95 percent confidence interval, the sample size for this study was calculated to be 325. Participants were chosen at random using email and social media networks such as WhatsApp, Facebook, and Instagram. The number of individuals who were invited to fill out the form was almost double the sample size computed. To ensure that they are resident of western part of India, each participant was contacted individually. To promote maximum involvement from different zonal divisions, participants were required to forward the questionnaire survey to their family members and friends.

The questionnaire was adopted from a previous study conducted by Sikakulya F et al on the topic, "Use of face masks to limit the spread of the COVID-19 among western Ugandans: Knowledge, attitude and practices"¹³. A closed-ended web-based questionnaire was created using a Google Forms prototype (Google Inc., USA). To create the online version of the surveys, a Google account was used to access the Google Drive application. After using the Google Drive programme, a new Google Forms prototype was produced. All the questions were inserted into the Google Form prototype along with choices and were saved. The surveyor could use a laptop or a smartphone to view the link to the online questionnaire.

Statistics

In this study, descriptive and inferential analyses were carried out. Continuous measurement results were provided in mean SD, while categorical measured values were shown in number (percent). The threshold for statistical significance was established at $p=0.05$, and therefore any value less than or equal to 0.05 were presumed to be statistically significant. The Chi square analysis was used to determine the relevance of study factors on a categorical scale. IBM SPSS Statistics 20.0 is a statistical programme developed by IBM (IBM SPSS Statistics 20.0)

Results

There were 545 individuals in total (290 females & 255 males) in this study. Table 1 lists the characteristics of the participants. 55.2 percent of those who took part were between the ages of 18 and 27; Married (54.1%). Majorly the participants were graduates and more (95.6%) who resided in urban area (81.1%)

Most participants had correct knowledge regarding wearing of masks during corona virus pandemic (Table 2). Although, varied response rate was seen across questions. More than 95% of the participants believed that contact routes and respiratory routes were the mode of transmission of COVID-19. Around 68% of the participants didn't believe that cloth masks were as effective as the surgical masks or the N95 masks. 96.5% participants agreed that even if one doesn't have covid but wearing a mask is necessary and majority of the population (99.6%) were easily able to categories that it is important to wear mask who are public area or are front line workers or covid positive patients and lastly 94.3% of the population believed that widespread use of facemasks will help to control the spread of COVID-19.

This study also contained questions regarding the attitude of the participants towards wearing a face mask

during this COVID-19 pandemic are shown in Table 3. Almost all of the participants (>97.1%) said they were confident in their ability to accurately put on a face mask. & a total of 97.8% of participants believed that wearing face masks frequently is one of the ways of reducing transmission of COVID-1 & believed that facemasks actually protect against COVID-19.

Last but not least, Table 4 contains questions about mask-wearing practices. Participants Nearly 90% of those who took part said they've never shared a mask with anyone. More than 65% participants practiced washing their hands before wearing and after removing mask and didn't remove their mask while talking to someone but around 4%-7% still didn't wash their hands and removed their masks while talking to someone.

Discussion

This survey provides the most current evidence to date on the knowledge and attitude of the population and practices of wearing masks. After being discovered from Wuhan, China; it spread quickly at the end of 2019, eventually leading to global pandemic.¹⁴ A study on knowledge, attitudes and practices can assist the government gain a deeper insight on situations, challenges, and alternatives for policy information via the Ministry of Health. The majority of those who took part in this poll had appropriate knowledge and attitudes towards wearing masks.

In this present COVID-19 epidemic, a facemask may aid to reduce infection spread in the population.¹⁴ Research evidence have shown that masks filter the sub-micron particles and thereby can prevent the inhalation of large droplets and sprays^{15,16}. A meta-analysis done by Yanni Li et al¹⁴ concluded that to prevent the spread of COVID19 wearing a mask is an effective way. Another unpublished review on face masks in community

services suggested that the risk of covid infection is significantly reduced if you are wearing a face mask.

The majority of the participants (96.7 percent) in this study had sufficient knowledge on how to wear face masks to prevent the spread of COVID-19, and so this knowledge score has been largely divided among people aged 18 to 27 years. This level of knowledge is higher than that of Pakistani workers, who were just 35.2 percent aware of the use of masks to prevent the spread of COVID-19.¹⁷ Maximum participants having good education (95.6%) and residing in urban area (81.1%) can explain the fact that these categories of people were more knowledgeable than the other participants as well as in other studies done by Hager E et al & Serwa D et al^{17,18}

In our research, attitudes toward wearing facemasks varied by age, education level, gender, and residence of the participants were found to be having similar findings in a survey done by Hager et al¹⁷. Without a doubt, nearly 97.1 percent of participants said that they were confident enough to appropriately putting on a face mask, and 94.3 percent believed that a face mask could protect from COVID-19. This finding differed from similar studies which were performed in Uganda, Pakistan & Hong Kong where by only 69.4%, 88.5 % and 88.4% of participants felt confidence in their ability to safely put on a face mask, respectively.^{12,13,20}

The participants (90.6%) agreed to the practice of not sharing face mask but around 9.4% participants still agreed that they share their facemasks which somewhere constitute a minor gap for which public measures should be taken to spread the awareness. In Uganda¹³, Hong Kong²⁰, Malaysia²¹, and Ghana¹⁷ the practice of wearing a mask in public places was observed to be better (98.3%).

This survey also had several limitations. First, this survey was unable to incorporate in-depth discussions due to limitations on gatherings. Second, the study tool had only one language-English which posed a limitation for some participants. Third, because the study was conducted in the Western India, the findings may not be applicable to the entire country.

