

Protection against covid 19 among medical students

Batool Mutar Mahdi¹, Israa Mohammad Abd AL-Khaliq², Zaid Al-Attar^{3*}

Head of HLA unit, Al-Kindy College of Medicine University of Baghdad¹
HLA unit, Al-Kindy College of Medicine University of Baghdad^{2,3}

Corresponding Author: 3*



Keywords:

Covid 19, compliance, masks, gloves, face shield, antiseptics

ABSTRACT

Adherence to protective measures reluctance and unwilling were a key impediment in obtaining protection and population immunity against coronavirus disease 19 (COVID-19). The purpose of this research is to determine level of compliance toward covid 19 protective measures. Medical students from Al-Kindy College of Medicine/ Iraq participated in a cross-sectional research. In the year 2021, 1093 premeds were polled using a Google Forms questionnaire. A total of 1093 adults participated in this study. The majority were females 62.6% while males were 38.4%. The mean age of participants is 19.64 ± 2.1 yrs. 37% of participants have stated that they wear mask always, while 59% wear it sometimes and 4 % never wear mask. Females were more adherent to wearing masks with a high statistical significance at $p=0.001$. First stage is more adherent to wearing masks as compared to second and third stage with high statistical significance at $p<0.001$. 22.2% of participants stated that they wear gloves always. There was no statistical significance between genders. However, there was significant difference in terms of residence which showing that Baghdad residents are more compliant with wearing gloves at $p=0.002$. Moreover, there was a statistical significance in wearing gloves between different stages in which the second stage is more compliant at $p=0.18$. Using antiseptics is not common as only 17% pf participants have stated that they use it always. Females were more compliant compared to males with high statistical significance at $p=0.001$. In terms of face shield using, most of them never used it (84% of participants). No statistical significance as noted regarding gender, residence or stage parameters. Nearly half of participants have taken covid -19 vaccine before getting infected (48%). Getting infected had no triggering effect to take vaccine that the percentage was only 46%. The information gathered will aid in identifying potential issues that must be addressed to achieve sufficient compliance among medical students.



This work is licensed under a Creative Commons Attribution Non-Commercial 4.0 International License.

1. Introduction

Coronavirus illness 19 (COVID-19) was caused by the fast worldwide spread of coronavirus, resulting in a public health catastrophe and global danger [1]. Several control measures were advised and developed

during pandemic that were practiced by many people over the globe. These include, face masks, face shields, gloves, antiseptics, using tonics and herbs and finally vaccine development [2], [3]. Coronavirus illness 19 (COVID-19) was caused by the fast worldwide spread of coronavirus, resulting in a public health catastrophe and global danger [4]. Despite COVID-19 control methods, this pandemic has produced an urgent need for vaccine development, and large immunization has arisen as a viable preventative approach to manage this illness [5].

Before a well-matched vaccine is generally available, it is crucial that the public undertake personal preventive measures as a manner of mitigating the outbreak of respiratory viruses like COVID-19 [6].

The WHO suggests the following five PPEs for preventing exposure to the COVID-19: Avoid touching your eyes, nose, or mouth; "exercise respiratory hygiene" by washing your hands often; "stay home if you feel sick" by isolating yourself until you feel better; and "wash your hands often" by washing them frequently [7]. One further piece of advice from the WHO: "remain educated and follow advice offered by your healthcare practitioner, your national and local public health authority, or your workplace". In the early stages of the COVID-19 epidemic, when there is no effective vaccine, how effectively the public performs these preventive measures is crucial.

This research aims to evaluate the adherence to protective measures of medical students at Al-Kindy College of Medicine.

2. Materials and Methods

In 2022, medical students from the University of Baghdad's Al-Kindy College of Medicine in Baghdad, Iraq, participated in the cross-sectional research. Only 1093 out of the total number of students were deemed qualified and willing to participate in the anonymous online poll. The data were obtained using an online multi-item questionnaire that was developed based on a review based on previous studies [6], [8]. The questionnaire was delivered to the medical students through the Google Forms application. The poll was sent to general medical student groups through social media, including E-mail, Facebook, Telegram, and Instagram. The survey assessed personal information such as age, gender, academic year, and residence, as well as current vaccine knowledge, general attitudes, vaccination status (vaccination or non-vaccination).

