International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Knowledge, Attitude, And Practice Regarding Use of Face Mask Among Health Care Workers as a Measure of Covid-19 Infection Prevention in Federal Medical Centre, Asaba, Delta State Nigeria

Ezunu Ngozi Esther[1], Ezunu Emmanuel Okechukwu[2], Agbele Theresa[3], Okwudishu Marian Ngozi[4], Ojimba Anastacia Okwudili[5], Aigbokhaode Adesuwa Queen[6], Osiatuma Victor Azubuike[7], Onyia Nnenna Evert[8], Ogbutor Udoji Godsday[9], Ofili Antoinette Ngozi[10]

[1,3,4,6,8] Department of Nursing, Federal Medical Centre, Asaba
[2] Department of Internal Medicine, Federal Medical Centre, Asaba
[5,6,10] Department of Public Health, Federal Medical Centre, Asaba
[7] Department of Radiology, Federal Medical Centre, Asaba
[9] Department of Physiotherapy, Federal Medical Centre, Asaba

ABSTRACT

Introduction: Effective use of Face mask is very important to protect healthcare workers (HCWs) against respiratory hazards including COVID-19.Several countries are presently using face masks in their infection control plans, besides, incorrect use and disposal may actually increase the rate of transmission. The purpose of this study was to investigate the knowledge, attitude, and practices of healthcare workers (HCWs) regarding the use of face mask as a measure to COVID-19 infection prevention.

Materials and Methods: This survey was conducted by interviewing 345 HCWs using a questionnaire consisting of the demographic characteristics, questions regarding the knowledge, attitude, and practices of use of face mask. Each correct answer was scored 1 and each incorrect answer scored 0. The total number of questions were 25; 10 for Knowledge, 8 for Practice and 7 for Attitude of heath care workers on the use of face mask. The final aggregate score was calculated and then labeled according to the percentage of correct responses as good >50% and poor < 50% for Knowledge, Practice and Attitude of health care workers on use of face mask. Data were gathered, analyzed using SPSS software version 25.

Results: A total of 345 participants with a mean age of 36.0 years (108 males and 237 females) were included in the study. The Health care workers were good in Knowledge 324 (93.9%), attitude 250 (72.5%), and practice 282(81.7%) regarding use of face mask. However clinical HCW had good knowledge(X^2 = 13.84, P value = 0.001, 95% CI= 0.08-0.51) and attitude(X^2= 13.80, p value = 0.0001, 95% CI=0.21-0.6) of use of face mask than Non Clinical HCW when compared with their practice(X^2=1.10, p value = 0.30, 95 % CI=0.40-1.35)

Conclusions: Knowledge, attitude of HCWs regarding the use of face masks were found to be adequate. but moderate-to-poor level of practice regarding the use of face mask. HCWs and general public to create awareness regarding the proper use of face mask by utilizing all social media. Provision of user friendly mask by government to the hospitals and at affordable rate to the public in order to improve their level of practice in wearing the masks.

KEY WORDS: Attitude, Knowledge, Practice- use-face mask-HCWs-Infection Prevention.

INTRODUCTION

Coronavirus disease (COVID-19) is defined as an illness caused by a new novel coronavirus recently named severe acute respiratory syndrome coronavirus 2(SARS-COV 2; formerly known as 2019-nCOV)[1]. It was reported to the World Health Organization on December 31, 2019(1) And on January 30, 2020, it was declared a Public Health Emergency of international concern (PHEIC)[2]

The virus is transmitted through direct contact with a respiratory droplet from humans or aerosol of an infected person (generated through coughing and sneezing) and touching of surfaces that have been contaminated with the virus. The COVID-19 virus can survive on surfaces contaminated with the virus but simple disinfectant can destroy it[3]. A pooled analysis of 181 confirmed cases of COVID-19 outside Wuhan, China, found that the mean incubation period to be 5.1 days and that 97.5% of individuals who

