

## Original Research Article

## Factors Influencing the Compliance to Facemask Usage among University College Hospital (UCH) Commuters

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**Abstract: Background:** The Covid-19 pandemic has globally impacted how people interact, communicate and work. Facemask use has been advocated by the World health organization (WHO) and several global bodies with growing studies linking its accurate use to decreasing COVID-19 variant cases and associated deaths. For it to be effective in preventing further transmission of Covid-19 and its variants, they have to be worn properly and correctly. Health experts globally and the Nigerian Center for Disease Control (NCDC) have also issued guidelines on the use of facemask within the hospital environment in combination with regular hand hygiene and physical and social distancing to curtail the spread of the virus. Unfortunately information is scanty on the extent to which commuters visiting hospitals comply with this regulatory preventive behaviour. This study therefore assessed the level of compliance with the use of face masks and influencing factors among University College Hospital (UCH) Ibadan commuters. **Methods:** A descriptive cross-sectional study design and observatory survey was used. The sample population was calculated using the Cochran formula and a standard normal value of 1.96 at 95% confidence interval and 5% marginal error with a prevalence of 50%. A simple random sampling technique was adopted in selecting the target population of 260 commuters within UCH premises. Data collection was carried out within 3days from the hours of 8 am -10 am and 12 pm-2 pm. The information obtained from respondents includes the socio-demographic characteristics, knowledge of Covid-19, adherence to the use of facemask, factors promoting and hindering use among users and non-users, satisfaction towards the use of facemask, and the willingness to use facemask in the future. Data was coded and entered into the IBM statistical package for social sciences (SPSS 22nd edition) to analyze and interpret the data collected. Tables, inferences and charts were used for data representation. Chi-square and Fischer's Exact was used to test for statistically significant associations between categorical variables, and the level of significance was set at 0.05. **Results:** Respondents comprised 260 participants aged 15 to 76years, with slightly more males (57.3%). A little above half (57.3%) did not believe they were vulnerable to Covid-19. Surprisingly, willingness towards use (76.2%) was high. Overall (52.7%) wore face mask, at the time of the survey, 42.3% correctly while 46.5% did not wear any. Difficulty in breathing (13.8%) and prevention of COVID-19 (46.5%) were the major factors influencing noncompliance and compliance with use respectively. **Conclusion:** The use of face-mask among commuters in University College Hospital Ibadan, Nigeria was very low which may be attributed to poor risk perception from non- use and weak regulatory enforcement by the hospital COVID-19 task force. Consistent public education and strengthening regulatory functions of the UCH Covid-19 task force are crucial for influencing future compliance to facemask usage in the hospital.

**Keywords:** COVID 19, facemask, Compliance, commuters, Task force, hospital.

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### 1.0 INTRODUCTION

Facemask has been advocated by the World health organization (WHO), The U.S. Centre for disease control (US-CDC) and the Nigerian Centre for Disease Control (NCDC) to be a low cost and effective approach to combatting the spread of COVID-19

alongside social distancing and personal hygiene practices like hand washing (WHO, 2020; CDC, 2019; NDDC, 2020). Studies have recommended that face masks, when used properly could offer considerable levels of protection against the spread of the Covid-19 virus and its variants (Lyu W *et al*, 2020), (Liang *et al*,

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2020), with growing studies linking its accurate use to decreasing COVID-19 cases and associated deaths (Fodjo *et al.*, 2020), (Miyazawa D *et al.*, 2020). To be effective, however, facemasks have to be worn properly, covering the nose, mouth and chin according to the WHO guidelines. Even after vaccination, wearing a facemask plays an important role in preventing the asymptomatic spread of COVID-19 and reinfection. The mode of action of facemasks in preventing the spread of COVID-19 is by acting as a barrier against aerosols and respiratory droplets which is one of the major mechanisms through which the virus is spread (Fischer *et al.*, 2020). Afiadigwe EE *et al.*, (2021) reported an 86.6% compliance rate to the use of face masks in a cross-sectional study of 442 individuals in a tertiary hospital in Anambra State, Nigeria. However, it was also reported in the same study that the high compliance rate could be as a result of the heavy presence of taskforce agents enforcing its use, and also face mask usage is a prerequisite to seeing a medical doctor. In a similar study by Osaro BO *et al.*, (2021). In South-south Nigeria, 93.9% (340) of the study participants were observed to use their facemasks but only about a tenth 10.6% (36) of them admitted to using it at all times in public spaces. The prevalence as reported by Machida M *et al.*, (2020) in a web-based cross-sectional study of 2142 participants using a facemask in public spaces was 80%. While 38.3% to 83.5% of the study participants reportedly used it as stated by the WHO with only 23.1% adhering to the usage recommendations. Ganczak M *et al.*, (2021) also reported a similar compliance rate of 74% in a non-participatory observational study of the general public in Poland, however, the compliance rate dropped to 66% at the end of the study. Loyal L *et al.*, (2021) observed a steady rate of facemask compliance with an average of 78% of the 600 study participants, observed to correctly wear facemasks in a 4 hospital survey, with the hospital staffs having the highest compliance rate of 85%. As much as the benefits of facemasks are advocated, public adherence to several laws and protocols mandating its usage has been poor, most especially in high-risk areas like hospitals and crowded public areas.

