

Barriers and Facilitators of Health Care Workers' Adherence to IPC Measures during Covid-19 Pandemic in Gombe LGA, Gombe State, Nigeria: A Qualitative Assessment.

Mohammed A^{1,2}, Abubakar JD^{1,2}, Danimoh MA^{1,2}, Kwami AM³, Bile N⁴,
Oduanze PA⁴

1. Department of Community Medicine, College of Medicine, Gombe State University, Gombe Nigeria.

2. Department of Community Medicine, Federal Teaching Hospital Gombe. Gombe Nigeria.

3. Gombe State Ministry of Health

4. Gombe State Public Health Emergency Operation Centre

Abstract

Background: The COVID-19 pandemic has affected health care systems with Health Care Workers (HCWs) worldwide being at an increased risk of contracting and dying from the disease. Infection Prevention and Control (IPC) measures play a significant role in reducing the incidence and spread of COVID-19 among HCWs. This however depends on the compliance with its use. This study therefore aimed to determine the barriers and facilitators to compliance with IPC measures among HCWs in Gombe State.

Methodology: Focused group discussions were conducted among Doctors, Nurses, lab scientists and CHEWs/CHO in four health facilities in Gombe LGA. These facilities were selected using simple random sampling technique by balloting while the study participants were selected purposively from the selected health care facilities. Data from the audio recordings and notes were collated and transcribed in English language, using inductive approach, coding was done, grouped into categories and analyzed thematically.

Results: All the respondents accepted that IPC measures were capable of protecting them from being infected with COVID 19. The level of compliance with IPC measures varied from 50-80% in primary health facilities while those in secondary health facilities mentioned a compliance rate of 100% as long as the resources were available. The barriers to compliance with IPC measures were unavailability of resources, inadequate Human Resource for Health (HRH), attitude of HCWs and discomfort with the use of PPEs while factors which facilitated compliance with IPC measures were supportive supervision and the fear of being infected with COVID-19.

Conclusion: This study showed that institutional and personal factors influenced adherence to IPC measures among HCWs during the COVID-19 pandemic. It is vital for Governments and health administrators to play their role in ensuring availability of IPC resources and training of HCWs on adherence to IPC measures in order to curb the spread of this pandemic especially among HCWs.

Key words: COVID-19, Health Care Workers, Infection Prevention and Control, Personal Protective Equipment.

Date of Submission: 01-01-2021

Date of Acceptance: 13-01-2021

I. Introduction

The recent pandemic resulting from COVID-19 has significantly affected Public Health systems with negative impact on health care workers who are at the frontline of the battle. The disease is caused by SARS-CoV-2 and is transmitted through droplets or contact, with asymptomatic individuals also implicated in its spread.¹ This makes transmission and spread of infection easier especially in health care settings reiterating the need for adherence to Infection Prevention and Control (IPC) measures at all levels of health care.² Infection Prevention and Control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients and health workers. It emphasizes patient safety and safety of health workers at every stage of interface and encounter.² It entails having guidelines at the facility and facilities for source control, administrative, environmental and engineering control measures. For COVID-19, the IPC measures are similar to that of other Hospital Acquired Infections (HAI), these include: triaging and source control using the screen isolate and notify approach, application of standard precautions on all patient at all times, implementation of additional precautions and implementing administrative control.³

Since the onset of the Pandemic, Health Care Workers (HCWs) worldwide have been trained on COVID-19 IPC measures. In Nigeria, the Nigeria Centre for Disease Control (NCDC) has supported training of