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

developed symptoms did so within 11.5 days of infection[4]. Symptoms may develop 2 days to 2 weeks following exposure to the virus[5] and may include fever, cough, and shortness of breath. In more severe cases, the infection can cause pneumonia and breathing difficulties. More rarely the disease can be fatal[5]. Most people infected with coronavirus will experience mild to moderate respiratory illness and recover without requiring special treatment, older people and those with an underlying medical problem like cardiovascular disease, diabetic Mellitus, hypertension, chronic respiratory disease, and cancer are more likely to develop serious illness[6]

Prevention of COVID-19 is by taking care of your health and protecting others by doing the following; wash your hand frequently with an alcohol-based hand rub (ABHR) or wash with soap and running water. Maintenance of social distancing by at least 1.5-2 meters and avoid touching one's eyes, nose, and mouth. Practice of respiratory hygiene is highly encouraged with avoidance of hand shaking. Don't share personal items, wash fresh groceries, clean and disinfect surfaces. The wearing of face mask is recommended in conjunction with the other measures highlighted above for adequate prevention of COVID-19 infection[7,8].

According to WHO wearing a medical mask is one of the preventive measures that can limit the spread of respiratory viral diseases including COVID-19[9]. The risk of getting severe COVID-19 is higher in health care workers (HCWs) who are in close contact with confirmed COVID-19 cases. The latest figures show thousands of HCWs getting infected with a large percentage of them dying[9] .In a study carried out in Hong kong on the use of face masks among patients and their caregivers. The study identified a knowledge gap in the correct use of face masks among outpatients and their caregivers, their attitude and practice regarding the use of face masks were generally positives by improving knowledge about the correct use of face masks. However, the use of masks alone is not sufficient to prevent the novel virus but has to be combined with the washing of hands. Protective masks like the N95 are designed to prevent virus particles from flowing in and out of the mask. Due to current shortages, N95 masks should be reserved for COVID-19 health care workers only[9].

There are different types and shapes. In this document medical masks are defined as surgical or procedure masks that are flat or pleated (some are shaped like cups); they are affixed to the head with straps[10]. They are tested according to a set of standardized test methods (ASTM F2100, EN 14683, or equivalent) that aim to balance high filtration, adequate breath ability, and optionally, fluid penetration resistance[10]. Other measures should also be adopted, with maximum compliance with hand hygiene and other Infection Prevention Techniques as a measures to prevent human-to-human transmission of COVID-19. However, the use of medical masks in the community may create a false sense of security, with neglect of other important measures, such as hand hygiene practices, physical distancing, and also touching the face, the eyes under the masks.

A face mask structure includes an outer protective layer prepared from a water-repellent non-woven fabric; an inner protective layer prepared from a hydrophilic nonwoven fabric; a filter layer prepared from a static high-density fiber material for filtering microbes and dust powder. This is sandwiched between the outer and inner protective layers[11]. It is a compound layer treated with a multiple functionalize carboxylic acid derivative that is a product from a chemical reaction between a cyclodextrin complex and a multiple functionalize carboxylic acid. The cyclodextrin complex contains essential oil, antibiotic agent and mosquito repellent agent[11]. In resource-limited setting cloth masks cannot block or filter the SARS-CoV-2 virus because it can easily flow through every common material people have at home[12]. Nigeria Centre for disease Control recommends wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain especially in areas of significant community transmission[12]. World Health Organization also advises the use of simple cloth face coverings to slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others[13]. Cloth face coverings fashioned from household items or made at home from common materials at low cost can be used as an additional, voluntary public health measure. Cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or is unconscious, incapacitated, or otherwise unable to remove the mask without assistance[13]. However, a homemade mask or clothing is still better than none at all. If made correctly, a homemade mask can reduce the transmission of the virus from the wearer to others by impeding large droplets and spray produced by a cough or sneeze. It can also reduce the transmission of the virus from others to the wearer[13]. A new report published in the journal Lancet found the virus lasted on the outside of a surgical mask for 7 days[14]. Given their findings, one of the researchers conducting the study advised people not to touch the outside of the face masks, which could contaminate the hands. Moreover, the correct use of these masks is particularly important especially during this time when its use for preventive[14]. The WHO states that incorrect use and disposal of this mask may increase the rate of transmission. If you wear a mask, then you must know how to use it and discard it properly[14]. Before putting on a mask, clean hands with alcohol-based hand

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

rub or soap and running water. Cover mouth and nose with mask and make sure there are no gaps between your face and the mask. Avoid touching the mask while using it; if you do, clean your hands with alcohol-based hand rub or soap and running water[14]. Replace the mask with a new one as soon as it is damp and do not re-use single-use masks. To remove the mask: remove it from behind (do not touch the front of the mask); discard immediately in a closed bin; clean hands with alcohol-based hand rub or soap and running water[14].

