



# AWARENESS, ATTITUDE AND PERCEPTION OF PEOPLE TOWARDS WEARING OF MASK USAGE DURING COVID 19 PANDEMIC: A QUESTIONNAIRE STUDY

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## ABSTRACT:

**INTRODUCTION:** COVID 19 have caused havoc throughout the world, with loss in every field. Prevention of spread is advocated by use of face mask and social distancing. The aim of the present study is to assess the awareness, attitude and perception of people towards wearing of mask during COVID-19 pandemic.

**METHODS:** A well designed questionnaire consisting of 19 question (14 closed and 5 open ended) was mailed to 240 participants between the age group of 15-30 years, with an advice to fill up the questionnaire and mail it back on departmental mail address.

**RESULTS:** All participants were aware of advantage of mask wear. 58.3% participants preferred N95 mask. 80.4% of them aware that aerosols, droplets, infected surface are the sources of infection 72% of participants were aware that only wearing mask will not help in avoiding infection. 14.16% experienced problems like itching or allergy in region of mask wear. 82% preferred wearing mask to avoid infection. 64% faced breathlessness after wearing mask. 85% showed willingness to continue wearing of mask even if it affects there working efficiency. Social media created the awareness about the precautionary measures.

**CONCLUSIONS:** Participants realized that wearing mask is an effective way to prevent infection. Proper training was important for mask wear and choosing the type. Other measures like hand sanitization, social distancing was also important. Majority of them faced breathlessness with mask wear. Participant, mainly working class accepted wearing mass during duty hours even at the cost of reduced efficiency.

**Keywords:** COVID-19, Masks, Breathlessness, Aerosols, breathing problems.

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## Introduction

COVID 19 pandemic is evolving continuously and rapidly spreading around the world. There is no doubt that Covid-19 pandemic has caused havoc throughout the world. There is hardly any sector which has not faced the brunt of lockdown which is imposed to curb the spread of Covid-19 infection. SARS-cov-2 virus affects the lower respiratory tract and manifest as pneumonia in some humans.

The primary mode of transmission of this viral infection is through respiratory droplets. Common manifestation of this disease is lower respiratory infection. Patients show flu-like symptoms, dyspnoea, and shortness of breath.<sup>[1]</sup>

Education of the masses by administration, social media, and Covid-19 volunteers has made people aware of spread of corona virus. They are aware of the fact that, virus contaminated droplets of saliva from symptomatic patients and asymptomatic carriers can find their way into human body through nose eyes and mouth. By inhaling drop filled air or by hand contact of contaminated surface, every individual poses the risk of infection.

The awareness regarding wearing of mask in preventing the spread of COVID 19 infection is gaining popularity in this pandemic. Masks have been traditionally used for centuries and offered a significant protection against various infections. There are different types of face-masks available with different efficiencies. Masks such as surgical mask, N95 mask, homemade face mask, filtering face mask with or without valve are available for use.<sup>[2,3]</sup> Mask with higher filtration efficacy shows higher resistance to breathing.

Facemasks can significantly alter the inhaled and exhaled air. Wearing mask slows down flow of inspired air and protects upper airway from aerosols into nose. The mask usage benefits people from infection regardless of transmission intensities. One should also consider its effect on airway and its related manifestations in healthy individuals.<sup>[4]</sup>

Presently we are facing second wave of pandemic globally and health sector is overburdened in handling the situation. Administrations are trying to accelerate the vaccination drive. Covid-19 vaccination have effectively decreased the rate of infection. Multiple candidates are getting vaccinated. Many people are growing the optimism that the social distancing restriction and mask wear requirements can be eased with vaccine adoption. Ming wang Shen et al.,<sup>[5]</sup> in his

study said that the degree to which the social distancing restrictions and face mask use will depend greatly on the effectiveness and coverage of vaccine if future epidemics are to be prevented. Many countries with effective vaccination drives have eased out restrictions on mask wear. Only effective vaccination will allow people to return to life as it was before pandemic.

This survey aims to know the awareness, attitude and perception of people towards wearing of mask usage during covid 19 pandemic.

#### **Material and method:**

The participants

A questionnaire survey was designed and mailed to 240 participants.

The sample size was calculated by formula:

$$n = \frac{Z^2 \{P(1-P)\}}{d^2}$$

Sample size: Estimation of population proportion

( $p=0.18$ ,  $1-\alpha=0.95$ ,  $z=1.95996$ ,  $d=0.05$ ,  $n=237$ )

#### **Data collection**

Data was collected via a questionnaire consisting of 19 questions (14 closed and 5 open ended type) which was sent to health practitioner as well as common people through mail between March 2021 to April 2021. Of the 250-questionnaire mailed, 240 filled were mailed back by participants on the departmental address provided to them.