Currently, the University college hospital (UCH) presents a very unique front for assessing facemask usage and compliance rate, not only because it is the largest teaching hospital within the Southwestern region of Nigeria, but for the reason that the hospital management has put measures to ensure compliance and enforcement of facemask usage among members of staffs, patients and people frequenting the hospital premises. Part of what drove the management decision was the high rate of Covid-19 infection among staff members of institution at the onset of the pandemic including the Chief Medical Director(CMD) among others and the death of a professor of Clinical Virology charged with the responsibility of establishing a functional COVID-19 task force in 2020.

Furthermore, the presidential task force was constituted on the 17<sup>th</sup> of March 2020 in the institution, saddled with the responsibility of carrying out monitoring and strict and daily enforcement of COVID-19 preventive measures within the entire hospital environment (UCH task force, 2020). Despite the existence of this task force, little is known about the compliance rate of the people who daily enter and exit the hospital to the measures and enforcement implemented by the task force. Furthermore, there has been no study carried out to specifically access the compliance rate of facemask usage within UCH premises reflecting the efficiency of the taskforce personnel's enforcement, hence the need for this study to assess the impact of the mandatory enforcement on the level of compliance of facemask usage within UCH.

There are four objectives of this study; Determining the level of facemask usage at the time of the survey, identifying factors that influence the usage and non-usage of face masks among UCH Commuters, assessing the opinions of UCH commuters on the use of face masks as one of the preventive measures against COVID-19 and ascertaining if respondents are willing to use facemask when revisiting the hospital

#### **Study Location**

University College Hospital (UCH) is one of the tertiary health care and medical research institutions in Nigeria, located in Ibadan North LGA of Oyo State. It is the first, of the 15 Federal University Teaching Hospitals in Nigeria and a referral centre. Service departments in the hospital are grouped into clinical and non-clinical departments. This study was carried out within the University College Hospital premises. It is a high-risk area with a considerable number of individuals visiting on a daily basis for various reasons. The hospital serves as a central healthcare institution for her staff and accommodates visitors from communities within its catchment areas.

#### **Study Design**

A descriptive cross-sectional study design and observatory survey were used for this research with interest in assessing facemask use among commuters entering and exiting the University College Hospital and factors influencing their compliance to facemask usage. The sample population was calculated using the Cochran formula and a standard normal value of 1.96 at 95% confidence interval and 5% marginal error with a prevalence of 50%. A purposive sampling technique was adopted in selecting the target population of 260 commuters within UCH premises. Data collection was carried out randomly within 3days from the hours of 8 am -10 am and 12 pm – 2 pm. The information obtained from respondents includes the socio-demographic characteristics, knowledge of Covid-19, factors that promote the use of facemask, factors that inhibit the use of facemask, adherence to the use of facemask,

satisfaction towards the use of facemask, and the willingness to use of facemask.

Data were coded and entered into the IBM statistical package for social sciences (SPSS 22<sup>nd</sup> edition) to analyze and interpret the data collected. Tables, inferences and charts were used for data representation. Chi-square and Fischer’s Exact was used to test for statistically significant associations between categorical variables, and the level of significance was set at 0.05.

Individuals (adult and adolescent) who consented to participate were included in the study while children and individuals whose faces were fully covered (with helmet and niqab) were excluded from the study.

Ethical approval was obtained from the Ethics Committee of the Department of Health Promotion and Education, University of Ibadan. Respondents were reassured of anonymity/informed that the study was solely for a research survey.

## RESULTS

### 1.0 Socio-Demographic Characteristics

More of the respondents (57.3%) were males, Yoruba (82.3%) and Christians (76.9%). In addition, most were within the age range of 25-34 years while (74.2%) had tertiary education, and slightly more than half (58.1%) were employed. Nearly half (49.6%) of the respondents were married, while 35.7% were staff of the university teaching hospital (See Table 1)

**Table 1 Socio-Demographic Characteristics**

Variables	Frequency N=260	Percentage (%)
<b>Gender</b>		
Male	149	57.3
Female	111	42.7
<b>Age</b>		
<b>Mean age 32.8 ± 11.4</b>		
15-24	69	26.5
25-34	92	35.4
35-44	58	22.3
45-54	30	11.5
55-64	7	2.7
65-74	2	0.8
75-80	2	0.8
<b>Religion</b>		
Christianity	200	76.9
Islam	57	21.9
Others	3	1.2
<b>Ethnicity</b>		
Yoruba	214	82.3
Hausa	2	0.8
Igbo	27	10.4
Others	17	6.5
<b>Education</b>		
Primary	7	2.7
Secondary	60	23.1
Tertiary	193	74.2
<b>Employment Status</b>		
Employed	151	58.1
Unemployed	78	30.0
Self-employed	31	11.9
<b>Marital Status</b>		
Single	128	49.2
Married	129	49.6
Divorced	2	0.8
Separated	1	0.4
<b>Purpose of Visit</b>		
Working	93	35.8
Study	53	20.4
Ad-hoc (Artisans, traders, and support workers)	36	13.8
Out-patient		
Other reasons	19	7.3

	59	22.7
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### 2.0 Source of Information on Mandatory Use of Facemask

The major source of information among respondents on the mandatory use of facemask as

reported (57.3%) was during visits to the hospital (Figure 1).