In order to minimize risk, HCWs are required to follow accepted infection control practices. In resource-limited settings[15], where the incidence of infectious disease is high and the environmental conditions of hospitals are often poor, hospitals may rely heavily on a face mask to protect medical staff against COVID-19 and to prevent cross-contamination among patients and HCWs[15]. The use of a face mask among HCWs is strongly recommended by the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC)[15] as a standard for transmission-based precaution. . There is evidence that the HCWs have inadequate knowledge and poor practice regarding the use of surgical mask[16]. The purpose of this study was to investigate the knowledge, attitude, and practices of HCWs in wearing a face mask particularly a standard surgical face mask as a measure of COVID-19 infection prevention.

MATERIALS & METHODS

We conducted a descriptive cross-sectional study of adult Health care workers in Federal Medical Centre[17], Asaba.in September 2020 for one month. The various Health Care Workers; doctors, nurses, pharmacists, physiotherapists, laboratory scientists, radiolographers and health attendants were grouped into two for the purpose of the study. Those who worked directly with the patients in the wards. They had responsibilities related to diagnosis and treatment. They were considered`` Clinical Health Care workers" This represented the Doctors and the Nurses[18]. Those who did not work directly with the patients in the ward and had no responsibilities relating to diagnosis and treatment were considered ` Non-clinical health Care Workers". This represented others[18]. The following were included in the study;

1. Those who have been in the employment of Federal Medical Centre for not less than 6 (six) months.
2. Those who were not in any way incapacitated.
3. Those who were willing to dispense information.
4. Those who gave consent and their confidentiality maintained. Those who did not give consent were excluded from the study.

The sample size for the study was determined by using the formula for simple proportions[19].

$$[n = \frac{Z^2 pq}{d^2}]^{19}$$

n = the desired sample size

Z = the standard normal deviate usually set at 1.96 (or more simply at 2), this corresponds to the 95 percent confidence level.

p = the proportion in the target population estimated to have particular characteristics. So 53% of the respondents had good knowledge (0.53) will be used[20].

q = 1.0-P = 0.47

d = Degree of accuracy desired, usually set at 0.05

$$N = \frac{1.96^2 (0.53)(0.47)}{0.05^2}$$

$$= \frac{3.8416 \times 0.53 \times 0.47}{0.0025} = 382.77 = 383$$

10% non-response=38

Or 383-38=345.

Total= 345 which was the sample size

Systematic random sampling[21] was used for each of the work groups. The sampling interval was derived using the formula below: Sample interval = Total number of health workers/Sample size. From the total list of health care workers in the different categories, a sampling ratio was calculated for each category giving an Nth number of 3,

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

n=345 sample size
N=902 Total number of health care workers
Sampling fraction
345/902
N= 0.3825
Doctors 283x 0.3825 =108.2474 approximate 108
Nurses=456x 0.3825=174.42 ω 175
Pharmacist 52x 0.3825=19.89 Ω 20
Physiotherapist 8x 0.3825=3.06 Ω 3
Radiographers 9x 0.3825=3.4425 Ω3
Lab science 44x 0.3825=16.83Ω 17
Health attendant=50x 0.3825=19.125 Ω19

1. Doctors – 283/108=3
2. Nurses-456/175=3
3. Pharmacist-52/20=3
4. Physiotherapist-8/3=3
5. Radiographers 9/3=3
6. Lab scientist 44/17=3
7. Health attendant 50/19=3

Therefore every 3rd health care worker in each category was recruited for the study until the total number was gotten.