#### **The questionnaire**

The survey designed, contained validated questions regarding people's awareness, attitude and perception of people towards wearing of mask during COVID-19 pandemic

#### **Statistical analysis:**

Statistical package for Social Sciences [SPSS] for Windows, Version 22.0, released 2013, IBM Corp, Armonk, NY, was used to perform statistical analyses.

#### **Descriptive Statistics:**

The descriptive analysis included the expression of participant's responses to the study questionnaire using frequency and proportions.

#### **Results and Discussion**

On evaluation of responses received from 240 participants, it was observed that 79.2% were from the age group of 15-30 years, 15.8% from 31-45 years, 4.2% from 46-60 years, 0.8% from above 60 years of ages groups. Among them 51.7% were female participants and remaining 48.3% were male participants. 73.3% of the participants were working people. Among the 73.3% participants working, 41.9% were health professionals, 40.9% were from Business/service, 11.2% were self-employed, 1.7% did some other work. Remaining participants were homemaker or students. (Table 1)

All the participants were aware of the precautionary measures of COVID-19 pandemic. The main source of information was from social media (36.2%), Health professionals (24.6%), Newspaper (20.4%), Internet (17.9%) and other sources (0.8%). 80.4% of the participants were aware that the mode of transmission of the virus was through aerosols, droplets and through surface, while the remaining 19.8% were aware of at least one of the modes of transmission. 94.67% of the participants were aware of different types of the masks available for use but had their own preferences, whereas 77.44% had knowledge of different guidelines about wearing of mask. When asked for correct way of wearing the mask, 67.67% participants were aware of washing hands before wearing it, 62.5% knew that mask should fit snugly around the face. Only 33.33% knew that mask should cover the bridge of nose completely. Only 27.08% knew that it should also cover the chin. 22.91% participants thought that only covering the mouth with mask will suffice controlling the infection.

The 58.3% participants preferred N95 mask comparatively to other masks like Homemade cloth masks (23.8%), 3 ply masks (10%), Disposable surgical mask (7.9%). Among the participants, working efficiency of 54.6% participants weren't affected by wearing of mask. (Table 3) As an effective measure to avoid COVID-19 infection, 82% of the participants preferred that wearing mask, 76% preferred hand sanitization, 49% preferred social distancing, 31% preferred bathing after returning home, 28% preferred face shield, and 6% preferred only wearing mask. (Graph 1)

Among the participants 72% believed only wearing mask can't avoid infection, 14% believed that wearing mask can avoid infection only up to some extent. 12% believed that wearing mask can avoid infection but risk is involved, only 2% of participants completely agreed that only wearing of mask will prevent them from infection. (Graph 2)

Out of maximum participants who are working away from home, 27% wear mask for 2-4 hours, 23% for more than 4-6 hrs, 21% wear mask for more than 6 hours, 15% wear it for less than 2 hrs within a day. (table 3, Graph 3). Among the participants wearing the mask, 64% faced breathing problems while wearing the mask, 16% felt safe, 14% did not find any difference with or without mask, and 6% said that their working efficiency decreases. (Graph 4). 14.16 % faced allergic reaction or itching on face in mask region.

Among the total participants, 64% felt breathlessness when wearing the mask, 22% felt breathlessness sometimes, and 14% did not feel any breathlessness. (Graph 5)

85% of the participants expressed avoiding wearing mask if it affected their working efficiency, only 3% expressed continuing wearing mask even if it affects their working efficiency. (Graph 6). 12% among them were clueless whether to avoid wearing mask if it affects their working efficiency. Only 32.08% participants were aware of the risks involved in improper wearing of masks.

COVID 19 has affected the entire population of the world and since after that number of ways were devised to control the infection. Pandemic has changed the lifestyle of people drastically. One of the simple and effective method to control this infection is to wear a face mask to prevent direct contact from aerosols. The usage of mask came with the problems such as difficulty in respiration, suffocation, breathlessness, reduced working efficiency etc. With the reference to the pros and cons of wearing mask in mind, it was decided to conduct a survey to evaluate the people's perception of wearing the facemask on airway.