The Scientific and Ethical Committee of Al-Kindy Medical College evaluated the research protocol without financing. Each participant was coded and anonymized to ensure the confidentiality of their data.

2.1 Statistical examination

The data were analyzed using version 25 of SPSS. Statistical descriptions that include frequencies and percentages.

3. Results

A total of 1093 adults (medical students) participated in this study. The majority of participants were female 673, 62.6% while males were 420, 38.4% (Table 1) and (Figure 1 A).

In terms of age, the mean age of sample participants is 19.64 ± 2.1 yrs.

The residence shows that most participants are living in Baghdad 77.2% while rest were distributed in middle and north followed by middle and south parts of Iraq respectively (Table 1).

Most participants were students of second stage 65.1% while rest were from 1st and 3rd stages. Most of participants had no history in covid 19 infection 44.2%. 26.8% of participants had received a treatment for covid 19 and 3.1% required hospitalization. From those who required treatment 59.7% have used tonics and herbs (Table 1) and (Figure 1 H).

Regarding masks wearing, 37% of participants have stated that they wear mask always, while 59% wear it sometimes and 4 % never wear mask (figure 1 B).

Females were more adherent to wearing masks as compared to males with a high statistical significance at $p=0.001$. (Table 2).

First stage is more adherent to wearing masks as compared to second and third stage with high statistical significance at $p<0.001$.

On the other hand, 22.2% of participants stated that they wear gloves always, while 26% wear gloves sometimes and 72% never wear them (Figure 1 C).

In terms of wearing gloves there was no statistical significance between genders. However, there was significant difference in terms of residence which showing that Baghdad residents are more compliant with wearing gloves at $p=0.002$. Moreover, there was a statistical significance in wearing gloves between different stages in which the second stage is more compliant at $p=0.18$.

Using antiseptics is not common as only 17% of participants have stated that they use it always. While majority use it sometimes (52% of participants). Others, never use it 31% (Figure 1 D).

In terms of using antiseptics, females were more compliant compared to males with high statistical significance at $p=0.001$. There were no significant differences in terms of stage or residence.

In terms of face shield using, most of them never used it (84% of participants). Only 3% use it always while the rest 13% use it sometimes (Figure 1 E).

In terms of face shield, most participants never used it (84%) as shown in figure 1 and no statistical significance as noted regarding gender, residence or stage parameters. (Table 2)

Nearly half of participants have taken covid -19 vaccine before getting infected (48%) (Figure 1 F). Getting infected had no triggering effect to take vaccine that the percentage was only 46% (Figure 1 G).

Table 1 study group characteristics in terms of gender, residence, stage, covid 19 infection status, treatment, hospitalization and use of tonics and herbs.