DATA COLLECTION

The study was conducted by interview using a semi-structured questionnaire[20]. Data was gathered from 345 health professionals who worked at the Federal Medical Centre, Asaba, Nigeria and was analyzed using SPSS version 25, frequencies percentages, chi-square, and p values were also computed. The Hospital had earlier set up an Infection, Prevention Committee, Which had one-week training on how to uphold the protocol on infection, prevention in January 2020. These training were stepped down to all the departments in the hospital in February 2020 for one month. The committee also supervised that there were face masks in the wards and recommended places in the hospital where such materials were placed for easy access to the Hospital Community. Six months later we decided to look at the knowledge, attitude and practice regarding use of face mask by Healthcare workers in our Hospital. Before the inception of the study, the nature and purpose of the study were explained to each respondent, and informed consent was obtained. The duration of the study was for one month (September 2020)

For the convenience of analyses, the total number of questions to asses knowledge was 10 and each correct response from respondents scored 1 and each incorrect response was zero (0) score Total scores from each respondents were converted to percentage score and a score greater than 50% was taken as good knowledge, while a score of less than 50% was termed poor knowledge. The total number of questions for attitude were 7 (seven) and this was converted to percentage score, a score of 50% and above will be termed good attitude and a score of less than 50% will be poor attitude. Practice has a total of 8 (eight) questions which were converted to percentage score, a score of 50% above was termed good practice and a score of less than 50% represented poor practice.

METHOD OF DATA ANALYSIS

Data were screened for completeness, entered, and analyzed using Statistical Package for Social Sciences (SPSS V. 20.0). The univariate analysis was carried out as quantitative variables using frequency, percentages and mean value (standard deviation). The Bivariate analysis was also carried out between the sociodemographic variables and Knowledge, attitude and practice of use of face. Association was tested using the chi-square and by calculating the odd ratio with a 95% confidence interval. The level of significance was set at $P < 0.05$.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

ETHICAL ISSUES/CONSIDERATION

Ethical permission to conduct this research was gotten from the Research and Ethics Committee and the due processes in researching the hospital were maintained. The code of ethics aimed at protecting the rights of individuals used as subjects of the research was upheld. No harm or discomfort to the participants during the questionnaire distribution was allowed. Privacy and confidentiality were endorsed. Financial responsibilities were solely the researcher`s obligation.

RESULTS.

Characteristics of the study subjects

Table 1: Socio-Demographic Characteristics of Healthcare workers

Sociodemographic information	Cases (n=247)*	(%)
Age(in Years)		
Mean	36.0	
Range	21-59 years	
Group		
< 30 years	75	21.7
> 30years	270	78.3
Gender		
Male	108	31.3
Female	237	68.7
Marital Status		
Single	115	33.3
Married	230	66.7
Educational Level		
Poorly educated	12	3.5
Tertiary educated	333	96.5
Profession		
Clinical Health care workers	274	79.4
Non-Clinical Health care workers	71	20.6
Religion		
Christianity	340	98.6
Muslim	5	1.4
Years of experience		
0-10 years	222	64.3
> 10 years	123	35.7

We enrolled 345 health workers in the study, about 108 (31.3%) were men while 237 (68.7%) were female.

Their ages ranged from 21-59 years with a mean of 36.0 years. Those who were <30 years were 75 (21.7%) in number, those who were >30 years were 270(78.3%) in number. One hundred and fifteen (33.3%) were singles, 230(66.7%) were married. On the educational level, 12(3.5%) were poorly educated, while 333(96.5%) had tertiary education. About 71 (20.6%) were Non Clinical Health care workers, while 274(79.4%) represented the Clinical Health care workers. Majority 340(98.6%) were Christians and 5(1.4%) were Muslims. Many with 0-10years experience were 222 (64.3%), while those who had more than10years experience were 123 (35.7%).

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Table 2. Knowledge of use of Face mask among the respondents.

