*Original Article* Research Journal of Health Sciences

# Perception of facility readiness and health worker willingness to participate in the COVID-19 pandemic response in a treatment centre in Nigeria.

**Okoeguale J.[1], *Tobin E.A.[2], Efediyi R.A[1], Njoku A.[1], Erameh C.[3], Momoh M.[1]**

**Abstract**

**Objectives:** The study aimed to investigate health workers' knowledge, self - preparedness and willingness to volunteer for outbreak response and perceived institutional readiness to manage confirmed or suspected cases of COVID-19.

**Methods:** A cross-sectional study was carried out among 300 consenting healthcare workers in a COVID-19 treatment facility in Edo state, Nigeria. Data were collected between April and May 2020 using self-administered questionnaires. Analysis was done using Statistical Package for Social Sciences, with Chi-square test and logistic regression applied with a 95% confidence interval. All ethical considerations were met.

**Results:** One hundred and seventeen (39.0%) respondents were willing to volunteer in the response, with respondents who were confident in their ability to suspect a case, communicate risk effectively and who believed the facility should be a treatment centre being 3.55, 2.07 and 2.30 times more likely to volunteer respectively ($P< 0.001$, $P = 0.04$ and $P = 0.02$ respectively). Two hundred and seven (69.0%) respondents felt the facility was ready to manage confirmed cases. Management commitment 255 (85.0%) was the factor acknowledged as most indicative that the facility was ready to handle cases, with availabiltiy of personal protective wears as the least mentioned 166 (55.3%).

**Conclusion:** Many health workers who should be in the frontline were unwilling to volunteer to manage cases, though perceived facility readiness was high. Health managers should take steps to address identified barriers and provide conducive work environments.

**Keywords**: COVID-19, Health providers, Willingness

*Corresponding Author
**Tobin, E.A.**
ORCID -ID: http://orcid.org/0000-0001-5059-807X
Email: ekaete.tobin@gmail.com

[1]Department of Obstetrics and gynecology, Irrua Specialist Teaching Hospital, Irrua, Nigeria.

[2]Institute of Lassa Fever Research and Control, Irrua Specialist Teaching Hospital, Irrua, Nigeria.
[3]Department of Internal Medicine, Irrua Specialist Teaching Hospital, Irrua, Nigeria.

*Received: October 27, 2020* *Accepted: January 9, 2021* *Published: March 31, 2021*



http://dx.doi.org/10.4314/rejhs.v9i1.4

*Original Article* Research Journal of Health Sciences

# Perception de l'état de préparation et de la volonté des établissements de participer à la pandémie de COVID-19: Étude transversale des agents de santé dans un centre de traitement du sud-sud du Nigéria

**Okoeguale J.[1], *Tobin E.A.[2], Efediyi R.A[1], Njoku A.[1], Erameh C.[3], Momoh M.[1]**

**Résumé**

**Contexte général de l'étude :** L'étude visait à enquêter sur les connaissances, la préparation personnelle et la volonté de se porter volontaire pour la riposte à l'épidémie et la capacité institutionnelle perçue à gérer les cas confirmés ou suspects de COVID-19.

**Méthode de l'étude :** Une étude transversale a été menée auprès de 300 agents de santé consentants dans un établissement de traitement COVID-19 dans l'État d'Edo, au Nigéria. Les données ont été collectées entre avril et mai 2020 à l'aide de questionnaires auto-administrés. L'analyse a été effectuée à l'aide du progiciel statistique pour les sciences sociales, avec un test du chi carré et une régression logistique appliquée avec un intervalle de confiance de 95%. Toutes les considérations éthiques ont été respectées.

**Résultats de l'étude :** Cent dix-sept (39,0%) répondants étaient prêts à faire du bénévolat dans la réponse, les répondants qui étaient confiants dans leur capacité à soupçonner un cas, à communiquer efficacement les risques et qui croyaient que l'établissement devrait être un centre de traitement étant 3,55, 2,07 et 2,30 fois plus susceptibles de faire du bénévolat respectivement ($P < 0,001$, $P = 0,04$ et $P = 0,02$ respectivement). Deux cent sept répondants (69,0%) estimaient que l'établissement était prêt à gérer les cas confirmés. L'engagement de la direction 255 (85,0%) était le facteur reconnu comme le plus révélateur du fait que l'établissement était prêt à traiter les cas, la disponibilité de vêtements de protection individuelle étant le moins mentionné 166 (55,3%).

**Conclusion.** De nombreux agents de santé qui devraient être en première ligne n'étaient pas disposés à se porter volontaires pour gérer les cas, bien que l'état de préparation des établissements soit élevé. Les responsables de la santé devraient prendre des mesures pour éliminer les obstacles identifiés et offrir des environnements de travail propices.

**Mots-clés** : COVID-19, prestataires de santé, volonté.

*Corresponding Author
**Tobin, E.A.**
ORCID -ID: http://orcid.org/0000-0001-5059-807X
Email: ekaete.tobin@gmail.com

[1]Department of Obstetrics and gynecology, Irrua Specialist Teaching Hospital, Irrua, Nigeria.

[2]Institute of Lassa Fever Research and Control, Irrua Specialist Teaching Hospital, Irrua, Nigeria.
[3]Department of Internal Medicine, Irrua Specialist Teaching Hospital, Irrua, Nigeria.

