

Escapades of Sex Workers amidst Lockdown: An Untold Navigation Pathway for SARS-CoV-2 Community Transmission in Nigeria

Efosa Bolaji Odigie^{1,2*} Blessing Osaze Airiagbonbu¹ and Afolabi Adiru Adegboye^{1,3*}

¹Department of Medical Laboratory Science, University of Benin, Nigeria. ²SHCCSW Research Group, University of Benin, Nigeria. ³Department of Veterinary Pathology, University of Ilorin, Nigeria.

Abstract

INTRODUCTION: Severe acute respiratory syndrome coronavirus type- 2 (SARS-CoV-2) was first identified in Wuhan; China, late 2019 causing the disease named COVID-19. Safety measures against SARS-CoV-2 comprised: hand washing with soap and running water, use of alcohol-based hand sanitizer, face masking, social distancing and lockdown to avoid SARS-CoV-2 infection. Regrettably, these measures are not in tandem to preventing community transmission orchestrated by sex workers as the rules remain jettisoned due to escapades amid lockdown. Many countries continue to undermined or not considering the navigation pathways from sex workers as a means of community transmission of the virus. In the battle against COVID-19, sex working is viewed as one of the factors that may enhance community transmission inadvertently. **AIM:** This study aimed at creating awareness of the navigation pathways vis-à-vis the untold havoc constituted by sex worker's activities amidst lockdown, which may enhance the spread of SARS-CoV-2 infection. Although, sexual route has not been fully defined for SARS-CoV-2 transmission; however, social distancing (physical contact) has been defied in the act as it amounts to full body contacts with unsuspecting clients. **METHODS:** Google search engine was used in surfing for relevant literatures describing the keywords. **RESULTS:** Espoused articles suggest that unchecked activities of sex workers may lead to community-based transmission of SARS-CoV-2 infection. It is extremely worrisome that governmental agencies responsible for enforcing lockdown do not take brothels into cognizance as possible unimaginable routes of exposure of person-to-person transmission of SARS-CoV-2; while the implications of patronizing sex workers during lockdown remains enormous. **CONCLUSION:** Despite government measures to curb further spread of SARS-CoV-2, sex working asides political gatherings and migrations may continue to jettison the move. Hence, government agencies should particularly investigate brothels including screening to prevent possible spread from the circle.

Keywords: Community transmission, Coronavirus, COVID-19, SARS-CoV-2 infection and Sex Workers

*Correspondence: bolaji.odigie@uniben.edu & adegboye.aa@unilorin.edu.ng
+2348023345132 & +2347030714077. **ORCID: 0000-0002-1233-0491**

Authors' Contributions: This paper was written in full collaboration among all authors and we accept any responsibility arising therein. All authors revised, reviewed and approved the final draft. All authors contributed immensely to justify authorship while OEB handles the correspondence on behalf of others.

Received: May 12, 2020; **Accepted:** June, 25, 2020; **Published:** June 30, 2020

Citation: Odigie EB, Airiagbonbu BO, Adegboye AA. Escapades of Sex Workers amidst Lockdown: An Untold Navigation Pathway for SARS-CoV-2 Community Transmission in Nigeria. **J Med Lab Sci.** 2020;30(20):99-109

Introduction

Coronavirus disease 2019 (COVID-19) is a respiratory disease that is capable of transmission from one person to another via droplets from infected persons or animate/ inanimate objects and their immediate environment. It is caused by the Coronavirus strain known as “Severe Acute Respiratory Syndrome Coronavirus type 2 (SARS-CoV-2)” with flu-like symptoms and often results to death if not properly managed. “SARS-CoV-2 belongs to the Coronavirus family originating from Wuhan; China, in late 2019” (1). World Health Organization on March 12, 2020 declared Coronavirus disease 2019, as pandemic just after it was discovered to have affected many countries in the world

(2). Globally, as at June 25, 2020 (09:45am Nigerian time), the World Health Organization has recorded over 9million confirmed cases of COVID-19 in 216 countries and more than 478, 000 deaths world-wide (3). The United States of America is worst hit by the ravaging COVID-19 with over 2.3M cases and above 121,000 deaths as at the time of this report (3). In Nigeria, SARS-CoV-2 has infected over 22,000 persons across 35 states including the Federal Capital Territory (FCT) Abuja (Figure 1). As of June 24, 2020; over 7,600 persons have fully recovered from the disease with more than 540 deaths so far and still counting (4, 5).