KNOWLEDGE QUESTIONS	Response	N (%)
Which is the correct way of using a surgical face mask?	White outside	102(29.6%)
	White inside(correct)	234(70.4%)
How many layers are there in a surgical mask?	2 layers	139(40.3%)
	3layers(correct)	188(54.5%)
	4 layers	18(5.2%)
Can a surgical mask protect you from Covid-19?	Yes(correct)	226(65.5%)
	No	101(29.3%)
	Maybe	18(5.2%)
Which layer act as a filter media barrier?	First layer	91(26.4%)
	Middle layer(correct)	220(63.8%)
	Last layer	34(9.8%)
Which type of mask actually protect more against Covid-19?	N95%(correct)	262(75.9%)
	N97%	72(20.9%)
	N91%	11(3.2%)
How long can you wear a surgical face mask?	4 hrs(correct)	161(46.7%)
	8 hrs	112(32.5%)
	2hrs 72(20.8%)	72(20.8%)
For proper wearing to which extent should it cover?	Nose, Mouth, Chin(correct)	245(73.6%)
	Nose and Mouth	90(26.1%)
	Nose	1(0.3%)
What is the purpose of the metal stripe on a surgical mask?	Fit unto the nose(correct)	318(92.2%)
	Fit unto the chin	24(7%)
	For cosmetic	3(0.9%)
Is the clothe mask effective as the regular facial mask?	No(correct)	319(92.5%)
	Yes	26(7.5%)
How long can you use an N-95 face mask?	2 days(correct)	139(40.3%)
	14 days	138(40.0%)
	30 days	68(19.7%)

Table 3. Attitude of use of Face mask among the respondents.

ATTITUDE QUESTIONS	Response	N (%)
Wearing face mask makes me confident to attend to a patient?	Agree(correct)	284(82.3%)
	Disagree	29(8.4%)
	Indifferent	32 (9.3%)
Do you feel it infringes on your freedom?	Agree	117(33.9%)
	Disagree(correct)	170(49.3%)
	Indifferent	58 (16.8%)
Do you feel that wearing a mask show vulnerability to covid-19?	Agree	62(18.0%)
	Disagree(correct)	257(74.5%)
	Indifferent	26 (7.5%)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Do you think that wearing face mask is necessary in this time of covid-19 pandemic?	Agree(correct) Disagree Indifferent	322(93.3%) 9.0(2.6%) 14 (4.1%)
Do you feel that the use of face mask is discomforting?	Yes(correct) Disagree Indifferent	255(73.9%) 48(13.9%) 42 (12.2%)
Do you feel that wearing face mask stigmatizes?	Agree Disagree(correct) Indifferent	41(11.8%) 271(78.6%) 33(9.6%)
Do you feel confident to wear a mask outside the hospital?	Agree(correct) Disagree Indifferent	256(74.2%) 44(12.8%) 45(13.0%)

Table 4. Practice of use of Face mask among the respondents.

PRACTICE QUESTIONS	Response	N (%)
During clinic if there is a need to talk to a patient, will you remove the mask?	No(correct) Yes	328(95.1%) 17(4.9%)
Do you store the used mask in a bag for later use?	No(correct) Yes sometimes	265(76.8%) 64(18.6%) 16 (4.6%)
Do you wear a mask in public to protect yourself against Covid-19?	Yes(correct) No sometimes	298(86.4%) 37(10.7%) 10 (2.9%)
Do you wear a mask in the hospital premises to protect yourself against covid-19?	Yes(correct) No sometimes	312(90.4%) 27(7.8%) 6(1.7%)
In which colour-coded bag do you dispose your mask?	Yellow(correct) Red Black	138(40.0%) 137(39.7%) 70 (20.3%)
Do you often wash your hand before and after removing your facemask?	Yes(correct) No sometimes	215(62.5%) 100(29.0%) 30 (8.7%)
Do you usually touch the outer covering of your mask while disposing it	No(correct) Yes sometimes	280(81.2%) 40(11.6%) 25(7.2%)
Do you perform a hand hygiene after touching the outer surface of a facemask?	Yes(correct) No 85(24.6%) sometimes	232(67.2%) 85(24.6%) 28(8.2%)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Table 5. Aggregate Score of Health Care Workers on Knowledge, Attitude and Practice of use of Face Mask.