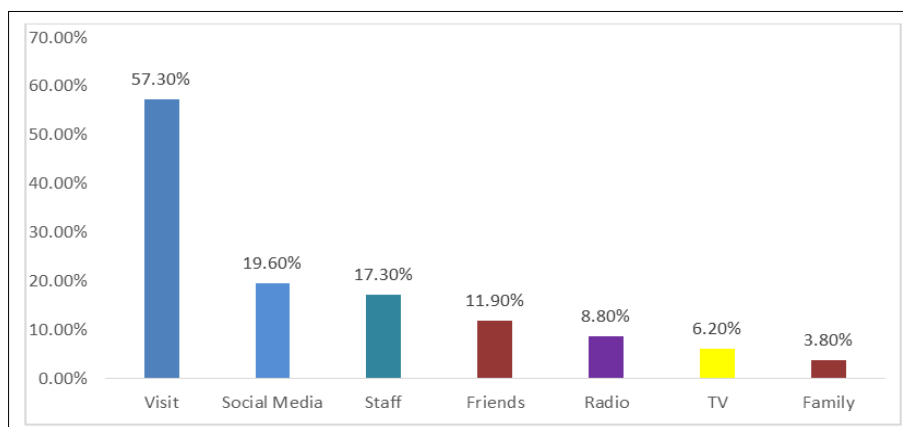


Figure 1: Source of Information on Mandatory Use of Facemask

### 3.0 Perception of Covid-19

About two-thirds of the respondents (65.4%) reported not been infected by the virus or know someone who had covid-19. A little above half (57.3%) didn't believe they are vulnerable to covid 19. Surprisingly, many (85.8%) agreed that Covid-19 is a

serious disease that could cause hospitalization and even death. In addition to this, (83.8%) believed that there is a policy promoting the use of facemask in the hospital setting and 92.3% knew about the mandatory use of facemask during visits to the hospital (Table 2).

Table 2 Perception of Covid-19

Variables	Yes F (%)	No F (%)
Have you been infected/know someone with covid-19	90(34.6)	170(65.4)
I feel I am vulnerable to Covid-19	111(42.7)	149(57.3)
I believe COVID is a serious disease that causes hospitalization and even death	223(85.8)	37(14.2)
I believe there's a policy promoting the use of a facemask	218(83.8)	42(16.2)
Are you aware that wearing a facemask is mandatory for all who visit U.C.H	240(92.3)	20(7.7)

### 4.0 Level of Facemask Usage as at the Time of Survey

The major type of facemask used by respondents was surgical mask while few used the N95 type of facemask (Figure 2)

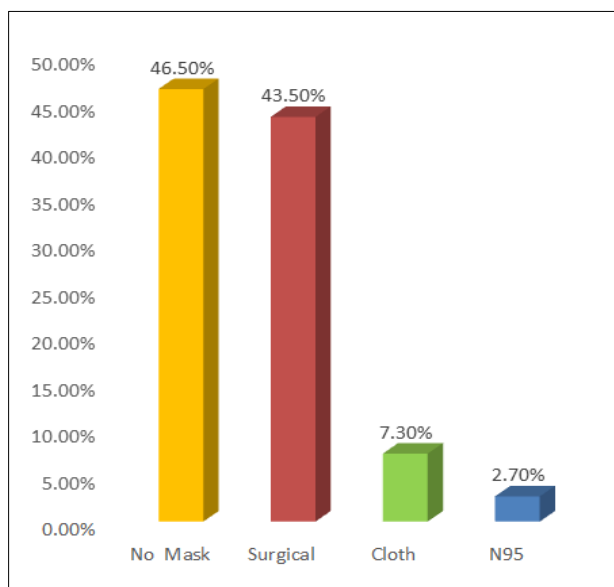


Figure 2: Types of Facemask Worn by Respondents

**5.0 Level of Facemask Usage as at the Time of Survey**

Overall, only (52.7%) wore a facemask currently at the point of observation. About two fifths

(42.3%) wore a facemask covering the nose, mouth, (44.6%) and chin (56.5%). Interestingly, 62.3% had a facemask which was seen (Table 3).

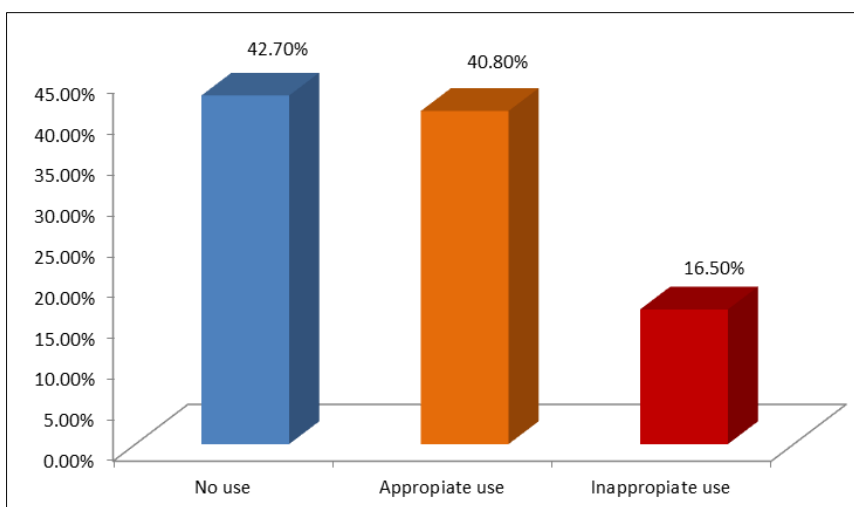
**Table 3: Level of Facemask Usage as At the Time of Survey**