17,436 health workers on IPC measures placing emphasis on adherence.⁴ This is ascribed to the understanding that HCWs are at increased risk of contracting the disease due to their close proximity to patients and clients in the health care setting. Knowledge and adherence of these trained HCWs to IPC measures determine the spread COVID -19 in the health care setting.⁴ By the end of July 2020, the World Health Organization (WHO) estimated that 10% of COVID-19 cases world wide were among HCWs, despite the paucity of data in Africa, up to 5% of infection were among HCWs in 14 countries in this region, with four countries accounting for 10% of these infections.⁴ According to the NCDC, as of June 2020, about 812 HCWs were infected with COVID-19 with some of them loosing their lives.^{4,5} During the second wave, the Nigerian Medical Association (NMA) reported that 20 doctors died from COVID-19 complications within one week in December 2020.⁵ This has resulted in further depleting the already low Human Resource for Health (HRH). Compliance with IPC measures have been recognised as an important cost effective measure to preventing HAIs among HCWs. Studies have shown that factors such as availability of resources, client load, institutional support and discomfort influence adherence to good IPC practices which has the potential to increase the spread of HAI among HCWs and patients.^{6,7,8}

Assessing the facilitators and barriers to IPC practices will provide a platform to introduce measures which will decrease the likelihood of HCWs being infected with COVID-19. It will also allow for availability of a healthier workforce in order to improve outcomes of the disease. This study aims to assess facilitators and barriers to HCWs adherence to IPC measures during COVID-19 Pandemic, it will provide information on the level of compliance, inform decision making and provide targeted interventions in Gombe state in order to reduce the spread of this disease.

II. Material And Methods

Study area- This study was conducted in Gombe state which is located in the North Eastern part of Nigeria. It's 2020 projected population is 3,658,473.⁹ It is a multi-ethnic State with eleven (11) Local Government Areas (LGAs) and one hundred and fourteen (114) wards. Some of the ethnic groups are Fulani, Tangale, Waja, Tera, Jukun and Bolewa. Hausa Language is the inter-ethnic medium of communication.⁹ Presently, the State has 615 Public and Private Health facilities of which 587 offer basic preventive and curative health services. There are 28 referral facilities of which 27 are secondary and 1 tertiary health care facility.⁹

Study design- A descriptive cross-sectional study employing qualitative (FGD) method of data collection.

Study population- Health care workers consisting of doctors, nurses, lab technicians and Community Health Extension Workers (CHEWs).

Study duration- The study period was from 23rd to 25th September 2020.

Sampling technique-

Selection of health care facilities-

A total of four health care facilities were selected from the list of facilities in Gombe LGA. One facility was selected each from the list of 8 Public and 10 Private primary health facilities using simple random sampling technique by balloting. Similarly, one facility was selected from 21 private secondary health facilities in the LGA using simple random sampling technique by balloting while the only secondary health facility in the LGA was included in the study.

Selection of study participants-

With the aid of the IPC focal person in the selected health facilities, ten participants were selected purposively from each of the selected health care facilities for the FGDs.

Procedure methodology

After ethical clearance was sought from Research and ethics committee of the Gombe State Ministry of Health. Permission was obtained from the facility heads and informed consent obtained from study participants. The FGDs were conducted in a quiet environment of the selected facilities. All FGDs were conducted in English language and lasted until saturation was met, an average of 50 minutes. They were conducted by the moderator with the aid of a recorder and a note taker and an FGD guide which was adapted from a similar study in Ethiopia.¹⁰

Statistical analysis

Data from the audio recordings and notes were collated and transcribed in English Language. The field notes were checked for accuracy and completeness. The transcribed data were read severally by two research investigators to understand the context. Using inductive approach, a coding tree was constructed to understand the relationship of ideas and look for links between themes. The codes were grouped into categories and then analyzed thematically.

III. Results

The respondents in this study comprised Doctors, Nurses, Laboratory scientists and community health practitioners. All the respondents accepted that IPC measures were capable of protecting them from being infected with COVID-19. However, the level of compliance with these measures varied and the commonest measures practiced were hand washing, wearing of face mask, properly sterilizing and disinfecting equipment, proper waste disposal and use of PPEs. The HCWs in the Public and Private secondary health facilities stated that there was 100% compliance as long as the resources were available, however those in the primary health facilities stated that the compliance level ranged from 50% to 80%. Some responses were:

"if had it been that we have not been practicing IPC measures, we would have all been infected because with the inflow of patients we don't know who is who" (Nurse, public secondary facility)