Hulya Akan <sup>[6]</sup> and his colleagues in his study "Knowledge and attitudes of university students toward pandemic influenza: a cross-sectional study from turkey" concluded that participants had enough knowledge about the disease although there were gaps and confusion. They said that, there was a need for new strategies to be developed for the promotion of positive health behaviour with international guidelines. Main source of information of the participants was mass media, so the new policies must be developed to attract the attention of students to use different and more scientific-based information sources. In our study maximum participants were of the working population and were from medical field and business. All of them were aware of precautionary measures during COVID-19 pandemic and majority received information from the social media. Since social media has overrated the information of spread of COVID-19 outbreak it has created an anxiety among people. So, people must cross-check their source of information.

Arthur T. Johnson, <sup>[7]</sup> in his review titled "Respirator masks protect health but impact performance" concluded that the training is important to improve the ability of individuals wearing mask to respond to work conditions. It does not eliminate the basic physiological and psychological limits of performance after wearing mask. In our study, almost half of the participants preferred wearing mask as it did not affect their working efficiency.

Sun Young Kyung, <sup>[8]</sup> and his colleagues in their study of "Risks of N95 face mask use in subjects with COPD" concluded that utmost care should be taken to wear N95 mask in subjects showing COPD. In our study majority preferred N95 mask during COVID-19 pandemic. One should be aware of the associated risks and should take proper guidance regarding wearing of N95 face mask.

Nicole C.J. Brienen, <sup>[9]</sup> and group in their study "The Effect of mask use on the spread of Influenza during a Pandemic" said that use of mask could make an important contribution in delaying an influenza pandemic. They also concluded that as long as humans are involved in performing physical and mental work, accommodation must be made for the improvement of the characteristics of masks to reduce the reproduction number and probably prevent its outbreak. So, they strongly recommended use of face masks within pandemic guidelines. In our current study majority of them suffered from breathlessness and more than half of them were not ready to remove the mask even if it affected their working efficiency. During this pandemic it was essential for everyone to change our lifestyle accordingly and make necessary adjustments to prevent self from infection, The study concluded that wearing of mask and regular hand sanitization are effective means to prevent infection.

Tianjia Guan, <sup>[10]</sup> and his colleagues aimed to study "The effects of facemasks on airway inflammation and endothelial dysfunction in healthy young adults." They concluded that N95 facemasks partially reduced acute particle-associated airway inflammation. Systemic oxidative stress and endothelial dysfunction improved significantly. In our current study maximum number of participants preferred N95 masks to control the infection. Our study revealed that, even though majority of them faced problems of breathlessness, they were ready to work with face mask even after it affected their working efficiency.

## Conclusion

Survey revealed that the participants were aware of the COVID-19 pandemic and had knowledge about the precautionary measure to be taken for preventing infection. During this pandemic people realized that wearing mask will help them from getting infected. Also, selection of type of mask and its proper use was important. Everyone was aware about the fact that that only wearing mask will not avoid infection, other measures like hand sanitization, social distancing were also important. Majority of them were of working class and preferred wearing mask during working hours even if it affected their working efficiency. At the same time majority of them face breathlessness due to wearing of mask.

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TABLE 1: DEMOGRAPHIC DETAILS

	Frequency (n)	Percentage (%)
<b>Age group in (years)</b>		
15 -30 years	190	79.2%
31-45 years	38	15.8%
46-60 years	10	4.2%
>60 years	2	0.8%
Total	240	100%
<b>Gender</b>		
Male	116	48.3%
Female	124	51.7%
Total	240	100%
<b>Working</b>		
Yes	176	73.3%
No	64	26.7%
Total	240	100%
<b>Type of work</b>		
Health Practitioner	73	41.5%
Business/Service	72	40.9%
Self employed	27	11.2%
Others	4	1.7%
Total	176	100%