*Received: October 27, 2020* *Accepted: January 9, 2021* *Published: March 31, 2021*



http://dx.doi.org/10.4314/rejhs.v9i1.4

## INTRODUCTION

Healthcare workers are in the frontline of reducing morbidity and mortality during infectious disease outbreaks and continue to render routine health services for other disease conditions. The COVID-19 pandemic poses a particularly difficult challenge to the health sector as the rapid increase in the number of cases globally has overwhelmed the capacities of hospital wards and intensive care units and increased the demand for health workers to manage triage posts amidst shortages in personal protective equipment. In the COVID-19 pandemic, healthcare workers are at a higher risk of infection than the general population (1) , with the risk higher for those working in emergency rooms, critical care and pulmonology units (2). Health worker infections of COVID-19 are estimated as 10% of all cases (3), and high levels of mental and physical exhaustion from long working hours, stigma, physical violence and pain from losing colleagues are reported (4).

The public expects that because of their moral responsibility and professional obligation to their patients, health workers will be available to maintain the functioning of the health system and provide surge capacity during infectious disease outbreaks (5). However, some studies suggest the contrary, as the increased risk of infection may cause some health workers to decline (6), with the result that the response faces the risk of workforce shortages especially when the scale of the outbreak is massive and patient volume increased, as is the case of the COVID-19 pandemic (7). In a survey of 428 New York health care workers on their willingness to care for Ebola viral disease (EVD) patients, 25.1% and 25.9% of respondents respectively believed it was ethical to refuse care and indicated unwillingness to provide care (8). In Ghana, only 27.8% of health workers interviewed on their perceived preparedness to manage COVID -19 considered themselves prepared (9). Similarly 20.6% of doctors and 26.3% of nurses in a study carried out in Libya opined they were personally prepared for the COVID-19 outbreak (2). Health care worker hesitation was observed in the early phase of the human immunodeficiency virus (HIV) outbreak (10) severe acute respiratory syndrome outbreak (11) and the H1N1 influenza pandemic (7). The willingness of health workers to remain at work and volunteer during infectious disease outbreaks depends on their perception of self-preparedness and institutional readiness. Self-preparedness is a function of the individual's knowledge about the disease, person risk perception and confidence in ability to comply with safety measures. Institutional preparedness includes the availability of personal protective gear, guidelines and protocols to deal with COVID-19 patients, mental health support, family support and medical care for infected health workers (5). In a study to assess perception of facility readiness, only 21.6% of 405 frontline doctors from 16 states and 3 territories in India considered their health facility fully prepared to manage COVID-19 cases (1).

Nigeria recorded the first case of COVID -19 on 27th February 2020, and since then, the disease has spread to all 37 states (including the federal capital territory), creating the need for isolation facilities and a critical mass of health workers that are ready to volunteer to manage the rising cases. The study was conducted among health worker in a designated COVID -19 isolation and treatment facility in Nigeria to determine the knowledge, self - preparedness and willingness to volunteer for outbreak response and perceived institutional readiness to manage confirmed or suspected cases of COVID-19.

## MATERIALS AND METHODS

### Study area and design

The cross-sectional hospital-based study was conducted in a public tertiary hospital designated for the treatment of COVID-19. Established in 1993, Irrua Specialist Teaching hospital is located in Esan west local government area of Edo state Nigeria, and serves the Edo central senatorial district, though referrals are received from all parts of the state and neighboring states. The facility provides a wide range of preventive, promotive, curative, and rehabilitative services through specialized clinics and is a Centre of excellence for research and training in viral hemorrhagic diseases. At the time of study, there were 1600 health workers including clinical staff , non-clinical health workers (including administrative staffs, engineering and health record officers) and support staff ( porters, orderlies, laundry staff , kitchen ).

The study was carried out between April and May 2020 with study participants as healthcare workers directly involved in patients clinical and nursing care including doctors, nurses, laboratory scientists, laundry workers, hygienists, and public health officers. These categories were selected as they have primary contact with patients either in the triage station, emergency and intensive care units and were most likely to be front liners in the response and

provide are to COVID-19 patients (4).

**Selection criteria**

Eligibility criteria included healthcare workers involved in patient care who were present at the time of conduct of the study, willing to give consent and employed for not less than 6 months before the study were eligible for the study. Those unwilling to give consent for the study and healthcare workers who are unavailable at the time of data collection were excluded.

**Sample size estimation and selection of respondents**

Sample size was estimated using Cochrane's formula for calculation of sample size for prevalence study (12) and adjusted for populations less than 10,000. Using a prevalence rate of 89% from a similar study carried out in China, a standard normal deviation set at 1.96 and a 95% confidence interval and margin of error (d) as 5%, and non-response rate of 10%, a sample size of 167 was calculated and rounded up to 300.

Respondents were selected through a 2-stage sampling process with probability proportionate to size sampling used to determine the number of respondents required from each professional cadre, and simple random sampling used to select respondents from each professional category.

**Data collection**

Data were collected using structured self-administered English language self-administered questionnaires developed by the authors of the study after an extensive literature search on the topic. Because of the need to prevent infection from handling of questionnaires, participants were required to perform hand hygiene and wear a mask when filling the questionnaire.