Variables	Yes F (%)	No F (%)
Facemask is worn covering the nose	110(42.3)	150(57.7)
Facemask is worn covering the mouth	116(44.6)	114(55.4)
Facemask is worn covering the chin	147(56.5)	113(43.5)
Facemask seen	162(62.3)	98(37.7)

**6.0 Use of Facemask among Respondents**

When disaggregated by correct and incorrect use, 40.8% of the respondents appropriately (correctly) wore a facemask covering the nose, mouth and chin

while 16.5% of respondent used a facemask appropriately (incorrectly) (not covering either the nose, the mouth or the chin) and a majority of the respondents (42.7%) did not use a facemask ( Figure 3)



**Figure 3: Use of Facemask among Respondents**

**7.0 Reasons for Non-Usage of Facemask**

Many reasons were given for non-usage of facemasks including “no reason” (10.4%) and inability to breathe well if used (6.2%) (Table 4)

**Table 4: Reasons for Non-Usage of Facemask among Respondents**

Reasons	Frequency N= 116	Percentage (%)
Not able to breathe well	16	13.8
Forgot to use	12	10.3
Tired of using	12	10.3
No reason	27	23.3
I’m alone, I will use it later	17	14.6
Not used to it	3	2.6
Health status	2	1.7
Just finished eating	6	5.2
Heat	14	12.1
Personal issues	6	5.2
Exercising	2	1.7
No enforcement	1	0.9
Covid-19 no longer a threat	1	0.9

**8.0 General Factors that Promote the Use of Facemask According to Respondents**

The major factor that promotes the use of facemask among respondents is mostly ‘prevents the

spread of covid-19” (46.5%) “Using a facemask prevents others from getting covid-19” (44.6%) and “don’t want to be sent back by the task force” 27.3%. Others are shown in (Table 5).

**Table 5: General Factors that Promote the Use of Facemask According to Respondents**

Variables	Yes	No	Not Applicable
It is cheap	82(31.5)	60(23.1)	118(45.4)
It prevents Covid-19	121(46.5)	21(8.1)	118(45.4)
I am susceptible because of my health	60(23.1)	82(31.5)	118(45.4)
It helps to prevent others from getting Covid-19	116(44.6)	26(10.0)	118(45.4)
I wear facemasks to UCH because I don't want to be sent back by the taskforce	71(27.3)	72(27.7)	118(45.4)

**Table 5: General Factors that Promote the Use of Facemask According to Respondents (Contd)**

Variables	Frequency N=260	Percentage (%)
Air pollution	11	4.2
Mandatory	2	0.8
To hide my Face	1	0.4
Health Reasons	1	0.4
Not Applicable	245	94.2

**9.0 Association between Periods and Use of Facemasks**

A large number of respondents in the morning (81.0%) used a facemask compared with just (19.0%)

that used a facemask in the afternoon. However, there was no significant association between the use of facemask and period ( $p > 0.05$ ).

**Table 6: Association between Periods and Use of Facemasks**

Periods	Currently wearing a facemask		X <sup>2</sup> 0.08	p-value 0.80
	Yes N=137	No N=123		
Morning	111(81.0)	98(79.7)		
Afternoon	26(19.0)	25(20.3)		

**10.0 Association between Facemask Usage and Socio-Demographic Characteristics of Respondents**

Many of the respondents (33.0%) within the age bracket of 25-34 years used a face mask appropriately while few (11.6%) within 45-54 years used it appropriately ( $p > 0.05$ ). In addition to this more males (54.7%) compared females (45.3%) used

facemasks appropriately. In terms of religion, Christians (54.7%) wore a face mask appropriately when compared to Muslims (16.0%). The use of facemasks was however not statistically different in terms of religion ( $p > 0.05$ ). More Yoruba's (76.4%) made use of a facemask appropriately when compared to Igbos (15.1%).

**Table 7: Association between Facemask Usage and Socio-Demographic Characteristics of Respondents**

Socio-Demographic Characteristics	Facemask Usage			X <sup>2</sup>	p-value
	Appropriate use	Inappropriate use	Not used		
Age				9.10 <sup>F</sup>	0.70
15-24	27(25.5)	9(20.9)	33(29.7)		
25-34	35(33.0)	14(32.6)	43(38.7)		
35-44	22(20.8)	13(30.2)	23(20.7)		
45-54	17(11.6)	5(11.6)	8(7.2)		
55-64	3(2.8)	2(4.7)	2(1.8)		
65-74	1(0.9)	0(0.0)	1(0.9)		
75-80	1(0.9)	0(0.0)	1(0.9)		
Gender				3.10 <sup>F</sup>	0.22
Male	58(54.7)	21(48.8)	70(63.1)		
Female	48(45.3)	22(51.2)	41(36.9)		
Religion				7.70 <sup>F</sup>	0.07
Christianity	87(82.1)	34(79.1)	79(71.2)		
Islam	17(16.0)	8(18.6)	32(28.8)		
Others	2(1.9)	1(2.3)	0(0.0)		
Ethnicity				8.90 <sup>F</sup>	0.13
Yoruba	81(76.4)	35(81.4)	98(88.3)		
Hausa	1(0.9)	1(2.3)	0(0.0)		