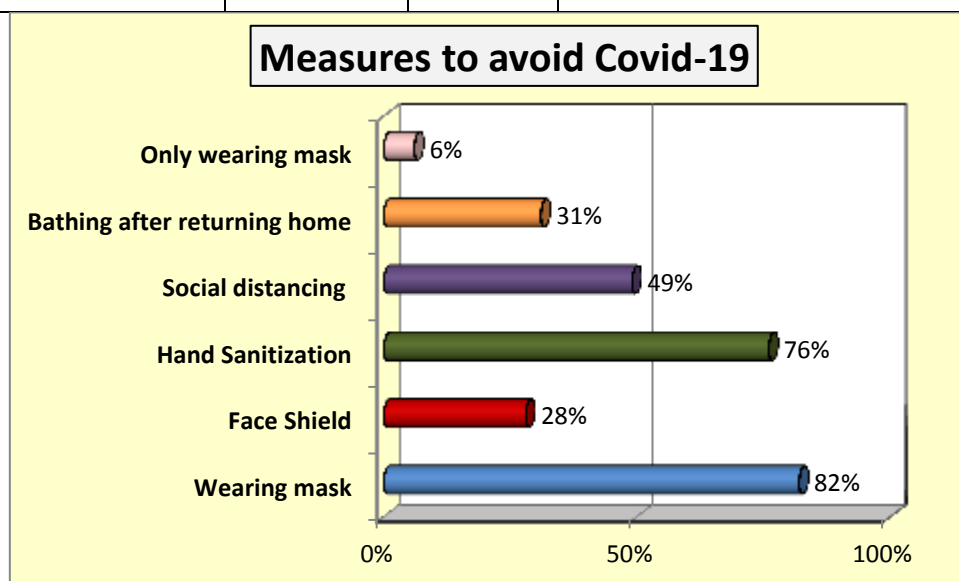
**TABLES 2: Percentages of respondents for questions pertaining awareness toward wearing of mask during COVID-19 pandemic.**

SR.NO.	QUESTIONS	RESPONSES					
		Yes	No				
1	Awareness of all precautionary measures during this COVID-19 pandemic	100%	0%				
2	Source of information of precautionary measures of COVID-19 infection	Newspaper	Social media	Health professionals	Internet	Other	
		20.4%	36.2%	24.6%	17.9%	0.8%	
3	Modes of transmission of this virus	Aerosols	Droplet	Surface	All		
		12.1%	5.4%	2.1%	80.4%		
4	Awareness of different types of mask used	Yes	No				
		95%	5%				
5	Awareness of different guidelines about wearing of mask	Yes	No				
		77.08%	22.92%				
6	Correct way of wearing mask	Should fit snugly across the face	Top of the mask should completely cover the bridge of nose	Bottom of mask extends below the chin.	Only mouth should be covered.	Can pull down their mask or unhook it from their ears when talking.	Washing hands before putting up the mask
		62.5%	33.33%	27.08%	22.91%	12.5%	67.67%

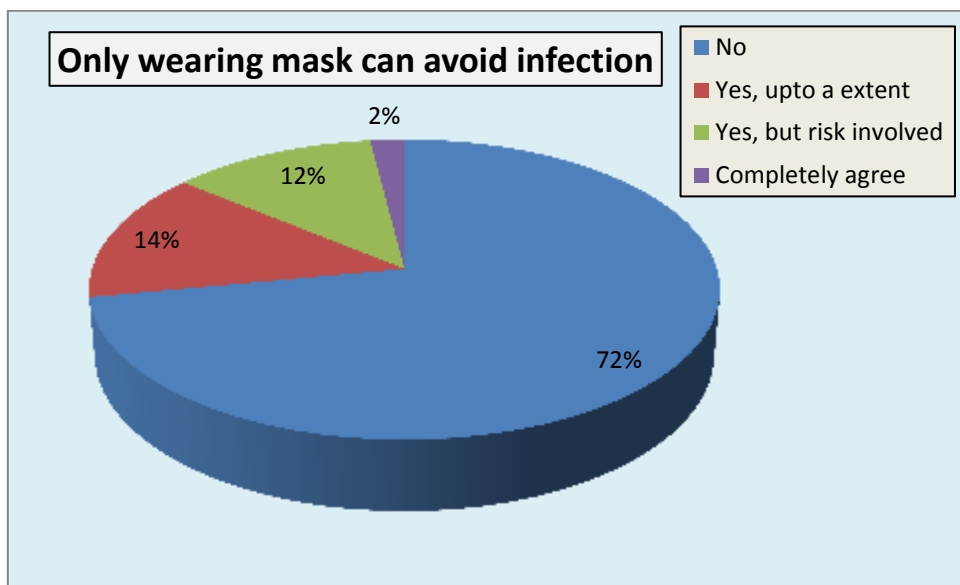
**Table 3: Percentages of respondents for questions pertaining attitude and perception toward wearing of mask during COVID-19 pandemic.**

SR. NO	QUESTIONS	RESPONSES				
1	Measures considered to avoid covid-19 infection	Wearing mask	Face shield	Hand sanitization	Social distancing	Bathing after returning home
		82%	28%	76%	49%	31%
2.	Does only wearing the mask can avoid the infection	Yes. Up to an extent	Yes, but risks involved	Completely agree	No	
		14%	12%	2%	72%	
3	Time of wearing the mask at working place	<2hrs	2-4hrs	>4-6hrs	>6hrs	Work from home
		15%	27%	23%	21%	14%