The questionnaire was divided into four parts with the part one as sociodemographic characteristic including sex, age, professional category, educational level and sources of information about COVID-19. Professional category was further classified as doctors, nurses, and allied workers (laboratory scientists, laundry workers, hygienists and public health officers) (7)

The second section of the questionnaire was on knowledge of COVID-19 with 20 questions that covered source of information, mode of transmission, complications, incubation period, knowledge of symptoms of COVID-19 and public health preventive measures and two questions on participation in training on IPC and case management with response as Yes or No;. Each question on knowledge required a Yes, no or I am not sure response. A score of one was assigned for a correct response and zero for an incorrect response with total possible score of 20.

Knowledge of COVID-19 was graded as good or poor depending on scores obtained by the respondent with a grade of poor if the respondent scores >50 % of total and good if ≤50%.

Part three focused on health worker willingness to be a part of a COVID-19 response. A respondent was considered willing if an affirmative response was given to the question:' Are you willing to volunteer to be in a COVID -19 response?' Section four had three questions to assess respondent's confidence to identify a suspected case based on the Nigeria Centre for disease control (NCDC) case definition, use personal protective equipment (PPE) and use communication lines effectively when a case is suspected , with responses in Likert style format as: very confident (4), moderately confident (3) , somewhat confident (2) and not confident (1).

Part five assessed respondent's impression of the readiness of the facility for the outbreak and whether COVID -19 confirmed cases should be treated in the facility. The former was assessed with the question: 'Do you think your facility is ready for the outbreak?' with responses as 'Yes', 'No' and 'I am not sure'. Facility readiness was assessed using 7 items as follows: Hospital management commitment, knowledge of the existence of a suspect bay, existence of a response team, availability of sufficient hand wash stations , sufficiency of PPE, protocols and guidelines and risk communication on the outbreak to staff. Participants were required to answer 'Yes', 'No' or 'I am not sure' to each item. A 'Yes' response was scored one, while 'No' and 'I am not sure' were scored zero, with the total possible score as 7. Individual perception of facility readiness was graded as 'ready' or 'not ready' if the total score fell between < 50% and > 50% of the total respectively. Opinions about whether the facility should be a treatment Centre was assessed with the question: 'Do you think your facility should be a treatment Centre for COVID-19?', with the responses as Yes, No or I don't know.

The researchers and two infectious disease and public health experts checked content and face validity. The questionnaire was pretested on 20 health workers from another tertiary facility in the state.

**Study variables**

Sociodemographic characteristics, knowledge of COVID-19, perceived facility readiness and perceived self -efficacy and training were independent variables and willingness to volunteer was the dependent variables.

**Ethical considerations**

Approval for this study was obtained from the Ethics committee of the Irrua Specialist Teaching Hospital. Ethical considerations were based on the general ethical principles applicable to human subjects including respect for persons, beneficence, non-maleficence, and justice. Participants were required to provide written informed consent after the study protocol was explained to them, and they understood participation was voluntary and without compensation. Participants' confidentiality was maintained by the anonymization of the questionnaires.

**Data analysis**

Data analysis was done using the Statistical Package for Scientific solution (SPSS) version 22. (SPSS, Inc., Chicago, IL, USA). Sociodemographic characteristics were summarized using descriptive analysis and presented in frequency distribution tables for categorical variables, means and standard deviations for continuous variables.

Chi-square test of association, with p set as $< 0.05$ was used to test associations between dependent and independent variables. Predictors for willingness to volunteer were determined using multivariate logistics regression and calculation of the odds ratio (OR) with predictor variables with $P \leq 0.05$ in bivariate analysis entered into the model. An OR of $\leq 1$ was associated with less likelihood to volunteer, while an OR of >1 was associated with more likelihood to volunteer.

**RESULTS**

Three hundred respondents completed the survey. Mean age of respondents was 34.4 (8.1) years. Males made up 143 (56.1%) of the respondents, majority, 153 (60.0%) were married and attained 236 (92.5%) tertiary education Table 1.

All respondents (100%) had heard of COVID -19. Primary source of information on COVID -19 was the social media platform, 171 (67.1%) followed by NCDC website 150 (51.0%). Figure 1.

One hundred and twenty nine (43.0%) respondents had been trained on COVID-19 with 74 (59.2%) doctors trained compared to 36 (41.9%) nurses and 19 (21.3%) allied workers ($\chi^2 = 30.45$, $P < 0.001$). Knowledge items assessed are presented in Table 2.

The majority, 230 (76.7%) had good knowledge of COVID-19. In bivariate analysis, knowledge was significantly associated with professional category ($P < 0.001$), educational level ($P < 0.00$), age ($P < 0.00$). Sex and attendance of a training on COVID-19 were not significantly associated with knowledge ($P = 0.42$ and $P = 0.26$ respectively). In logistics regression, doctors and respondents above 34 years were respectively 19.37 and 22.96 times more likely to have good knowledge compared to others in their categories. Table 3.

Two hundred and thirty nine (79.9%) expressed confidence in their ability to suspect a case, 151 (50.3%) were confident in their ability to use PPE appropriately, and 231 (77.0%) in their ability communicate risk to relevant authorites .

