

Content available at: <https://www.ipinnovative.com/open-access-journals>

International Journal of Clinical Biochemistry and Research

Journal homepage: <https://www.ijcbr.in/>

Original Research Article

Knowledge and practice of using facemask during n Covid 19 pandemic: A epidemiological survey

Dhiraj Trivedi^{1,*}, Janardan Narute², Vijayalakshmi Shindhe³

¹Dept. of Biochemistry, Zydus Medical College and Hospital, Dahod, Gujarat, India

²D Y Patil University, Kolhapur, Maharashtra, India

³Mahaganapati College of Nursing, Dharwad, Karnataka, India



ARTICLE INFO

Article history:

Received 21-11-2020

Accepted 28-12-2020

Available online 21-01-2021

Keywords:

Covid 19

Virus

Infection

Prevention

Facemask

ABSTRACT

In the time of unavailable pharmaceutical measures, efforts for preventive control of nCovid 19 was on non-pharmaceutical methods like hand wash, facemask and social distancing. Though Government and social media were actively contributing, there was paucity of feedback regarding actual practice of implemented preventive measures in community. Present survey was conducted during July 2020, lockdown period, to correlate knowledge and practice of using facemask as preventive barrier in nCovid 19 infections. Our observations point that though knowledge regarding use of facemask was appropriately delivered, in reality it was not practiced or practiced incorrectly by public. Result of present survey point that effective ness of preventive measure depends on its implementation and obtaining feedback to achieve the goal.

© This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Introduction

Highly contagious nCovid19 Virus continues to spread globally posturing serious human pandemic threat. In India, the results of nCovid19 infection displayed as on 28th July 2020 show more than 15,32,172 people are infected indicating the rate of infection as 1149.5 PCM. This novel virus has already taken a toll of 34,228 individuals [2.23% of infected]. In Gujarat among 6,90,092 individuals tested for nCovid 19 test; 57,962 [8.4%] turned out positive and 2,368 [4.08%] had already succumbed due to infection¹ Complete or partial lockdown was imposed in potential areas to prevent spread of disease. Due to imposed restrictions country was facing side effects on public health, business at market and industries including day to day public routines. Based on current evidences highly infective nCovid 19 virus is transmitted between people through close contacts and infective droplets. Aerosol generated due to splashes and sprays from sneeze and cough may be responsible for airborne transmission. Studies indicate that

even simple talking can generate aerosol.²

On experiencing such a high mortality of an outbreak, a question ringing in every individual's mind was, how to control the spread of nCovid 19 virus? In the period of this emerging respiratory disease, there was no proved pharmaceutical intervention or vaccine available to reduce the rate of infection.³ Uses of non-pharmaceutical and physical barriers were suggested as saviour to control the pandemic spread of nCovid19 virus. Under non-pharmaceutical methods importance was given to social distancing, use of facemask and hand hygiene as best available, easy, and effective control measures.⁴

Face mask has been used form decades as a measure of infection prevention. Despite lack of quantitative evidence regarding their efficiency against contagion; many countries have included use of face mask in their recommendations in pandemic control plans. Number of advisories have been floated by World Health Organisation⁵ and Nation's Ministry of Health. Use of mask has been emphasized by almost every organisation and advice for the proper way of wearing mask to prevent infection was stated. Though

* Corresponding author.

E-mail address: dhiraj99trivedi@gmail.com (D. Trivedi).

initially only persons with fever, cough and breathing difficulty were advised to wear mask but latter it was extended for all symptomatic and non-symptomatic persons. Even it was advised to use face mask for every person going out in public places. Communicable Disease Prevention and Control [CDPC] instructs to place the mask on face so as to cover nose, mouth and chin completely and ensure that there is no gaps on any side.⁶ Use of mask may limit you from getting pollution related disease but using incorrect mask in wrong manner may increase risk of infection.⁷ Lot of information regarding correct type and right way to use facemask is being announced in newspaper, Tele Vision and social media by government as a part of education campaign but there is no feedback regarding how public is practicing in reality.

Effectiveness of using facemask in seasonal influenza is available on record but there is no direct evidence relating use of facemask and protection against nCovid19 available in literature. Though comparative studies are available on use of different categories of face masks against virus transmission in health care workers but, there is paucity of data on community based information regarding use of face mask in prevention of infection.⁸ Study conducted in 2013⁹ reported face mask could reduce severity spread of seasonal flu by one third. Another study conducted in Japan school¹⁰ had similar experience. A study where face mask and hand hygiene were practiced together proved low frequency of flu spread.¹¹ Wearing of Non-medical face mask is in practice among general public of few Asian countries¹² which has indicated favourable results too. Though above evidences are encouraging; the question “Will face mask be effective against Covid19?” remained unanswered. Also do the type and style of wearing face mask have any effect on the results? remained to be explored. The present direct approach questionnaire based single response survey was conducted in rural part of India to find correlation of the knowledge and practice of wearing face mask among general public.

2. Materials and Methods

Present survey is Non-interventional, observational, direct approach, single response type questionnaire based cohort study. Convenient random sampling method was adopted for data collection. Common public visiting market place of rural village makes sample population. Without keeping any gender bias randomly selected common persons were the participant in the study.

2.1. Duration of study

Seven days study conducted in 2nd week of July 2020 between 9.00am to 1.00pm of lockdown relaxation period.

2.2. Sample size

Unprejudiced, randomly selected 500 individuals visiting rural village market.

2.3. Data analysis

Single response Questionnaire based non numeric data was converted and analysed by SPSS software.