Igbo	16(15.1)	5(11.6)	6(5.4)		
Others	8(7.5)	2(4.7)	7(2.7)		
Education					
Primary	3(2.8)	0(0.0)	4(3.6)	5.20 <sup>F</sup>	0.20
Secondary	18(17.0)	13(30.2)	29(26.1)		
Tertiary	85(80.2)	30(69.8)	78(70.3)		
Employment					
Employed	64(60.4)	27(62.8)	60(54.1)	3.00 <sup>F</sup>	0.60
Unemployed	33(31.1)	11(25.6)	34(30.6)		
Self-employed	9(8.5)	5(11.6)	17(15.3)		
Marital status					
Single	54(50.9)	16(37.2)	58(52.3)	8.30 <sup>F</sup>	0.13
Married	50(47.2)	26(60.5)	53(47.7)		
Divorced	2(1.9)	0(0.0)	0(0.0)		
Separated	0(0.0)	1(2.3)	0(0.0)		
Purpose					
Working	41(38.7)	16(37.2)	36(32.4)	6.30 <sup>F</sup>	0.62
Study	23(21.7)	8(18.6)	22(19.8)		
Ad-hoc	14(13.2)	3(7.0)	19(17.1)		
Patient	6(5.7)	6(14.0)	7(6.3)		
Other Reasons	22(20.8)	10(23.3)	27(24.3)		

**11.0 Willingness to Use Facemask when Revisiting UCH**

When the extent to which respondents were willing to use a facemask when revisiting was assessed,

a large proportion of respondents (76.2%) agreed to always be willing to use facemask when revisiting UCH.

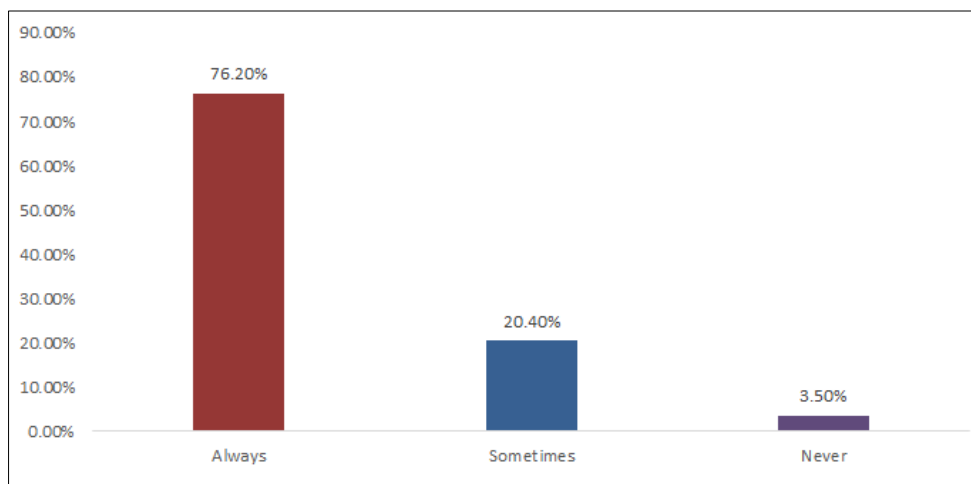


Figure 4: Willingness to Use Facemask when Revisiting UCH

**12.0 Association between Socio-Demographic Characteristics and the Willingness to Use a Mask**

A large number of respondents with tertiary education (78.8%) agreed to the use of face masks when revisiting UCH when compared with just 17.7% with

secondary education who agreed to the same. There was a statistical association between willingness to use and educational status. (p<0.05). There was also a statistical association between willingness to use, age and purpose of visit.

Table 8: Association between Socio-Demographic Characteristics and the Willingness to Use a Mask

Socio-demographic Characteristics	Willingness to use a Mask			X <sup>2</sup>	p-value
	Always	Sometimes	Never		
<b>Gender</b>					
Male	110(55.6)	32(60.54)	7(77.8)	1.85 <sup>F</sup>	0.42
Female	88(44.4)	21(39.6)	2(22.2)		
<b>Religion</b>					
Christianity	154(77.8)	40(75.5)	6(66.7)	2.31 <sup>F</sup>	0.70
Islam	41(20.7)	13(24.5)	3(33.3)		

Others	3(1.5)	0(0.0)	0(0.0)		
<b>Ethnicity</b>					
Yoruba	163(82.3)	43(81.1)	8(88.9)	1.90 <sup>F</sup>	0.10
Hausa	2(1.0)	0(0.0)	0(0.0)		
Igbo	20(10.1)	6(11.3)	1(11.1)		
Others	13(6.6)	4(7.5)	0(0.0)		
<b>Education</b>					
Primary	7(3.5)	0(0.0)	0(0.0)	14.10 <sup>F</sup>	0.01*
Secondary	35(17.7)	23(43.4)	2(22.2)		
Tertiary	156(78.8)	30(56.6)	7(77.8)		
<b>Employment</b>					
Employed	115(58.1)	32(60.4)	4(44.4)	4.53 <sup>F</sup>	0.31
Unemployed	63(31.8)	12(22.6)	3(33.3)		
Self-employed	20(10.1)	9(17.0)	2(22.2)		
<b>Marital Status</b>					
Single	98(49.5)	27(50.9)	3(33.3)	4.40 <sup>F</sup>	0.86
Married	97(49.0)	26(49.1)	6(66.7)		
Divorced	2(1.0)	0(0.0)	0(0.0)		
Seperated	1(0.5)	0(0.0)	0(0.0)		