Two hundred and seven (69.0%) respondents felt the facility was ready to manage cases during the outbreak, while 93 (31.0%) felt otherwise. One hundred and seventy-one (57.0%) were in agreement with the designation of the facility as a treatment Centre. Management commitment 255 (85.0%) was the factor acknowledged as most indicative that the facility was ready to handle cases, with availabiltiy of PPE as the least mentioned 166 (55.3%) Figure 2.

One hundred and seventeen (39.0%) respondents indicated their willingness to volunteer to be part of a COVID response team. Reasons given included: the feeling of a moral duty to save lives , 84 (71.8%), a personal love for the country, 70 (59.8%), renumeration 63 (53.8%), a desire to broaden professional experience and career 61 (52.1%), an opportunity to use professional experience 44 (37.6%), persons known to them are volunteering 16 (13.7%) and coercion 5 (4.3%).

In bivariate analyis, divorced and single respondents were significantly more willing to volunteer compared to married respondents ($\chi^2 = 13.46$, $P = 0.01$). Willingness to volunteer (WTV) was significantly associated with perceived confidence in the use of PPE, as 73 (48.3%) of respondents who expressed confidence compared with 44 (29.5%) of those who were not were willing to volunteer ( $P = 0.01$). Similarly, respondents who were confident in their ability to

identify a suspected case and those who were confident they could identify communication lines in the event of identifying a case were more willing to volunteer ( $P < 0.001$ and $P < 0.001$ respectively) Table 4.

In logistics regression, respondents who were confident in their ability to suspect a case, communicate risk effectively and who believed the facility should be a treatment centre were 3.55, 2.07 and 2.30 times more likely to volunteer than others ($P< 0.001$, $P = 0.04$ and $P = 0.02$ respectively). Table 5.

**DISCUSSION**

The success of any response mounted against the COVID -19 pandemic in the country will depend heavily on the knowledge level, availability, and willingness to work of frontline health workers. The study showed majority of the respondents had good knowledge of COVID-19, a finding shared by studies in Nepal (82.8%) (13). Chine (88.4%) (14) and Ghana (65.1%) (15). Lower levels of good knowledge were reported in Libya, 26.4% (2) and Iran (16,17) Despite the high proportion with good knowledge, gaps were observed as a small proportion of respondents knew that body weakness and chest pain were symptoms of COVID-19, and hospital visitation was a risk factor for contracting the disease. A considerable proportion of respondents also held the misconception that antimalarials are a method of prevention, an opinion that may promote self-medication among health workers, and lead to delayed diagnosis and treatment. The finding of better knowledge among doctors and nurses has been reported in other studies (13,15) and may be due to differences in levels of technical knowledge between the groups and the preference to train doctors and nurses over other categories. Efforts should be put into ensuring other categories of health workers are trained. Older respondents were found to have significantly better knowledge of COVID-19, in tandem with other studies (18). Adequate knowledge is the foundation for positive perception and practice of preventive behavior.

Health workers in this study got information on COVID-19 from many sources, although the main source was social media, as reported in other studies (14,19,20). The country's health ministry was a prominent source mentioned in other studies (5,17,18,21) but carried less significance in this study. The relevance of this is that social media, provides information on a wide array of subjects is also besieged with false information that can spread panic and stigma (18). Health authorities at federal and state levels should monitor information shared across social media and take advantage of the wide patronage to send credible and accurate information to health workers while discountenancing false information and rumors. The low patronage of government websites in this study may be an indication of a general lack of trust in government.

Seven in 10 respondents opined their facility was ready for the outbreak, while a slightly lower proportion felt the facility should manage cases, in tandem with a study in Ghana (18) and in contrast to a study in India (1) and Libya (2) where 21.6% and 13.0% respectively felt their facilities were ready. Personal protective equipment were least mentioned as readiness indicators as was also reported in a study in Ghana (9). The outbreak has led to a scarcity of PPE globally and the low patient patronage in many facilities has led to a decline in revenue, however, facilities can promote the rational use of PPEs and adopt other measures to protect staff, such as physical distancing. The availability of guidelines and protocols was also a factor mentioned by respondents as deficient as should be addressed by hospital management. Clear institutional guidelines improve the quality of clinical decisions, reduce uncertainty in patient management and avoids the use of outdated practices (5). The visible commitment of hospital management is commendable.

The low proportion of respondents who were willing to volunteer to manage cases has been reported by other studies (9,19,22) (2) and contrasts with studies from Ghana, 57.5% (15) and Germany 63.4% (23). Willingness to volunteer was significantly associated with respondents' confidence suspecting a case and communicating risk to relevant authorities, and a agreement with the fact that the facility should treat cases. Similar factors were documented in a study on WTV in a SARS outbreak (11). The implication is that there may not be enough health workers for surge capacity to provide medical services to COVID-19 patients if needed. The quality of institutional-based training is also questioned as though a reasonable number of health workers had been trained on COVID-19, training had no significance with their WTV. Health workers need practical training on use of PPE to build their confidence and reduce fears of infection. There is also need for training and retraining on case definition and the provision of algorithms and poster reminders to build

confidence in case identification. So adequate supplies of PPE and a safe work environment may help to recruit more married health workers for the response. Initiatives to increase the number of health workers to response to the outbreak have included reallocation of staff from other departments , fast-tracking the graduation of medical students to join the workforce, suspension of healthcare worker leave and recalling retired healthcare workers (24). However, an unwilling healthcare worker is most likely to get infected with the disease, and coercion should be avoided. Interestingly, respondents who were willing to volunteer did so out of a moral obligation to save lives. This is important as it reemphasizes the need to inculcate in health workers the tenets of their profession.