2.4. Definitions

Face masks: European Centre for Disease Prevention and Control uses following definition for categorization of Face masks;¹²

1. A medical face mask [also known as surgical mask two /three ply] an infective barrier that limits the transition of infective agent between hospital staff and the patient, use by health care workers.
2. Non-medical facemask: various forms of self-made or commercial face covers made of cloth or paper.
3. A respirators: also called filtering face piece [N95 types], designed to protect wearer against airborne contaminants.

2.5. Data collection

A pretested single page questionnaire was given to each of the participant who volunteered for the study. After explaining the purpose of interaction, As it was anonymous survey written consent was not taken from any participant. The personal identity, except age and gender, was not questioned while collecting data. Type of mask used and style of wearing facemask was noted by trained co-researcher on separate tabulated format while interacting with participants.

3. Result and Discussion

Among 500 participants included in the study [290] 58% were male and [210] 42 % were female. The age of individuals ranged between 10 years to 73 years. Mean age calculated was 36.5years and mode age was 42 years. When analysed for the purpose of outing [310] 62% responders expressed that they were out for marketing, [105] 21% were on their way to job, [55] 11% were venders and [30] 6% were accompanying others.

When the data was analysed for the type of facemask used; 58% responders were using non-medical cloth mask, 13% were using N95 category respirators and 21% were using sari, Dupatta or hand kerchief as face mask, where as 8% responders did not use any face mask.

Table 1 shows the responses obtained from questionnaire on knowledge regarding type of facemask, when to use facemask and how to use facemask in this nCovid19 pandemic time. The analysis shows that almost everyone

Table 1: Responses regarding Knowledge concerning face masks among responders

Responders knowledge regarding	Quality of awareness		
	Good	Average	Nil
Types of face masks	65	35	00
Proper wearing style of face mask	55	19	26
Importance of wearing face mask	69	20	11
When to use face mask	76	21	3
Where to use face mask	48	33	19
Handling of face mask	17	14	69
Care taken while wearing and removing of face mask	15	15	70
Number of times same mask can be used	9	11	80
Any procedure of sterilization	3	2	95
How face mask protects	5	6	89

was aware about facemask. Among participants 55% of responders were aware about proper way of wearing the facemask as per CDC instructions. Nearly 70% expressed knowledge about importance of wearing facemask. Even more than half of the responders were knowing when and where to use face mask. Though all knew that mask can be a protective devise, more than 70% were unaware and had poor knowledge regarding technicality of correctly wearing the facemask and handling of mask for proper protection.

Table 2: Observations regarding practicing the style of wearing face mask

Style of wearing face mask	% Frequency
Proper way [covering nose, mouth and chin]	16
Nose open, Mouth and chin covered	48
Nose and mouth open chin covered	28
Nose, mouth and chin open Wearing mask on neck/head/ear/no mask	08

When records regarding actual wearing of facemask by general population was analysed based on our trained co-researcher's observation; four patterns emerged about wearing of mask. About 48% individuals has kept nose uncovered while 28% has kept both mouth and nose uncovered. Only 16% individuals were wearing facemask in proper manner as per CDC guideline where as 08% individuals had not at all bothered to use mask.

The points came out from discussion is complete covering of nose, mouth and chin makes them suffocated and sweating. Felt difficulty while talking. Some complained about redness of the skin. Though Covid 19 is respiratory infection, Nose, mouth and eye are route of infection about 76% responders did not covered them while wearing the mask. This shows lot of disparity between knowledge and practice of wearing mask. As there is no practice to wear any face cover it makes them uncomfortable particularly in breathing and talking.

4. Source of Funding

None.

5. Conflict of Interest

The authors declare that there is no conflict of interest.

References

2020. Available from: www.covid19india.org.
- Leung NHL, Chu DKW, Shiu EYC, Chan KH, McDevitt JJ, Hau BJP, et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat Med*. 2020;26(5):676–80. doi:10.1016/j.jhin.2013.02.007.
- Booth CM, Clayton M, Crook B, Gawn JM. Effectiveness of surgical masks against influenza bioaerosols. *J Hosp Infect*. 2013;84(1):22–6. doi:10.1016/j.jhin.2013.02.007.
- Ministry of Health@MoHFW_India march 17. 2020] [2. Economic Times, e-paper ET online march 17 2020.
- Advice for the public –World Health Organization. Available from: www.who.int.
- www.Mohfwgovin>pdf>useofmaskbypublic. 2020;.
- Advice on use of mask in community ; 2020. Available from: www.who.int/publications.
- Chu DK, Akl EA, Duda S, Solo K, Yaacoub S, Schünemann HJ, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet*. 2020;395(10242):1973–87. doi:10.1016/s0140-6736(20)31142-9.
- Zhang L, Peng Z, Ou J, Zeng G, Fontaine RE, Liu M. Protection by Face Masks against Influenza A(H1N1)pdm09 Virus on Trans-Pacific Passenger Aircraft. *Emerg Infect Dis*. 2009;19(9):1403–10.
- Uchida M, Kaneko M, Hidaka Y, Yamamoto H, Honda T, Takeuchi S. Effectiveness of vaccination and wearing masks on seasonal influenza in Matsumoto City, Japan, in the 2014/2015 season: An observational study among all elementary schoolchildren. *Prev Med Rep*. 2017;5:86–91.
- Emerging Infectious Diseases; 2009. Available from: www.cdc.gov/eid.
- European Centre for Disease Prevention and Control. Technical report; Using face mask in community; Stockholm: EDCC: 8th April 2020. Stockholm.

Author biography

Dhiraj Trivedi, Professor

Janardan Narute, Assistant Professor

Vijayalakshmi Shindhe, Associate Professor

Cite this article: Trivedi D, Narute J, Shindhe V. Knowledge and practice of using facemask during n Covid 19 pandemic: A epidemiological survey. *Int J Clin Biochem Res* 2020;7(4):497-500.