"what is making us laugh is none of us is wearing face mask". " Although we do very well with sterilizing and disinfecting all equipment" (Community Practitioner, Public Primary health facility)

"you met us with our masks", "I worked with him for 2 months and the first time I removed it, he said that was the first time that he has seen me without a facemask, I also admitted a patient for two weeks at the word, and had to take my face mask for something and the patient asked where is the doctor, so that's how far we go with compliance". (Doctor, Private secondary facility)

"although you can't get 100 % compliance but we have gone really far with compliance", "we identify our staff by the face mask". (Nurse, Private secondary facility)

BARRIERS TO COMPLIANCE WITH IPC MEASURES

The identified themes on barriers to compliance with IPC measures were management/system factors and personal factors. The sub-themes under these themes were unavailability of resources, inadequate Human Resource for Health, poor attitude of HCWs and discomfort with the use of PPEs.

Availability of resources for IPC

Availability of IPC materials is a major determinant to its use as many respondents across the health facilities complained of non use as a result of scarcity of some PPE materials. Some of the responses were:

"lack of political will, many donor organizations have been donating items, some part of politics will come in because this thing has to be reported back to the management on COVID-19 control, then they will say don't start disbursing these items yet until we call so and so to come and launch it, by the time you are waiting, maybe in lab department PPEs have finished, same in A/E, by this time lag anything can happen, that is why I called it political will". (Lab scientist, Public secondary facility)

"when it is not available we ask the patients to buy it, especially if it is gloves, but we can't ask the patient to buy facemask or hand sanitizer so we buy it ourselves with our own money" (ward Nurse, Public secondary facility)

"I have challenge with the supply of PPE, particularly face mask and gloves, let me site example with my unit, I cant remember when last I was given gloves or face mask to work with, sometimes we will be given a pair or two of gloves to work with for the whole day, so one has to be using sanitizer, that can spread infection from patient to patient or among us HCWs." (Lab scientist, secondary health care facility)

In some facilities, availability of water was a challenge for staff and patients in the ward one of the Community practitioners in the Public primary health facility mentioned that *"the problem is, if you want to wash your hands in cases were there is no water in the tap, it is a challenge"*. However, another respondent stated that a borehole was available but the neighbouring communities used this water with them as the facility was not well secured, thereby decreasing water supply to the health facility.

Attitude of HCWs towards practicing IPC

A few respondents mentioned that the attitude of some HCWs was a barrier to practicing IPC measures especially using PPEs. A Nurse mentioned that *"actually sometimes some HCWs have a nonchalant attitude towards IPC, and its not as if they don't want to practice it but because they don't know what to do and pay less attention and even if they do, they don't exclusively do it, sometimes people see handwashing as cosmetics"* another respondent mentioned that even though HCWs have always used face mask, the constant and continuous use was alien as such restricted its use *"use of face mask is a new thing that came after COVID-19, that is why up till now people are not yet used to it"* (Community Practitioner Public Primary health facility)

Inadequate Human Resource for Health

Some respondents mentioned that the high patient burden and inadequate human resource poses a barrier to adequately practicing IPC measures due to exhaustion. A Nurse in the secondary health facility stated that: *"I can also contribute by saying that inadequate manpower is a problem, because stress management control is also one of the factors that affects us, we are exhausted and overused. For instance, at the government*

level, there has been no employment for the past eight years some people have died, retired, gone to school or voluntarily left the services, yet no employment”.

Comfort

Majority of the respondents also mentioned that some PPEs were very uncomfortable and that hindered their use, some responses were:

“there was a time that we had a COVID-19 suspected case in A/E, I was asked to take blood sample, we had to request for PPE, when I wore the overall, honestly speaking I was not comfortable, just within 10-15 minutes when I removed it my whole cloth was soaked with sweat so that makes me uncomfortable with it” (A/E Nurse, Secondary health facility).