The study is limited in a few ways. It was carried out in a tertiary hospital in southern Nigeria. The findings may not be generalizable to other parts of the country or to secondary or primary health facilities.

## CONCLUSION

A large proportion of potential frontline health workers in a designated COVID-19 treatment centre in the study area were unwilling to volunteer during the outbreak, with confidence to identify a case, communicate risk and agreement with the designation of the facility as a treatment centre as influencing their decisions. Health managers should pay attention to the needs of staff to ensure that identified barriers are removed.

**Acknowledgements:** The authors appreciate all persons who assisted with data collection. The authors are grateful to health workers who participated in the study.

**Conflict of interest:** The authors declare no conflict of interest.

## REFERENCES

1. Singh H, Sharma S. Concerns of Frontline Doctors in India during COVID-19: A Cross-Sectional Survey. Indian J Public Health. 2020 .1;64:S237–9.
2. Elhadi M, Msherghi A, Alkeelani M, Zorgani A, Zaid A, Alsuyihili A, et al. Assessment of Healthcare Workers' Levels of Preparedness and Awareness Regarding COVID-19 Infection in Low-Resource Settings. Am J Trop Med Hyg. 2020 . 2(5):828-833
3. Russell P. 1 in 10 COVID-19 Cases in May Were Healthcare Workers [Internet]. Medscape. 2020 [cited 2020 Aug 22]. Available from: https://www.medscape.com/viewarticle/933439
4. Olum R, Chekwech G, Wekha G, Nassozi DR, Bongomin F. Coronavirus Disease-2019: Knowledge, Attitude, and Practices of Health Care Workers at Makerere University Teaching Hospitals, Uganda. Front Public Heal. 2020.8.181. doi: 10.3389/fpubh.2020.00181
5. Suleiman A, Bsisu I, Guzu H, Santarisi A, Alsatari M, Abbad A, et al. Preparedness of frontline doctors in Jordan healthcare facilities to COVID-19 outbreak. Int J Environ Res Public Health. 2020.17:3181 doi:10.3390/ijerph17093181
6. Gee S, Skovdal M. The role of risk perception in willingness to respond to the 2014–2016 West African Ebola outbreak: a qualitative study of international health care workers. Glob Heal Res Policy [Internet]. 2017. 2:21 DOI 10.1186/s41256-017-0042-y
7. Ma X, He Z, Wang Y, Jiang L, Xu Y, Qian C, et al. Knowledge and attitudes of healthcare workers in Chinese intensive care units regarding 2009 H1N1 influenza pandemic. BMC Infect Dis [Internet]. 2011;11(1):1–7.
8. Narasimhulu D, Edwards V, Chazotte C, Bhatt D, Weedon J, Minkoff H. Healthcare Workers' Attitudes Toward Patients With Ebola Virus Disease in The United States. Open Forum Infect Dis. 2016. 3(1): ofv192. doi: 10.1093/ofid/ofv192. PMID: 26788546; PMCID: PMC4716343.
9. Afulani P, Gyamerah A, Aborigo R, Nutor J, Malechi H, Laar A, et al. Perceived preparedness to respond to the COVID-19 pandemic: A study with healthcare workers in Ghana. MedRxiv. 2020; doi: https://doi.org/10.1101/2020.07.10.20151142
10. Dworkin J, Albrecht G, Cooksey J. Concern about AIDS among hospital physicians, nurses and social workers. Soc Sci Med. 1991;33(3):239–48.
11. Shiao JSC, Koh D, Lo LH, Lim MK, Guo YL. Factors predicting nurses' consideration of leaving their job during the SARS outbreak. In: Nursing Ethics [Internet]. SAGE Publications Ltd; 2007 . 5–17. Available from: https://pubmed.ncbi.nlm.nih.gov/17334166/
12. Bonita R, Beaglehole R, Kjellstrom T. Basic epidemiology 2nd edition [Internet]. 2nd ed. Geneva: World Health Organisation; 2006. 51–55. Available from: https://apps.who.int/iris/bitstream/handle/10665/43541/9241547073_eng.pdf;jsessionid=DDB7D5E92A787DE948DC1B2AF5B786E9?sequence=1
13. Upadhyaya DP, Paudel R, Bromberg DJ, Acharya D. Frontline healthcare workers ' knowledge and perception of COVID-19 and willingness to work during the pandemic in Nepal? a nationwide cross-sectional web-based study. 2020; doi: https://doi.org/10.1101/2020.08.12.20173609
14. Huynh G, Nguyen T, Tran V, Vo K, Vo V, Pham L. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. Asian Pac J Trop Med.