Within the study's limitations, it can be assumed that the participants were aware of COVID-19 symptoms and transmission manner. The people of Western India were aware of the COVID 19 transmission method and the significance of wearing a mask for protection. Despite this, much more work needs to be done among India's western population in terms of knowledge, attitude, and practises in order to achieve the highest levels of awareness essential for infection disease control.

Table 1: The characteristics of the 545 participants enrolled in the study.

Variables	Participants- n(%)
GENDER	
Female	290 (53.2%)
Male	255 (46.8%)
AGE (YEARS)	
18-27 Years	301 (55.2%)
28-37 Years	73 (13.4%)
38-47 Years	48 (8.8%)
48-60 Years	101 (18.5%)
Above 60 Years	22 (4%)
RESIDENCE	
Urban	442 (81%)
Rural	103(18.9%)

Table 2: Participants knowledge regarding wearing masks during COVID-19 in routine practice.

Variable	Participants (%)
MODE OF TRANSMISSION	
Contact Routes	386(98%)
Contact Routes + Respiratory Droplets	341 (86.5%)
Respiratory Droplets	348(88.3%)
Respiratory Droplets + Don't Know	220(55.8%)
WEARING MASK IS ONE WAY TO REDUCE TRANSMISSION	
Yes	532(97.6%)
No	7(1.3%)
Don't know	5(0.9%)
CLOTH MASK IS EFFECTIVE AS A SURGICAL MASK OR N95	
Yes	134(24.6%)
No	366(67.2%)
Don't know	44(8.1%)
IT IS NECESSARY TO WEAR A MASK WHEN YOU DON'T HAVE COVID	
Yes	525 (96.3%)
No	14 (2.6%)
Don't know	5 (0.9%)
FACE MASKS PROTECT SOMEONEFROM GETTING COVID	
Yes	513 (94.1%)
No	18 (3.3%)
Don't know	13 (2.4%)
INFECTED INDIVIDUALS REDUCE THE RISK OF SPREADING TO OTHERS BY WEARING MASKS	
Yes	518 (95%)
No	17 (3.1%)
Don't know	9 (1.7%)
CAN WIDESPREAD USE OF FACE MASKS IN A POPULATION FACILITATE THE CONTROL OF COVID-19?	
Yes	513 (94.1%)
No	10 (1.8%)
Don't know	21 (3.9%)
FOR PROPER WEARING, THE FACE MASKS SHOULD COVER THE NOSE, MOUTH, AND CHIN.	
Yes	538 (98.7%)
No	4 (0.7%)
Don't know	2 (0.4%)
TO WHICH CATEGORY OF PEOPLE ARE FACE MASKS USEFUL?	
Everyone in Public area	434 (79.6%)
6 years and above	5 (0.9%)
Everyone in public area + 6 years and above	20 (3.7%)
Everyone in public area + 6 years and above + Health workers	7 (1.3%)
Everyone in public area + 6 years and above + Health workers and Covid 19 positive patients	63 (11.6%)
Everyone in public area + Covid 19 positive patients	4 (0.7%)
Everyone in public area + Health workers	1 (0.2%)
Everyone in public area + 6 years and above + Covid 19 positive patients	5 (0.9%)
Everyone in public area + Health workers + Covid 19 positive patient	3 (0.6%)
None	2 (0.4%)

Table 3: Participant’s Attitude regarding wearing mask during coronavirus disease in routine practice.

Variable	Participants (%)
DO YOU THINK YOU ARE CONFIDENT ENOUGH TO CORRECTLY PUT ON A FACE MASK?	
Yes	528 (97.1%)
No	13 (2.4%)
Don't Know	3 (0.6%)
IT IS BELIEVED THAT FACE MASKS ACTUALLY PROTECT AGAINST COVID-19	
Yes	526 (96.7%)
No	11 (2%)
Don't know	7 (1.3%)

WEARING A FACE MASK FREQUENTLY IS ONE OF THE WAYS OF REDUCING TRANSMISSION OF COVID-19	
Yes	532 (97.8%)
No	7 (1.3%)
Don't know	5 (0.9%)

Table 4. Participants practices regarding wearing mask during coronavirus disease in routine practice.

Measures for prevention	Dentists, n (%)
DO YOU THINK YOU ARE CONFIDENT ENOUGH TO CORRECTLY PUT ON A FACEMASK ?	
Yes	528 (96.9%)
No	13 (2.4%)
Don't know	3 (0.6%)
HAVE YOU EVER SHARED YOUR FACEMASK?	
Always	35(6.4%)
Occasionally	4 (0.7%)
Rarely	12 (2.2%)
Never	493 (90.5%)
DO YOU WEAR A FACEMASK IN PUBLIC PLACES TO PROTECT AGAINST COVID-19?	
Always	535 (90.2%)
Occasionally	6 (1.1%)
Rarely	2 (0.4%)
Never	1 (0.2%)
DO YOU WASH YOUR HANDS BEFORE WEARING AND AFTER REMOVING FACEMASK?	
Always	359 (65.9%)
Occasionally	141 (25.9%)
Rarely	38 (7%)
Never	6 (1.1%)
IF THERE IS A NEED TO TALK TO SOMEONE, WILL YOU REMOVE YOUR MASK?	
Always	26 (4.8%)
Occasionally	78 (14.3%)
Rarely	83 (15.2%)
Never	357 (65.5%)

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