F-Fisher Exact, \*p<0.05, X<sup>2</sup>-Chi-square

**Table 8: Association between Socio-Demographic Characteristics and the Willingness to Use a Mask Contd**

Socio-demographic Characteristics	Willingness to use a Mask			X <sup>2</sup>	p-value
	Always	Sometimes	Never		
<b>Purpose of Visit</b>					
Staff	79(39.9)	12(22.6)	2(22.2)	15.90 <sup>F</sup>	0.02*
Student	41(20.7)	11(20.8)	1(11.1)		
Ad-hoc	24(12.1)	11(20.8)	1(11.1)		
Patient	9(4.5)	8(15.1)	2(22.2)		
Visit	45(22.7)	11(20.8)	3(33.3)		
<b>Age</b>					
15-24	56(28.3)	13(24.5)	0(0.0)	20.04 <sup>F</sup>	0.04*
25-34	60(30.3)	27(50.9)	5(55.6)		
35-44	45(22.7)	10(18.9)	3(33.3)		
45-54	28(14.1)	1(1.9)	1(11.1)		
55-64	6(3.0)	1(1.9)	0(0.0)		
65-74	2(1.0)	0(0.0)	0(0.0)		
>74	1(0.5)	0(0.0)	0(0.0)		

F-Fisher Exact, \*p<0.05, X<sup>2</sup>-Chi-square

**13.0 Adherence to the Use of a Facemask**

Only 46.2% of respondents agreed to always wear a facemask to cover the mouth, nose and chin while just 24.2% always re-use their facemasks

**Table 9: Adherence to the Use of a Facemask**

Variables	Always	Sometimes	Never
I wear a facemask to cover my mouth, nose and chin	120(46.2)	131(50.4)	9(3.5)
How often do you re-use a facemask	63(24.2)	138(53.1)	59(22.7)

**14.0 Reasons for Non-Use of Facemasks**

Only (10.8%) attributed nonuse of facemask due to not being able to afford a facemask. In addition,

(35.8%) attributed none use to shortness of breath and 26.9% attributed none use to the fact that it hinders communication between people

**Table 10: Reasons for Non-Use of Facemasks**

Variables	Yes	No	Not Applicable
I cannot afford to buy a facemask all the time	28(10.8)	118(45.4)	114(43.8)
Causes shortness of breath	93(35.8)	53(20.4)	114(43.8)
I develop skin irritation when I use masks	28(10.8)	118(45.4)	114(43.8)
It affects my communication with other people	70(26.9)	76(29.2)	114(43.8)
Facemask makes me unattractive	32(12.3)	114(43.8)	114(43.8)



**Table 10: Reasons for Non-Use of Facemasks (Contd)**

Variables	Frequency N=260	Percentage (%)
Heat	5	1.9
Discomfort	11	4.2
Illiteracy	4	1.5
Disbelief	2	0.8
Tired of Use	5	1.9
Not Applicable	233	89.6

**15.0 Opinions of UCH Commuters on Use of Face Masks as a Preventive Measure for COVID-19 in the Hospital**

Many of the respondents (88.5%) think the current policy on wearing a facemask in UCH premises

is right. In addition to this, (76.2%) agreed that they feel safe when they see others wearing a facemask. Interestingly, (78.5%) believed that wearing a facemask reduces the risk of getting Covid-19.

**Table 11: Opinions towards the Usage of Facemask**

Variables	Yes	No
I think the current policy on wearing a facemask in UCH is premises is right	230(88.5)	30(11.5)
I feel safe when I see others wearing facemasks within UCH premises	198(76.2)	62(23.8)
Wearing a facemask reduces my risk of getting Covid-19 in UCH	204(78.5)	56(21.5)
Wearing a facemask reduces the risk of transmitting Covid-19 in UCH	209(80.4)	51(19.6)

**5.0 DISCUSSION**

**5.1 Socio-Demographic Characteristics of Respondents**

This present study assessed compliance and usage of facemasks among commuters at the University College Hospital and College of Medicine, Ibadan. Many of the respondents were males within 25-35 years, which indicates a younger population. In addition to this, a large proportion of the respondents were identified as Yoruba. This is not surprising because the study was conducted in an area that is predominantly dominated by this ethnic group. It is also important to note that more of the studied population had tertiary education. This may be because a larger proportion of commuters assessed were either staff of the hospital or students. Another study was carried out in Nigeria by Edet CK *et al.*, (2020) also reported more respondents with tertiary education. This indicates that many Nigerians especially within the age range described in this study have higher educational degrees.

**5.2 Source of Information**

This study estimates commuters’ source of information about the mandate on the use of facemasks in UCH. The information regarding the mandates generally requires wearing a face mask when visiting UCH. At the time of administering the questionnaire, the majority of the participants found out about the mandatory use of facemask during their visit to UCH. However, despite the information about the mandate and the higher number of commuters finding out during their visit, it barely steered the appropriate use of facemask, and as such, it was independent in relation to adherence to the use of facemask. The purpose of this study was to estimate the overall effect of this mandate, with reference to the source of information; however, it

varied in its strictness and the consequences of noncompliance. It was reported in a study conducted by (Lyu W *et al.*, 2020) that mandating public use of face masks was associated with a reduction in the COVID-19 daily growth rate. Although knowing the success of these regulations in restricting COVID-19 spread at the neighborhoods and population levels is vital for creating effective policies, studying how their effects change with compliance and enforcement strategies is also significant (Lyu W *et al.*, 2020). There was a good knowledge of COVID-19 among the participants in this survey, with 96.2 per cent of them opined to have heard about it. This knowledge is however riddled with a lot of prevalent misconceptions (Lyu W *et al.*, 2020). Future research should look into if and how differences in strictness and enforcement modify the consequences of these mandates, as there are many misconceptions and misinformation concerning the COVID-19 epidemic (Lyu W *et al.*, 2020).