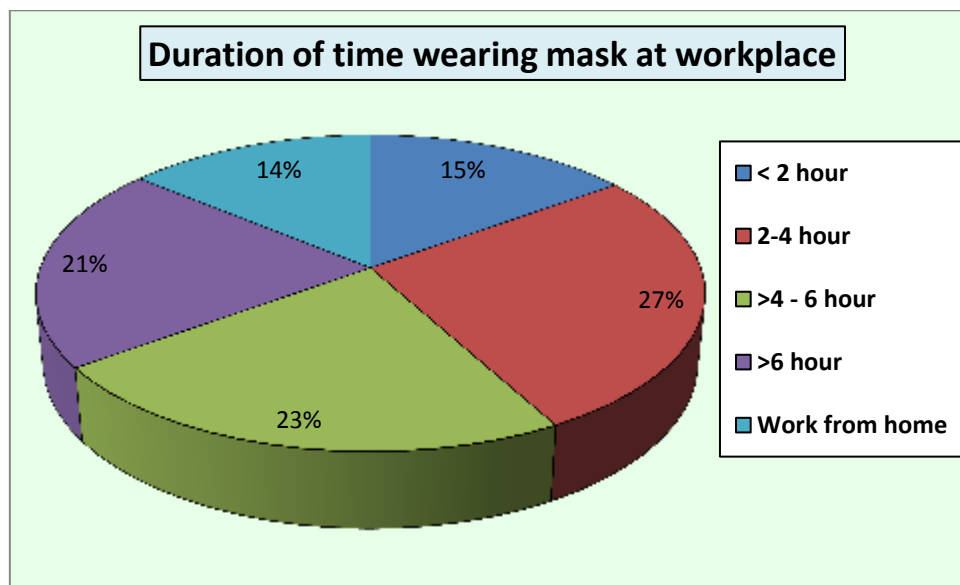
4	Preference of mask to control infection	Homemade cloth mask	N95 mask	3 PLY masks	Disposable surgical mask	
		23.8%	58.3%	10%	7.9%	
5	Difference with or without mask	No difference	Working efficiency decreased	Breathing problems/ Hypoxia	Feels safe with mask.	
		14%	6%	64%	16%	
6	Do you feel that wearing mask affects your working efficiency?	Yes	no			
		45.4%	54.6%			
7	Do you experience any itching or allergy in the region of mask wear?	Yes	No			
		14.16 %	85.84 %			
8	Do you feel any breathlessness and what you do if it is so?	yes	Sometimes	No		
		64%	22%	14%		
9	Will you avoid wearing mask if you face any problems which affect your working efficiency and which are those?	Yes	No	Don't know		
		3%	85%	12%		
10	Do you realise that improper wearing of mask makes the difference in protection?	Yes	No			
		32.08%	67.92%			