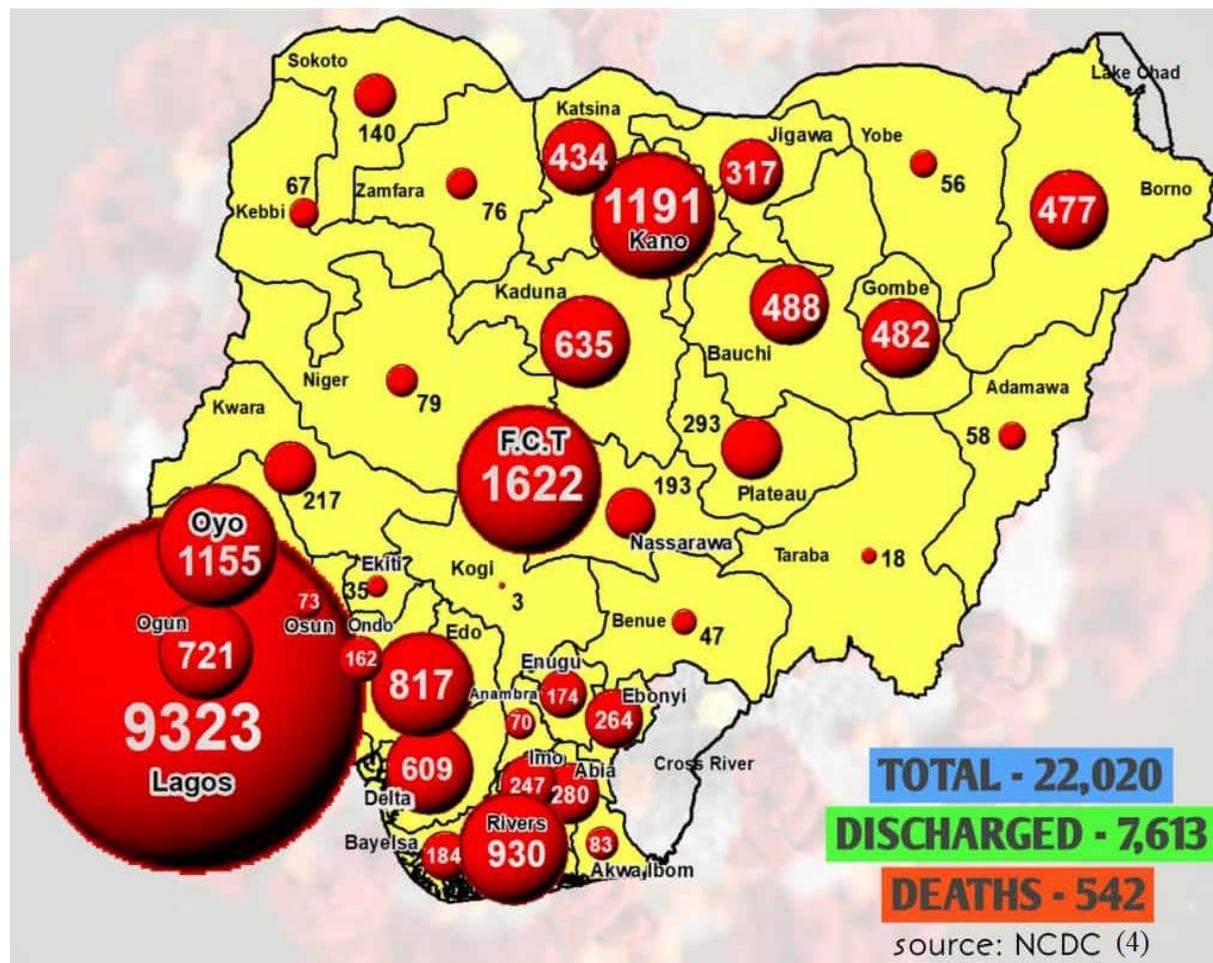


Figure 1: COVID-19 Update via map of Nigeria including total number infected by SARS-CoV-2, discharged cases and deaths recorded as at June 24, 2020 by NCDC (4) and CML (5).

Available evidence suggests that many factors can contribute to the widespread and increased mortality rates of COVID-19 including improper disposal of COVID-19 generated wastes, contact with infected persons, objects and materials, while the portal entries of the virus in humans include: mouth, nose and eyes (6). There are several other theories suggesting the impact of environmental factors such as humidity and temperature, soil, and water including the atmosphere as possible route of transmission and spread of SARS-CoV-2 (7, 8). COVID-19 pandemic is described as a novel Coronavirus without an established treatment protocols or vaccines for it as at the time of writing this report. However, with the triggering increase in the spread and mortality rate being experienced globally, there had been numbers of suggested strategies to control it spread. Some of these measures include social distancing, use of personal protective agents, proper disposal of medical wastes, regular hand washing with soap and running water and personal hygiene practices. As observed in other countries, many States in Nigeria adopted the lockdown rule as a measure to further reduce or curb wide-spreading of the virus (1). Despite the aforementioned intervention to further control wide spreading of COVID-19, there have been daily reports of increasing new confirmed cases in different parts of the country (Lagos, Ogun, Kano, Abuja, Rivers, Edo), which provides insight to the endemic state of the infection in Nigeria (9). Evidence also showed that there was no clear source of origin of new confirmed