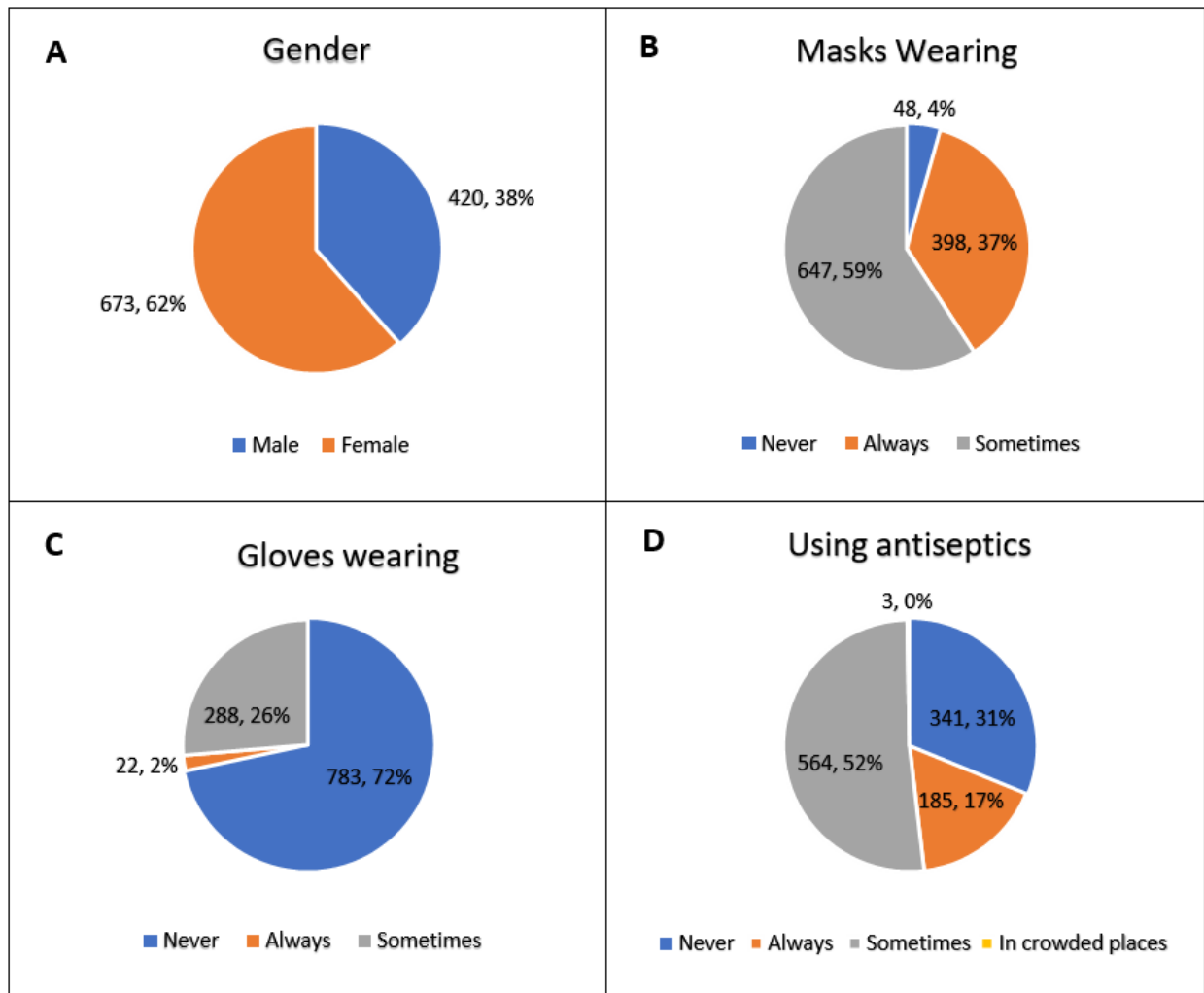
Characteristic	Frequency	Percentage
Gender		
Female	673	61.6%
Male	420	38.4%
Residence		
Bagdad	844	77.2
Middle and south	147	13.4
Middle and north	102	9.3
Stage		

First	198	18.1
Second	712	65.1
third	183	16.7
Infected with COVID19		
No	610	55.8
Yes	483	44.2
Needed treatment		
No	800	73.2
Yes	293	26.8
Needed hospitalization		
No	1059	96.9
Yes	34	3.1
Used tonics and herbs		
No	441	40.3
Yes	652	59.7

Table 2 Association between using personal protection equipment and study group characteristics.

Variable	Always		Sometimes		Never		P value
	No	%	No	%	No	%	
Wearing masks							
Gender							c
Female	262	38.9	392	58.2	19	2.8	
Male	136	32.4	255	60.7	29	6.9	
Residence							0.088
Bagdad	307	36.4	503	59.6	34	4	
Middle and south	61	41.5	81	55.1	5	3.4	
Middle and north	30	29.4	63	61.8	9	8.8	
Stage							<0.001
First	103	52	92	46.5	3	1.5	
Second	226	31.7	448	62.9	38	5.3	
third	69	37.7	107	58.5	7	3.8	
Wearing gloves							
Gender							0.055
Female	11	1.6	163	24.2	499	74.1	
Male	11	2.6	125	29.8	284	67.6	
Residence							0.002
Bagdad	19	2.3	203	24.1	622	73.7	
Middle and south	2	1.4	59	40.1	86	58.5	
Middle and north	1	1	26	25.5	75	73.5	
Stage							0.018
First	6	3	68	34.3	124	62.6	
Second	12	1.7	168	23.6	532	74.7	
third	4	2.2	52	28.4	127	69.4	
Using antiseptics							
Gender							0.001
Female	131	19.5	355	52.6	187	27.8	