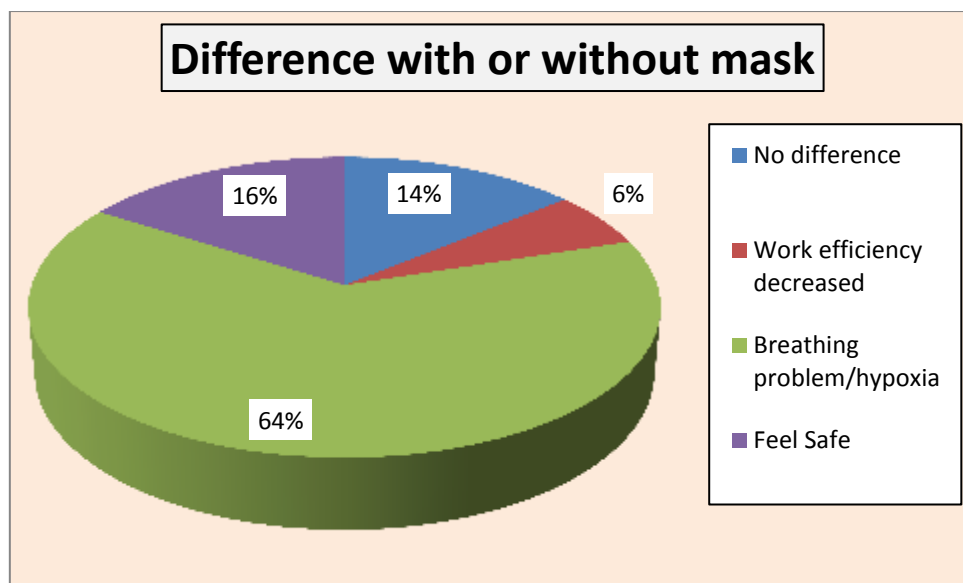
Graph 1: Measures to avoid Covid-19



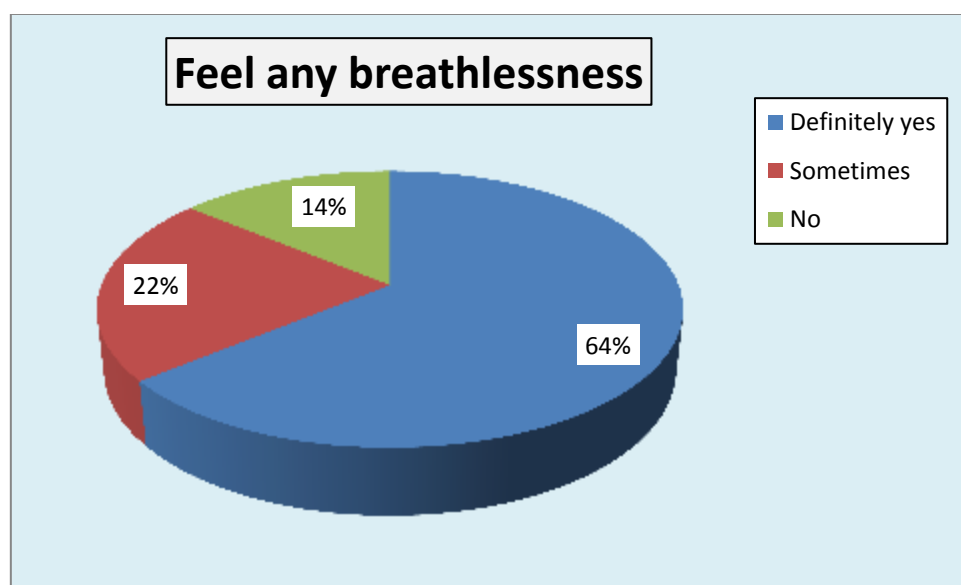
Graph 2: Only wearing mask can avoid infection.



Graph 3: Duration of time wearing mask at workplace.

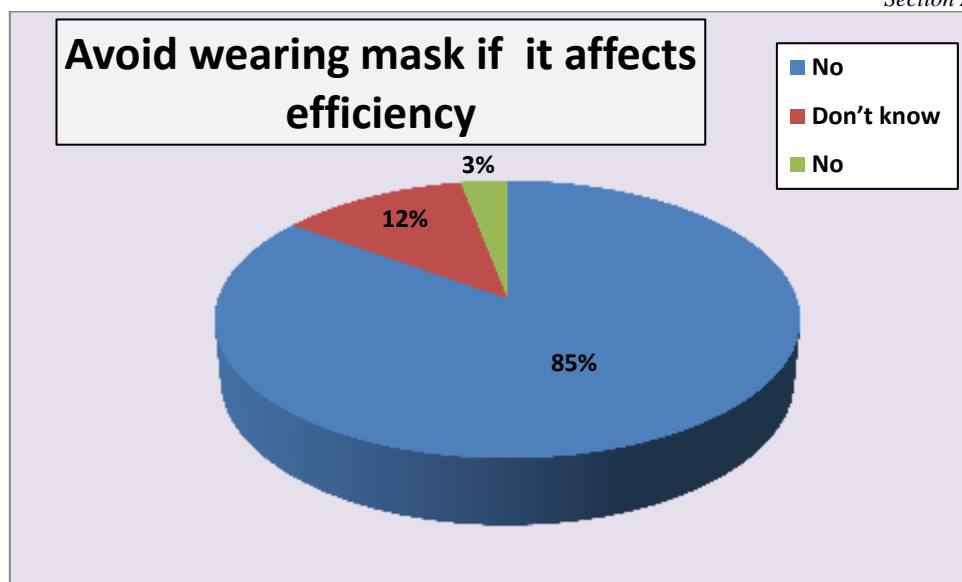


**Graph 4:** Difference with or without mask



**Graph 5:** Feel any breathlessness.





**Graph 6:** Avoid wearing mask if it affects efficiency.