cases of COVID-19 despite observing a total lockdown of the entire country (Nigeria). This has led to suggestion that there may be widespread of 'unimaginable' transmission of SARS-CoV-2 infections leading to community based transmission in the country. Also, illegal movements amidst lockdown, ignorance, prostitution, political gathering and other salient activities (intermingling in market places for example) still operate unnoticed or unattended to, which may serve as leading gateways to community

transmission in the country (10). Many countries undermined or are not considering the navigation pathways from sex workers in the battle against COVID-19. As we already know, social distancing may be observable in the other reckless behaviours but regarding transactional sex working, the entire body is undoubtedly cut up in the web of sex services to a client (11). Therefore, the measures described by the World Health Organization: hand washing, social distancing etc., and more recently (compulsory face masking) may not help to prevent person-to-person transmission of SARS-CoV-2 mostly derived by sex workers. Unarguably, operations of sex workers amidst lockdown shall endanger the policies of a country where lockdown is enforced. It is awfully worrying that some State Governments in Nigeria while enforcing total lockdown do not consider beer parlours, brothels, nightclubs and sex homes as possible unforeseen routes for person to person transmission of SARS-CoV-2 infection. In a worse scenario, the negative impacts of clients patronizing sex workers during a lockdown will remain untold. Therefore, in this article we hope to create awareness of the escapades of sex workers during lockdown vis-à-vis the navigation pathways for SARS-CoV-2 community transmission in the face of COVID-19 pandemic.