“about face mask, some health workers don't want to use this face mask, it is not comfortable for them, that is why some are not using it”. “there are lot of clients who attend this health facility, so for a health worker to wear a face mask for a long time, it is tiring using this face mask” (Lab technologist, Public primary health facility)

FACILITATORS TO COMPLIANCE WITH IPC MEASURES

The reoccurring themes on facilitators on compliance with COVID-19 IPC measures were supportive supervision and risk perception

Supportive Supervision

Majority of the respondents mentioned that in addition the perceived risk of being infected, the supervision also encouraged the use of PPEs though there were no punitive punishment for those who did not comply with its use. Respondents in the public primary health care facility stated that *“in this pandemic the management provide hand sanitizer, face mask, so if the management come and see you not wearing it she cautions us”*. *“management. supervises us in the labour room to ensure proper sterilization and disinfection of equipment”*. Majority of the other respondents nodded in agreement with these respondents.

Another respondent in the Public secondary facility stated that *“let me sight an example with myself, there was a day I was coming out of the ward without my facemask and I met with the MD and he said “where is your mask”? so I will say that they are watching us”*

When asked if the supervision was a continuous process, almost all the respondents across all the facilities mentioned that it was not.

Risk perception

During the FGD, health care workers across all the health facilities accepted that they were at risk of being infected with COVID- 19, they stated that the risk of becoming infected ranged from 50% to 100% with majority of them stating that they had a 90% risk of becoming infected compared to non-health workers. The reasons they stated were that they were the first contact of patients who present with varying problems that cannot be specifically proven as COVID-19. Some responses include:

“I will say like 80% likely to become infected, like in the A/E in the peak of COVID, most staff will be running away from the patient sometimes they will send the patient to go and come back tomorrow so that when he comes back the staff will have closed”. (Nurse, Public secondary facility)

“because most of the patients coming to the facility may have sign and symptoms of other diseases and the first contact are health care workers, they may likely get infected” (Nurse, Public secondary facility)

“yes I agree with her because when the patient comes we cannot differentiate the signs and symptoms when the consultant is seeing the patient, he can easy contract the disease” (community practitioner, Public secondary facility)

“my thinking is once you come in contact with a patient with COVID-19 and you are not fully protected then you can become infected” (community practitioner, Private primary facility)

A respondent from one of the facilities stated that *“a typical example of what really happened here, we are all aware that we admitted some patients that were positive, 2 patients in one day one in the morning and one in the evening on Thursday, before the result came out 12 of our staff got infected”* (Nurse, Private secondary facility). Majority of the staff agreed with this.

Majority of the respondents mentioned that the fear of becoming infected with COVID-19 made them use PPEs and practice other IPC measures, some responses to what makes them compliant with IPC practices were: *“fear of getting infected with COVID 19”, “fear of death”, “ not only death fear of unknown”, “ it is good to go by the rules”*.