2020.1;13(6):260–5.
15. Nkansah C, Serwaa D, Adarkwah LA, Osei-Boakye F, Mensah K, Tetteh P, et al. Novel coronavirus disease 2019: knowledge, practice and preparedness: a survey of healthcare workers in the Offinso-North District, Ghana. Pan Afr Med J. 2020 .16;35.
16. Bhagavathula AS, Aldhaleei WA, Rahmani J, Mahabadi MA, Bandari DK. Knowledge and Perceptions of COVID-19 Among Health Care Workers: Cross-Sectional Study. JMIR Public Heal Surveill. 2020. 30;6(2):e19160.
17. Nemati M, Ebrahimi B, Nemati F. Assessment of iranian nurses' knowledge and anxiety toward covid-19 during the current outbreak in iran. Arch Clin Infect Dis. 2020 Apr 1;15(COVID-19). DOI: 10.5812/archcid.102848
18. Nkansah C, Serwaa D, Akua Adarkwah L, Osei-Boakye F, Mensah K, Tetteh P, et al. Novel coronavirus disease 2019: knowledge, practice and preparedness: a survey of healthcare workers in the Offinso-North District, Ghana. Pan Afr Med J. 2020.35(2):79. DOI: 10.11604/pamj.supp.2020.35.2.23644
19. Ogolodom M, Mbaba N, Alazigha N, Erondu O, Egbe N, Golden, et al. Knowledge, Attitudes and Fears of HealthCare Workers towards the Corona Virus Disease (COVID-19) Pandemic in South-South, Nigeria. Heal Sci J. 2020;14(1: 002.):1–10.
20. Giao H, Han NTN, Khanh TV, Ngan VK, Tam VV, An PL. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. Asian Pac J Trop Med. 2020;13:1–6.
21. Alreshidi NM. Evaluation of Knowledge, Practices, Attitude and Anxiety of Pakistan's Nurses towards COVID-19 during the Current Outbreak in Pakistan. 2020;9(3):27–34.
22. Alser O, Alghoul H, Alkhateeb Z, Ayah ;, Albarqouni ; Loai, Saini K, et al. Healthcare workers preparedness for COVID-19 pandemic in the occupied Palestinian territory: a cross-sectional survey. MedRxiv. 2020; doi: https://doi.org/10.1101/2020.05.09.20096099
23. Wicker S, Rabenau F, Gottschalk R. [Influenza pandemic: Would healthcare workers come to work? An analysis of the ability and willingness to report to duty]. Bundesgesundheitsblatt Gesundheitsforsch Gesundheitsschutz. 2009 ;52(8):862–9.
24. Chersich MF, Gray G, Fairlie L, Eichbaum Q, Mayhew S, Allwood B, et al. COVID-19 in Africa: care and protection for frontline healthcare workers. Globalization and health. 2020. 16: 46. https://doi.org/10.1186/s12992-020-00574-3

**How to cite this article:**
Okoeguale J., Tobin E.A., Efediyi R.A, Njoku A., Erameh C., Momoh M. Perception of facility readiness and health worker willingness to participate in the COVID-19 pandemic response in a treatment centre in Nigeria. Research Journal of Health Science, 2021, 9(1): 30-43

**Table 1: Sociodemographic characteristics of respondents**

| Variable | Frequency (%) |
|---|---|
| **Age** | |
| <24 | 20 (6.7) |
| 25-34 | 145 (48.3) |
| 35-44 | 94 (31.3) |
| ≥. 45 | 41 (13.7) |
| | |
| **Sex** | |
| Male | 163 (54.3) |
| Female | 137 (45.7) |
| | |
| **Marital Status** | |
| Single | 122 (40.7) |
| Married | 173 (57.7) |
| Divorced/widowed/separated | 5 (1.7) |
| | |
| **Educational level** | |
| Primary | 8 (2.7) |
| Secondary | 19 (6.3) |
| Tertiary | 254 (34.7) |
| Diploma | 19 (6.3) |
| | |
| **Profession** | |
| Allied health worker | 89 (29.7) |
| Nurse | 86 (28.7) |
| Doctor | 125 (41.7) |

**Table 2: Knowledge of COVID -19 among respondents (n = 300)**

| Knowledge item | Number of correct responses (%) |
|---|---|
| **Symptoms** | |
| Cough | 247 (96.9) |
| Fever | 243 (95.3) |
| Difficulty in breathing | 231 (90.6) |
| Sore throat | 167 (65.5) |
| Tiredness | 99 (38.3) |
| Body weakness | 86 (33.7) |
| Abdominal pain | 29 (11.4) |
| Chest pain | 77 (30.2) |
| Diarrhea | 24 (9.4) |
| **Risk factors** | |
| Hospital visitation | 39 (15.3) |
| Crowded environments | 176 (69.00 |
| Elderly age | 153 (51.0) |
| **Incubation period** | 221 (86.7) |
| **Methods of Prevention** | |
| Handwashing | 247 (96.9) |
| Use of sanitizer | 236 (92.5) |
| Covering nose with elbow or tissue | 224 (87.8) |
| Keeping a distance from sick persons | 212 (83.1) |
| Eating healthy foods and vitamins | 135 (52.9) |
| Self-medication with antimalarials | 77 (30.2) |
| Avoiding public places | 211 (82.7) |
| COVID-19 leads to pneumonia, respiratory failure, and death | 146 (57.3) |
| Knowledge of notification pathway for suspected cases | 198 (77.6) |