Knowledge	Frequency	Percent (%)
Good Knowledge	324	93.9
Poor Knowledge	21	6.1
Good Attitude	250	72.5
Poor Attitude	95	27.5
Good Practice	282	81.7
Poor Practice	63	18.3

The majority of study participants had good knowledge (93.9%), attitude (72.5%) and practice (81.7%) of Face Mask, table5.

Table 6. Aggregate Knowledge, attitude and practice (%) group of Clinical HCW and Non Clinical Health Care Workers (HCW) on use of Face Mask

	Clinical HCW(%)	Non Clinical HCW(%)	X^2	P value	95%(CI)
Good Knowledge	264(96.4)	60(84.5)	**13.84**	**0.001**	**0.08-0.51**
Poor Knowledge	10(3.6)	11(15.5)			
Good Attitude	211(77.0))	39(54.9)	**13.80**	**0.0001**	**0.21-0.63**
Poor Attitude	63(23.0)	32(45.1)			
Good Practice	227(82.8)	55(77.5)	**1.10**	**0.30**	**0.40-1.35**
Poor practice	47(17.2)	16(22.5)			

X^2= Chi-square, CI= Confidence Interval, P value set at < 0.05

The majority of clinical HCW had good knowledge(X^2 = 13.84, P value = 0.001, 95% CI= 0.08-0.51) and attitude(X^2= 13.80, p value = 0.0001, 95% CI=0.21-0.6) of use of face mask than Non Clinical HCW when compared with their practice(X^2=1.10, p value = 0.30, 95 % CI=0.40-1.35)

DISCUSSION

Face masks are used as a protective barrier to reduce the risk of transmission of respiratory infections between patients, HCWs, and the environment[22]. However, in order for face masks to provide effective protection, the HCWs must have a good knowledge of wearing and disposing it.

This study examined the knowledge, attitude and practice of use of face mask among Health care workers in a Federal Medical Centre, Asaba, Nigeria. Results showed that the Majority of Healthcare workers were female (68.7%) of above 30 years of age (78.3%) and mostly married (66.7%). The study also found that most of the staff attended tertiary (96.5%) education and hence were trainable. We observed that many had good knowledge (93.9%), attitude (72.5%) and practice (81.7%) of use of face mask in the survey, probably due to the training sessions organized by the Infectious disease prevention committees six months earlier before the study[23]. This good knowledge will help the health professionals to adhere to needed infection and disease control measures.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Majority(90.4%) agree to wear face mask in the Hospital premises to protect oneself against COVID-19, however lesser number (76.8%) do not store the mask in the bag, while poor disposal by few(40.0%) of Healthcare workers was observed in the study . Similarly, when it was asked from participants in another survey[20], 44.9% disposed it in the yellow-coded bag for disposal of face mask; this shows poor knowledge of HCWs regarding the safe disposal of biomedical waste. Many respondents feel confident to wear a mask outside the Hospital (74.2%) or to attend to patients in the Hospital (82.3%). But, however some feels wearing a face mask is very discomforting (73.9%). This is a conflicting attitude towards the use of face mask and may have impacted negatively to the practice of use of face mask(X^2=1.10, p value = 0.30, 95 % CI=0.40-1.35).

On the correct maximum duration of usage (40.3%) for 2 days and putting on of face mask (46.7%) for 4 hours was inadequate as shown in this study despite the overall excellent knowledge. This has also impacted poorly to the practice of use of face mask by health care workers, cost of face masks and unavailability of face masks were also found to have a prohibiting effect regarding its use[24].

Also some were of the opinion that cloth masks are not as effective (92.5%) as N95 and another study[20] also highlighted similar findings concluding that cloth mask, re-use, and extended use of mask makes it ineffective. Sometimes HCWs are forced to use cloth masks due to the increasing shortage of surgical masks in developing countries of the world. We observed that majority of healthcare workers(76.8%) stored the used mask in the bag for re-use, another study[20] encouraged them wearing the same mask without removing it between patient encounters and disposing it properly at the end of the day is better than re-using it. Still if re-using it due to shortage, it is better to fold the mask in such a way that the outer contaminated surface is held inward followed by storing it in a clean sealable paper bag or container[25]. Not in a personal bag as seen in our study.