**5.3 Perception of Covid-19**

In order to provoke a positive attitudinal response to COVID-19, the public must perceive COVID-19 as a serious health condition that impacts their life in numerous ways and also must possess a strong belief that everybody is susceptible to it at any time and in any locality (Birhanu Z *et al.*, 2021). Our findings revealed that myriads of perception were associated with COVID-19; these included Covid as a serious disease that could cause hospitalization or death and vulnerability of being infected. Responses obtained showed that 57.3% of participants did not believe that they were susceptible to COVID-19, although the majority of the participants 83.8% believed that COVID is a serious disease that could cause death. The results are contradictory to a Chinese study, which provides information about the COVID-19-affected people

(Zhong BL *et al.*, 2020). There has been strong evidence that with a low level of perceived threat appeal, the public might not develop the right cognitions such as positive intentions, and attitude that mediates positive behavioural change (Birhanu Z *et al.*, 2021), (Rimal RN *et al.*, 2003). The low level of COVID-19 threat among the respondents might be suggesting that the task force had a deficit in threat appeal content, especially in addressing dimensions of vulnerability to and severity of the COVID-19.

#### **5.4 Level of Usage as at the Time of the Survey**

The study revealed that a little below the average of the participants used a face mask at the time the survey was conducted and this cuts across all participants irrespective of socio-demographic characteristics. The practice of using a facemask appropriately in public places as observed by this study was noted to be 40.8% of participants compared to studies conducted in Nigeria (Edet CK *et al.*, 2020), Uganda (Sikakulya FK *et al.*, 2021) and Pakistan (Kumar J *et al.*, 2020) where it was reported that 90.2%, 95.2% and 93.6% respectively were observed to have worn a face mask correctly to prevent the spread of COVID-19. The finding of this result is similar to results obtained from studies conducted in Malaysia (Azlan AA *et al.*, 2020), Ghana (Hager E *et al.*, 2020) and Nigeria (Adebowale OO *et al.*, 2021) where low usage of appropriate usage of a facemask was reported 51.2%, 32.3% and 58.1%. The finding from this study, although a bit low; there seems to be a possible explanation for this behaviour, the use of facemask is not a norm in Nigeria but was adopted as a result of the COVID-19 pandemic. It is unusual to see a typical Nigerian wear a facemask when ill.

#### **5.5 Reasons for Non-Usage of Facemask**

It was discovered that the major reason for non-usage of a facemask was due to no reason (10.4%), while 6.2% attributed non-usage to not being able to breathe well. It may be inconvenient to use a facemask, which may influence the nonuse or improper use, but it is pertinent to realize how its benefits outweigh the risks. However, successful protection requires masking with careful execution and high compliance, which is difficult to achieve, especially for non-HCWs. On the negative, poor mask use may increase COVID-19 transmission through indirect contact routes, with the mask acting as a fomite (Joseph, B *et al.*, 2020). Low compliance was noted in a study conducted by Elachola H *et al.*, (2020) despite instructions from the Ministry of Health, which also handed facemasks to each of them upon arrival. Overcrowding, tiresome processions, prayers, and other difficult activities that were done during pilgrimage were some of the reasons for this low compliance with facemask use, as indicated in this study. Another study found that high compliance with the usage of facemasks could be attributed to the fact that it was a government order implemented by task-force agents on major roadways, marketplaces, and

motor parks (Elachola H *et al.*, 2014). In order to ensure the effectiveness of masks in COVID-19 control, it is critical to monitor both compliance and user practices.

#### **5.6 General Factors that Inhibit the Use of Facemasks**

This study found that 10.8% attributed the nonuse of a facemask to not being able to afford it. In addition, 35.8% attributed nonuse to shortness of breath and 26.9% attributed nonuse to the fact that it affects their communication. This finding is consistent with findings from other studies, which show that the main reasons for not wearing a facemask include difficulties breathing (25.8%), communicating (23.1%), and discomfort when wearing it (22.3%) (Benjamin A *et al.*, 2021). In the use of a facemask, Edet, CK *et al.*, (2020) cited difficulties breathing, discomfort, and unsightly appearance as reasons of concern. Cotrin P *et al.*, (2020) made a similar observation; 99.1% of the participants in their study reported wearing a facemask during the pandemic, 34.2% because it was required, and 65.8% would continue to wear it even if it was not required. Reasons for poor compliance among some participants included discomfort, suffocation, and communication interference (Cotrin P *et al.*, 2020).