**Table 3: Composite (Bivariate and Logistics regression) table of association of knowledge of COVID-19 with sociodemographic characteristics (n = 300)**

| Variable | Poor | Good | $\chi^2$ | AOR | P value | 95% CI |
|---|---|---|---|---|---|---|
| **Designation** | | | | | | |
| Allied health worker | 6 (4.8) | 119 (95.2) | 55.1 | 1 | | |
| Nurse | 21 (24.4) | 65 (75.5) | | 2.56 | 0.06 | 0.95 – 6.87 |
| Doctor | 43 (48.3) | 46 (51.7) | | 19.37 | 0.00* | 5.60-67.0 |
| **Sex** | | | | | | |
| Male | 35 (21.5) | 128 (78.5) | 0.41 | | 0.42 | |
| Female | 35 (25.5) | 102 (74.5) | | | | |
| **Eductional level** | | | | | | |
| Primary | 6 (75.0) | 2 (25.0) | 53.8 | 1 | | |
| Secondary | 12 (63.2) | 7 (36.8) | | 0.91 | 0.92 | 0.12 - 6.76 |
| Tertiary | 40 (15.7) | 214 (84.3) | | 2.18 | 0.42 | 0.33 – 14.3 |
| Vocational/ others | 12 (63.2) | 7 (36.8) | | 1.09 | 0.93 | 0.16-7.59 |
| **Age group** | | | | | | |
| <25 | 15 (75.0) | 5 (25.0) | 42.8 | 1 | | |
| 25 -34 | 39 (26.9) | 106 (73.1) | | 2.71 | 0.12 | 0.78 – 9.46 |
| 35-44 | 8 (8.5) | 86 (91.5) | | 22.96 | 0.00* | 5.92-89.11 |
| ≥45 | 8 (19.5) | 33 (80.5) | | 6.89 | 0.01* | 1.69-28.19 |
| **Attended training in COVID-19** | | | | | | |
| Yes | 26 (20.2) | 103 (79.8) | 1.28 | | 0.26 | |
| No | 44 (25.7) | 127 (74.3) | | | | |

AOR: Adjusted Odds ration. *P< 0.05

**Table 4: Association of perception with willingness to volunteer (n = 300)**

| Variable | No n (%) | Yes n (%) | $\chi 2$ | P value |
|---|---|---|---|---|
| **Age group** | | | | |
| <25 | 10 (50.0) | 10 (50.0) | 3.39 | 0.34 |
| 25 -34 | 88 (60.7) | 57 (39.3) | | |
| 35-44 | 63 (67.0) | 31 (33.0) | | |
| ≥45 | 22 (53.7) | 19 (46.3) | | |
| **Sex** | | | | |
| Male | 97 (59.5) | 34 (36.6) | 0.33 | 0.64 |
| Female | 86 (62.8) | 51 (37.2) | | |
| **Marital Status** | | | | |
| Single | 66 (54.1) | 56 (45.9) | 13.46 | 0.00* |
| Married | 117 (67.6) | 56 (32.4) | | |
| Divorced/widowed/separated | 0 (0.0) | 5 (100.0) | | |
| **Educational level** | | | | |
| Primary | 5 (62.5) | 3 (37.5) | 4.16 | 0.24 |
| Secondary | 8 (42.1) | 11 (57.9) | | |
| Tertiary | 156 (61.4) | 98 (38.6) | | |
| Diploma | 14 (73.7) | 5 (26.3) | | |
| **Designation** | | | | |
| Allied health worker | 60 (67.4) | 29 (32.6) | 2.25 | 0.32 |
| Nurse | 51 (59.3) | 35 (40.7) | | |
| Doctor | 72 (57.6) | 52 (42.4) | | |
| **Confidence in the use of PPE** | | | | |
| Confident | 78 (51.7) | 73 (48.3) | 11.16 | 0.01* |
| Not confident | 105 (70.5) | 44 (29.5) | | |
| **Ever attended training** | | | | |
| Yes | 72 (55.8) | 57 (44.2) | 2.55 | 0.11 |
| No | 111 (64.9) | 60 (5.1) | | |
| **Confidence in ability to suspect a case** | | | | |
| Confident | 132 (55.2) | 107 (44.8) | 16.45 | 0.00* |
| Not confident | 51 (83.6) | 10 (16.4) | | |
| **Confident in capacity to communicate risk** | | | | |
| Yes | 129 (55.8) | 102 (44.2) | 11.22 | 0.00* |
| No | 54 (78.3) | 15 (21.7) | | |
| **COVID-19 Knowledge level** | | | | |
| Poor | 48 (68.6) | 22 (31.4) | 2.20 | 0.14 |
| Good | 135 (58.7) | 95 (41.3) | | |
| **Facility ready for the outbreak** | | | | |
| Ready | 59 (63.4) | 34(36.6) | 0.34 | 0.56 |
| Not ready | 124 (59.9) | 83 (40.1) | | |
| **Facility should be a treatment centre** | | | | |
| Yes | 87 (50.9) | 84 (49.1) | 17.13 | 0.00* |
| No | 96 (74.4) | 33 (25.0) | | |