We observed from our study that N95% (75.9%) actually protect more against COVID-19, however there is not enough evidence to prove that wearing a surgical mask completely protects every person from COVID-19[20]. The WHO currently recommended that only HCWs and people who are ill and those who are caring for the ill need to wear a mask to protect themselves from COVID-19[20]. However, in low-income countries , where the incidence of infectious disease is high and the hospital environmental conditions are often poor, our HCWs rely almost entirely on a face mask to limit the spread of COVID-19[26]. The WHO established a color-coded bin system for proper disposal of biomedical waste in hospitals[27]. However, when it was asked from our participants, only 44.9% disposed it in the yellow-coded bag for disposal ; this shows poor knowledge of HCWs regarding the safe disposal of biomedical waste.

We discovered that clinical HCWs were more knowledgeable and had good attitude towards use of face mask than non-clinical HCW, however their practice were not in any way better (table 5). This may not be unconnected with the discomfort associated with wearing of face masks, other factors were poor disposal practices, cost and unavailability of mask when needed.

We noted that our study design was limited to a single governmental hospital. We suggest a further Multi-centered studies to be carried out in order to evaluate these findings in both private and government hospitals before the results could be generalized.

CONCLUSION

Knowledge, attitude, and practice of HCWs regarding the use of surgical face masks were found to be adequate. However Clinical Health Care worker`s Knowledge and attitude on use of face mask were better than Non clinical Health care workers. There is need to improve Knowledge on proper disposal of face mask to prevent spread of infection. Effort should be made to produce masks that are users friendly/comforting. Government as a priority made available enough masks in the Hospital for Health care workers who are on the frontline, as this will improve the practice of wearing face mask by Health care workers as means of infection prevention. HCWs and general public awareness campaigns regarding the proper use of face mask in periods of pandemics by utilizing all social media available resources would also be helpful in fighting this disease.

REFERENCES

1. David Cennimo: Coronavirus Disease;emedicine.medscape.com/article/2500114, 23rd April 2020 COVID-19,
2. Public Health Emergency of international concern (PHEIC)Global research and innovation forum: towards a research road map
3. Zhou F, Yu T, Du R, et al.: Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet (London, England). 2020, 395:1054-1062. 10.1016/S0140-6736(20)30566-3