IV. Discussion

The COVID-19 pandemic has resulted to placing more emphasis on IPC measures in the hospital environment, this is in a bid to prevent the spread of the disease especially among health care workers. Although most HCWs are aware of the role these measure play in prevention, this study showed that compliance to these measures varied from 50%-80% across different health facilities, similar to a study in Uganda in which HCWs had 80% with IPC measures especially with the use of PPEs.⁷ A study in Edo state Nigeria showed a slightly higher proportion of HCWs compliance (85.6%),¹¹ The reasons for the findings in this study could be linked to the perceived risk of becoming infected with COVID-19 as mentioned by some respondents, it could also be associated with the training sessions that many health care workers have been exposed to as a result of this pandemic.⁴ Considering the droplet based mode of transmission, high level of spread in health care settings and the significant role asymptomatic individuals play in transmission of COVID-19. It becomes imperative for all health care workers especially during this pandemic to strictly adhere with IPC measures in order to reduce the spread of infection and decrease the mortality especially among HCWs. Institutional and personal factors have been shown to influence adherence to IPC measures in the health care settings,^{6,12,13} although some respondents mentioned that some facilities in this study had adequate resources, inadequate human and material resources was recognised as one of the factors hindering compliance among majority of the respondents. This finding was similar to a study conducted across the North-West and South-West region of Nigeria in which three quarters of them mentioned their willingness to use PPEs if they were made available.⁶ Although, willingness may not be interpreted as compliance and adherence to good IPC practices, availability of these resources at service delivery points plays a significant role in its utilization.¹⁴ Furthermore, respondents in a study in Ethiopia, Uganda and a multinational study across middle and low income countries also stated that availability of PPEs and other materials was a challenge which hindered good IPC practices.^{7,10,15} Though this could have been worsened by the COVID-19 pandemic where there is a high demand leading to shortage of hospital consumables worldwide, the government and hospital management are still responsible for ensuring the safety of HCWs as various strategies have been provided to ensure continuous availability of PPEs during this pandemic.¹⁶ The low Human Resource for Health (HRH) especially in low resource settings increases the workload for HCWs, this could also have a negative influence on compliance to good IPC practices especially when the client load is high.¹⁴ The overall implication of this could increase the likelihood of infection spread and further worsening the already inadequate HCW- patient ratio. Hence, this pandemic should provide opportunity to improve the already existing poor Human Resource for Health in Nigeria.¹⁷

Other barriers to utilization of PPEs in this study were the HCWs attitude and discomfort with the use of some IPC measures such as PPEs. This is consistent with a study in Ethiopia and a systematic review which included 3 studies from Africa where some respondents complained about the discomfort with hand rub, physical discomfort with the use of face masks and other equipment, the enhanced workloads and fatigue from implementing IPC strategies.^{10,8} This may imply that even though facilities are available, personal barriers as such may hinder their use thereby increasing the likelihood of infection to health care workers, patients and patient relatives. Thereby, leading to increased hospital stay, increased direct and indirect expenditure and loss of man work hours. Modification of some of these measures, supportive supervision and training could increase the adherence to good IPC practices.^{4,14} Supportive supervision was one of the facilitators to adherence to good IPC practices in this study, this finding is similar to a study in Uganda and a multinational study which showed that the support that health care workers had from the management team encouraged the adherence to IPC practices. This can be explained by the role supportive supervision plays in management in ensuring quality assurance.^{7,14,15} Furthermore, responses from this study showed that the fear of becoming infected with or developing complications from COVID-19 facilitated the use of IPC measures despite some of the barriers mentioned. Similarly, studies conducted in South-South geopolitical zone in Nigeria and Egypt showed that 64% and 89.2% of the respondents respectively believed that they were at risk of becoming infected with COVID-19 and transmitting the disease to their family members, this belief had a positive influence on their IPC practices.^{13,18} In addition, self reported IPC behaviour from a study in China increased during this pandemic, surprisingly, there was no improvement on IPC practices among respondents from the same study who had direct contact with confirmed COVID-19 cases which could be related to availability of resources.¹⁸ These findings may be explained by the health belief model in which perceive susceptibility to a disease and perceived severity of a disease influences positive decisions in prevention. Therefore, emphasizing the importance of the health belief model in disease prevention can be used as a resourceful tool during training on IPC.¹⁹

V. Conclusion

Institutional and personal factors influence positively or negatively the adherence to IPC measures during the COVID-19 pandemic, with the higher risk of HCWs being infected with COVID-19 as a result of work hazards, it is vital for Governments and health administrators to paly their role in ensuring availability, training and adherence to IPC measures in order to curb the spread of this pandemic.

Acknowledgement

We appreciate REDISSE (Regional Disease Surveillance Systems Enhancement) and Gombe State Government for funding this project. Our appreciation also goes to the Gombe State Emergency Operation Centre and the health care workers in Gombe State for the support offered to the actualization of this research.

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Mohammed A, et. al. "Barriers and Facilitators of Health Care Workers' Adherence to IPC Measures during Covid-19 Pandemic in Gombe LGA, Gombe State, Nigeria: A Qualitative Assessment." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(01), 2021, pp. 40-45.