#### **5.7 General Factors that Promote the Use of Facemask**

In terms of the major factor that promoted the use of facemask, this study found out that 46.5% was because it prevents the spread of covid-19, (44.6%) believed that using a facemask prevents others from getting covid-19, and another factor was due to air pollution. Interestingly, 27.3% used a facemask because they didn't want to be sent back by the task force. It was discovered that, despite having a clear understanding of the role of a facemask in the prevention of COVID-19 as well as other preventive measures, 36.4% of the participants in a study conducted by Afiadigwe *et al.*, utilized it because it was mandatory (Afiadigwe EE *et al.*, 2021). However, according to modelling study by Ngonghala *et al.*, the COVID-19 pandemic can be stopped if 80% of the population wears a surgical mask (Ngonghala CN *et al.*, 2020). This indicates that if the disease's current trending wave is to be avoided in our climate, a concerted effort, public education, and enforcement of compliance are required. COVID-19 is primarily transmitted through the air, according to new evidence, and face mask use in public is strongly encouraged to prevent inter-human transmission (Zhang R *et al.*, 2020).

#### **5.8 Association between Periods and Use of Facemasks**

Although the pandemic situation is not as deadly as it was at the onset, the majority of respondents from the study, used a facemask in the morning rather than in the afternoon periods. There was no significant association ( $p>0.05$ ). Between the periods

in which the study was carried out and the use of facemask. This is in contrast with a study conducted by Chukwuocha, UM *et al.*, (2021) who observed more facemask usage in the morning (52.0%) and reduced usage in the evening (21.2%), recording a statistically significant association between period and facemask usage ( $p < 0.001$ ). The reason for higher usage in the morning could be because the taskforce members implementing compliance with usage are known to be more effective during this period.

### 5.9 Association between Facemask Usage and Socio-Demographic Characteristics of Respondents

Despite the high prevalence of facemask usage among our population, we found that there was no significant association between facemask usage and socio-demographic characteristics of Respondents. There was no association between facemask usage and gender in our study which is in contrast with a study in Saudi Arabia and in south Asian countries where there was higher usage amongst females than males (Abid K *et al.*, 2020) Rahimi Z *et al.*, 2021). This contrast may be a result of differences in cultural orientation, particularly among females in the respective parts of the world.

### 5.10 Willingness to Use Facemask

A large number of respondents with tertiary education (78.8%) agreed to the use of face masks when revisiting UCH when compared with just 17.7% with secondary education who agreed to the same. There was a statistical association between willingness to use and educational status. ( $p < 0.05$ ). Also according to Ioannou GN *et al.*, (2021), 64% of its respondents were willing to wear their facemasks when in public (Bish A *et al.*, 2010). However, there was also a statistical association between willingness to use, age and purpose of visit.

### 5.11 Association between Socio-Demographic Characteristics and the Willingness to Use a Mask

The findings from this study also showed a statistical association. ( $p < 0.05$ ) between willingness to use a face mask when revisiting UCH and educational status, age and the purpose of visit. . Chukwuocha, *et al.*, also indicated that age was significantly associated with facemask usage ( $p < 0.001$ ), as more adolescents (47.8%) used facemasks, compared to the elderly (46.8%) and the children (20.5%) (Chukwuocha UM *et al.*, 2021). Education had a favourable impact on the willingness to use when revisiting as a large percentage of the respondents indicated to always use a facemask although more proportions who indicated to never use wherefrom the tertiary category 7(77.8) as against the other categories. A large proportion of respondents (staff) indicated a willingness to always use a facemask when revisiting UCH while few (Adhoc/patients) indicated never to use a facemask.

For instance, (Bish A *et al.*, 2010) studied the impact of demographic determinants on public willingness to wear face masks and found that public willingness was

significantly influenced by age and gender as older people and females exhibited more protective behavior.

### 5.12 Adherence to Facemask usage

Chukwuocha UM *et al.*, (2021) reported a higher adherence to face mask usage in the morning (48.3%) compared to usage in the afternoon and evening, stating it may be due to the atmospheric conditions which are favourable in the mornings. As compared to this study the level of adherence can also be associated with the presence of the task force on the premises.

### Limitation of Study

The major limitation of this study was that individuals in their vehicles were not captured as modalities to administer questionnaires were hampered as the process could not be executed while in motion. Some individuals refused to participate in the study because they were in a hurry and did not have time to spare. This study was unable to incorporate qualitative methods of research such as in-depth interviews and focus group discussion although such an approach would have broadened our findings and helped in enriching our research into this study. The data obtained from this study might not represent the general compliance to the use of facemask outside UCH premises.

## CONCLUSION

This study was conducted to assess the current state of compliance to facemask usage within the university College Hospital premises as the facemask amidst other preventive measures minimizes the risk of transmission of Covid-19. This present study revealed that the use of face-mask among commuters in University College Hospital was very low. The low usage was attributed to non-enforcement by the COVID-19 task force set up by the hospital to oversee compliance towards use. In addition to this, lack of willingness towards use and perceived health risk as a result of usage was also attributed as factors that hindered use.

## RECOMMENDATION

More enlightenment is needed on the use of facemasks among the Nigerian population.

More specifically, the hospital management and its policy board should further create policies that will ensure close monitoring and enforcement of the preventive measures. Systems should also be put in place to access the effectiveness of the task force from time to time to ensure accurate service delivery, the task force members should also be well-remunerated as the task was observed to be demanding and can be tedious given the enormous size of the hospital and people frequenting it. The hospital management should also carry out periodic training of the task force members on

methods and approaches to effectively carry out their assigned duties.

The Hospital information centre located at the fore entrance of the hospital can also be utilized to create awareness as it is the first point of contact for individuals and patients visiting the hospitals, IEC materials and other methods of behavioural change communication should be provided by the management to the information centre, to be made available to everyone visiting the centre.

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