Male	54	12.9	212	50.5	154	36.7
Residence						0.615
Bagdad	148	17.5	427	50.6	269	31.9
Middle and south	21	14.3	84	57.1	42	28.6
Middle and north	16	15.7	56	54.9	30	29.4
Stage						0.324
First	33	16.7	113	57.1	52	26.3
Second	117	16.4	359	50.4	236	33.1
third	35	19.1	95	51.9	53	29
Wearing face shield						
Gender						0.321
Female	21	3.1	89	13.2	563	83.7
Male	7	1.7	59	14	354	84.3
Residence						0.239
Bagdad	24	2.8	106	12.6	714	84.6
Middle and south	2	1.4	28	19	117	79.6
Middle and north	2	2	14	13.7	86	84.3
Stage						0.917
First	5	2.5	31	15.7	162	81.8
Second	18	2.5	93	13.1	601	84.4
third	5	2.7	24	13.1	154	84.4



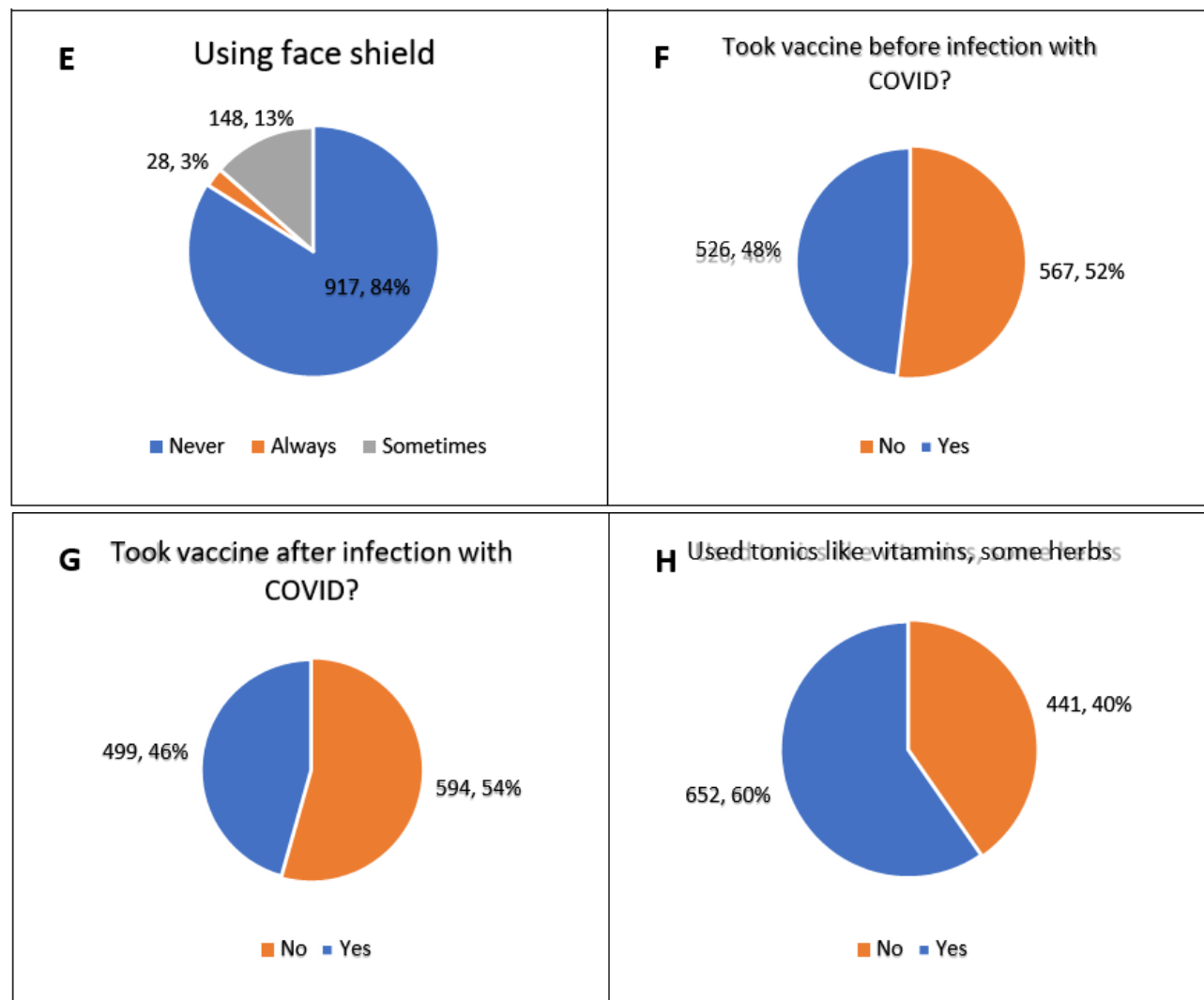


Figure 1: Results of study participants in terms of gender, masks wearing, gloves wearing, using antiseptics, face shield usage, taking vaccine before or after infection, using tonics like vitamins or herbs.

4. Discussion

Since the start of Covid 19 pandemic in 2020, several clinical approaches and therapeutic modalities have been proposed. However, there is some agreement on basic principles to prevent infection from start. These include use of mask, antiseptics, face shield, vaccine and to some extent tonics.

Although, WHO has made a tremendous effort to educate word about the importance of such measures to combat infection and virus transmission through vast number of conference events and publications, still some people are reluctant to adhere to these recommendations.

Thus, we tried in our study to shed light on the extent to which participants who are students in Al-Kindy College of Medicine are complying.

So, in terms of masks wearing, most participants wear masks sometimes. This finding is in agreement with the study of [9], [10].

Most of our sample refused to wear gloves. This fining goes along with American study that has shown that

majority of population refused gloves [10].

In terms of face shields and antiseptics our data show participants reluctance to adhere to these measures. This could be attributed to difficulty in wearing and application which may interfere with work or daily activities or work duties [11].

The information gathered will aid in identifying potential issues that must be addressed to achieve sufficient compliance among medical personnel.

Limitations