*P< 0.05

**Table 5: Logistic regression table of predictors of WTV (n =300)**

| Variable | AOR | P value | 95% CI |
|---|---|---|---|
| **Confidence in the use of PPE** | | | |
| Not confident | 1 | | |
| Confident | 1.60 | 0.08 | 0.94 – 2.72 |
| **Confident in the ability to suspect a case** | | | |
| Not confident | 1 | | |
| Confident | 3.55 | 0.00 | 1.35-3.92 |
| **Facility should be a treatment centre** | | | |
| No | 1 | | |
| Yes | 2.30 | 0.02 | 1.61 – 7.81 |
| **Marital status** | | | |
| Single | 1 | | |
| Married | 0.63 | 0.09 | 0.37- 1.07 |
| Divorced/Widowed/Separated | 1.83 | 0.99 | 0.00 |
| **Confidence in capacity to communicate risk** | | | |
| Not confident | 1 | | |
| Confident | 2.07 | 0.04 | 1.04- 4.14 |

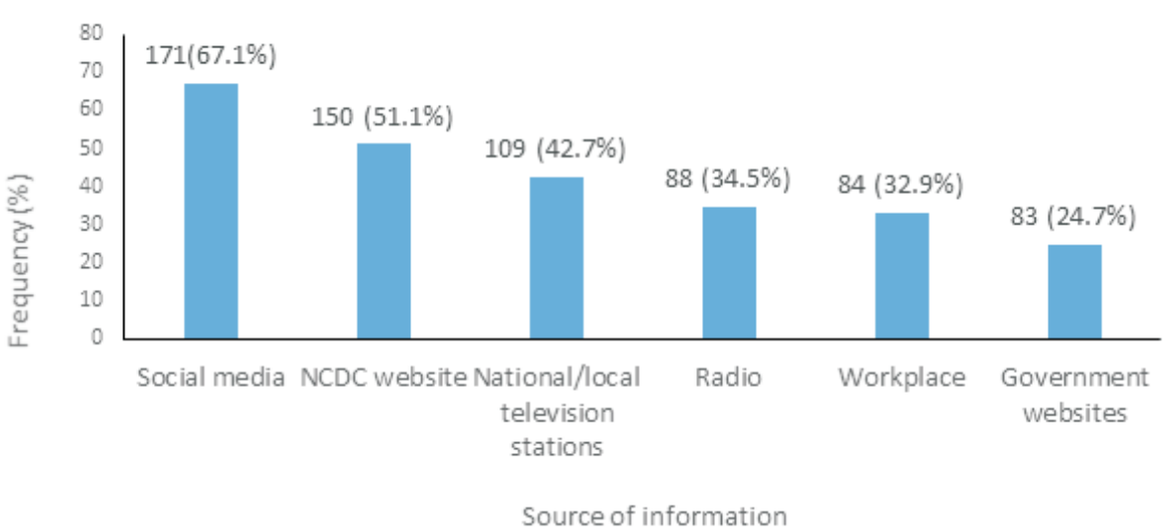


Figure 1: Source of information on COVID-19 (multiple responses)

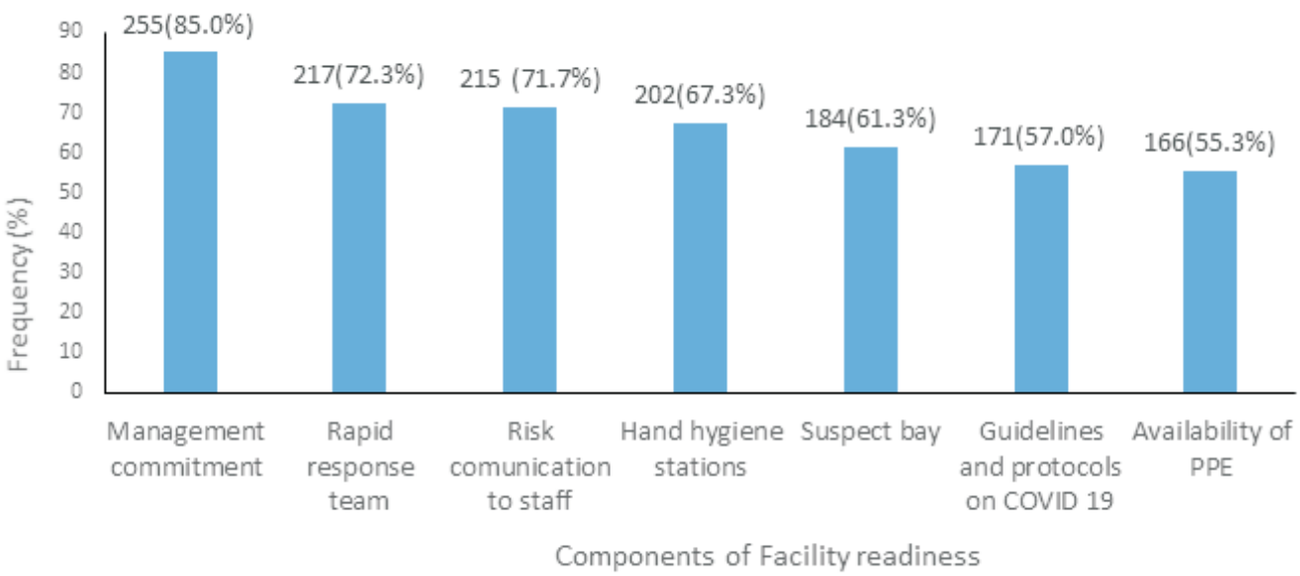


Figure 2: Respondents perception of facility readiness* (n= 300)
*multiple responses