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

4. Coronavirus disease (COVID-19): What parents should know, How to protect yourself and your children; https://www.unicef.org/northmacedonia/our-stories unicef.org.6th march 2020
5. CDC.2019 Novel Corona2020irus, Wuhan, China.CDC.available at https://www.cdcgov/coronavirus/2019.ncov/about/index.html.january 27,2020
6. Lauer S A, Grantz K H, Jones F K, Zheng Q, Meredith, H R, et al.The incubation Period of coronavirus disease 2019. (COVID-19) From Publicly Reported confirmed cases: Estimation and Application.Ann Intern Med. 2020 march.
7. HSW: Use of face masks in a primary care outpatient setting in Hong Kong: knowledge, attitudes, and practices. Public Health. 2012, 126:1001-1006. 10.1016/j.puhe.2012.09.010
8. Noreen Iftikhar Covid-19 prevention, 12 tips, and strategies Health line march 23 2020 Healthline.com/health/coronavirus/prevention#march 23,2020.
9. World Health Organization. Advice on the use of the mask in the context of COVID-19, Interim guidance 6th April 2020. Siegel JD, Rhinehart E, Jackson M, Chiarello L: 2007 guideline for isolation precautions: preventing transmission of infectious agents in health care settings.
10. Am J Infect Control. 2007, 35:65-164. 10.1016/j.ajic.2007.10.007
11. Advice on the use of masks in the community, during home care and in healthcare settings in the context of the novel coronavirus ((nCoV-2019outbreak: interim guidance, 29 J anuary 2020. (2020). Accessed: February 23, 2020: https://apps.who.int/iris/handle/10665/330987
12. Abdollah Dargahi, Farhad Jeddi et al:Evaluation of masks Internal and External Structure surfaces used by Health Care workers and patients in Coronavirus-2 (SARS-CO-V2);Environmental Research, 2021 May : 196
13. NCDC: Advisory on Use of Face Mask, by members of Public Without Respiratory Symptoms; https://covid19.ncdc.gov.ng/media/files/UseOfMasks_lBdgzHH.pdf
14. World Health Organization: Coronavirus Disease (COVID-19) advice for the public; when and how to use face mask, https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks.
15. Derek K Aki, Elie A Akl et al: Physical distancing, face mask and eye protection to prevent person-to-person transmission of SARS-Co-V2; a systematic review and meta-analysis; THE LANCET, June,27,2020 vol. 395, Issue 10242, P1973-1987.
16. WHO: Advice on the use of face masks in the community, during home care and in the Health care setting in the context of the novel coronavirus (2019-nCoV) outbreak: Interim guidance; 29 January 2020. Accessed. February 23, 2020.
17. Kelkar US, Gogate B, Kurpad S, Gogate P, Deshpande M: How effective are face masks in operation theatre? A time frame analysis and recommendations, *Int J Infect Control.* 2013;9;https://www.ijic.info/article/view/10788 .
18. Odenigbo, O.O. (2015) Pattern of Medical Admissions at the Federal Medical Centre, Asaba—A Two Year Review; https://pubmed.ncbi.nlm.nih.gov/20329679/.
19. Andrew C. S, Marley H: Difference between Clinical and Non-clinical Jobs; Very Well Health, June 2020; https://www.verywellhealth.com/clinical-versus-non-clinical-jobs-1736349.
20. Franklin Chibuacha et al: How to determine the Sample size for Research Study; Geo Poll; April, 2021 https://www.geopoll.com/blog/sample-size-research/.
21. Jagdesh kumar, Muhammad soughat katto et al: Knowledge , attitude and Practice of Health care workers Regarding the use of face mask to limit the spread of Coronavirus disease; Cureus 12(4),2020.
22. Adam Hayes, Somer Anderson: Systematic Sampling, Cooperate accounting, financial analysis, Investopedia, updated May, 2021https://www.investopedia.com/terms/s/systematic-sampling.asp.
23. Honarbakhsh M, Jahangiri M, Ghaem H : Knowledge, Perceptionand practices of Health Care Workers regarding the use of respiratory protection equipment at Iran hospitals ; J Infec. Prev. 2018, 19: 29-36. doi: 10.1177/1757177417724880.
24. Oyitso, M. and Olomukoro, C. (2015) Training and Retraining as a Tool for Promoting Workers Productivity in Nigeria. https://www.research.net.publication.334618539.
25. Muhammad Irfan, Nadeem Akhatar et al: Assessing Public willingness to wear face mask, during the COVID-19, Pandemic : Fresh Insight from the Theory of Planned Behavior ; Int. J. Environ. Res. Public Health 2021, 18, 4577
26. Chughtai AA, Stelzer-Braid S, Rawlinson W, et al: Contamination by respiratory viruses on outer surface of medical masks used by hospital health care workers. BMC Infect. Dis. 2019, 19:491. Accessed April, 20, 2020.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 11 November 2022
DOI: 10.47191/ijcsrr/V5-i11-37, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

27. WHO: Coronavirus disease (COVID-19) advice for the public ; when and how to use masks, (2020). Accessed; February 23, 2020: last updated December 2021. https:// www.who.int/ emergencies/ diseases/ novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks.
28. Chartier Y, Emmanuel J, Pieper U, et al : Safe Management of Wastes from Health-care Activities ; World Health Organization, Geneva, Switzerland, 2014.

Cite this Article: Ezunu Ngozi Esther, Ezunu Emmanuel Okechukwu, Agbele Theresa, Okwudishu Marian Ngozi, Ojimba Anastacia Okwudili, Aigbokhaode Adesuwa Queen, Osiatuma Victor Azubuike, Onyia Nnenna Evert, Ogbutor Udoji Godsday, Ofili Antoinette Ngozi (2022). Knowledge, Attitude, And Practice Regarding Use of Face Mask Among Health Care Workers as a Measure of Covid-19 Infection Prevention in Federal Medical Centre, Asaba, Delta State Nigeria. International Journal of Current Science Research and Review, 5(11), 4380-4390