There is just one medical school represented in this research, which may limit its applicability. As a result, the rate of access was low, and it was difficult to monitor patients once they were infected or immunized.

5. References

- [1] Chakraborty I, Maity P. COVID-19 outbreak: Migration, effects on society, global environment and prevention. *Science of the Total Environment*. 2020;728:138882.
- [2] Perencevich EN, Diekema DJ, Edmond MB. Moving personal protective equipment into the community: face shields and containment of COVID-19. *Jama*. 2020;323(22):2252-3.
- [3] Zhang B, Zhai R, Ma L. COVID-19 epidemic: Skin protection for health care workers must not be ignored. *Journal of the European Academy of Dermatology and Venereology*. 2020.
- [4] Koonin LM. Novel coronavirus disease (COVID-19) outbreak: Now is the time to refresh pandemic plans. *Journal of Business Continuity & Emergency Planning*. 2020;13(4):298-312.
- [5] Williams V, Edem B, Calnan M, Otwombe K, Okeahalam C. Considerations for establishing successful coronavirus disease vaccination programs in Africa. *Emerging Infectious Diseases*. 2021;27(8):2009.
- [6] Machida M, Nakamura I, Saito R, Nakaya T, Hanibuchi T, Takamiya T, et al. Adoption of personal protective measures by ordinary citizens during the COVID-19 outbreak in Japan. *International Journal of Infectious Diseases*. 2020;94:139-44.
- [7] WHO. World Health Organization (WHO). Basic protective measures against new coronavirus. 2020 [Available from: <https://www.who.int/emergencies/diseases/novel-corona->].
- [8] Larson HJ, Jarrett C, Schulz WS, Chaudhuri M, Zhou Y, Dube E, et al. Measuring vaccine hesitancy: The development of a survey tool. *Vaccine*. 2015;33(34):4165-75.
- [9] Taylor S, Asmundson GJG. Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PLOS ONE*. 2021;16(2):e0246317.
- [10] Khubchandani J, Saiki D, Kandiah J. Masks, Gloves, and the COVID-19 Pandemic: Rapid Assessment of Public Behaviors in the United States. *Epidemiologia* [Internet]. 2020; 1(1):[16-22 pp.].

[11] Arif A, Bhatti AM, Iram M, Masud M, Hadi O, Inam SHA. Compliance and difficulties faced by health care providers with variants of face masks, eye protection and face shield. *Pakistan Journal of Medical and Health Sciences*. 2021:94-7.