Escapades of Sex Workers Amid Lockdown

Available evidences (11, 12, 13), suggest that in order to survive financial hardship, many people use sex to provide cheap labour (12, 13). Sex work and migration from different parts of the world have remained trending issues for years and may be of global concerns with respect to the spread of SARS-CoV-2. In different countries, sex workers are attributed with derogatory names like "Ashewo" (12), "Karuwa", "Akwuna" (13) and other disparaging names. Researchers struggle to get comprehensive demographic information about the behavioural attitude and prevalence of sex workers, as it is

illegal in many countries (14). Sex workers' activities are provided in underground covert nature and may be responsible for silent transmission of SARS-CoV-2 as contact tracing of suspected asymptomatic carriers become difficult to establish. Compulsive behaviour: hard drugs, alcohol, smoking, gambling, weapons and other addiction are motivational forces supporting sex worker's trades (15). Majority of resident sex workers now operate secretly in bars, drinking joints and club houses aside the usual brothel arrangement where male clients come in to locate their female counterparts (14, 16). Law enforcement agents also play a significant role in enhancing trade sex escapades by providing cover for sex workers after gratification in kind or cash. Some provide assistance and channels in which sex workers can reach out to clients in a difficult terrain (13). Some security agents also provide protective coverage while operating in clubs and brothels; while some security outfits allow them to operate under their watch (15). It is pertinent to note that sex workers will never cease to exist irrespective of the measures put in place by the government to eradicate them. The fact remains that without the male customers, sex workers would not be in business while interested men will always find a way to reach out to them (11), which pose enormous challenges in controlling the spread of SARS-CoV-2. If the activities of sex workers are not checked in the current war against the novel Coronavirus disease, there may be an adverse increase in community transmission resulting from defilement of social distancing between sex workers and clients. Government may find the situation uncontrollable due to their initial inaction of not checkmating sex worker's activities, which continued to provide services to several men and may result to recycling of SARS-CoV-2. As it stands, there is no research or finding that categorically linked sex working to transmission of SARS-CoV-2 to the best of our knowledge. SWAN (17) and Platt (18), suggest that social distancing plays a vital

role in transmitting SARS-COV-2 and as such, sex working should be avoided in the COVID-19 era; as there is no set rules for having sex with unknown person without close contacts. UNAIDS (19), reported that some female sex workers died of COVID-19 during lockdown in Ecuador while majority suffered untold hardship and neglect from government agencies in charge of palliatives. It is not certain if those who died acquired the virus before or during the lockdown order. Therefore, the present study may provide baseline information to which a similar project on sex workers may be surveyed using a cluster-based multi-site cross-sectional research design. In another development, which was reported in River State, Nigeria; two hotels were demolished by the State Government as the hotels were found to harbour sex workers who continued in sex businesses amid lockdown order. Media reports have it that sex working and other dubious activities were peaking at the hotels shut down by Rivers State Government (20), which are examples of numerous activities of sex workers across the country during a lockdown (21). Sex workers in different states have their mode of operation, which differs from one state to another due to cultural and religious beliefs (22). For example, the case of sex workers operating in the centre of the city in Rivers state compared to the way sex workers will operate in the Northern parts of Nigeria amid lockdown (15), thus explained how culture and region help to define the pattern of sex business in a country.

National Lockdown Policy in Preventing the Spread of SARS-CoV-2

Considering the limited time to act as the global crisis of COVID-19 deepens across the world with no visible effective vaccines or potential treatment in view. Government seeks to explore other viable measures to curb the wide spreading of SARS-CoV-2 infection. In order to save lives and prevent continuous ravaging effects of COVID-19 pandemic on global

economy and health system; the World Health Organization (WHO) on March 12, 2020 called for a comprehensive and inclusive strategy to preventing further spread of SARS-CoV-2 infections and minimising its deleterious impact on humans (23). Some of these measures include: social distancing, regular hand wash, use of personal protective equipment (PPE) and public enlightenment. Following these procedures, governments across the world ordered a national lock down by shutting all business activities, transportation and education as ultimate steps to stop the spread of the disease (23, 24, 25). Residents were asked to remain confined at home to avoid contacts with infected individual thereby reducing further spread of the virus. Markets and religious homes were affected particularly churches and mosques, which the government considered as a vibrant avenue for envisaging community transmission (24). However, it is observed in some parts of Nigeria where some residents flouted the government's lockdown directives aimed at curtailing further spreading of SARS-CoV-2 infection. Local borders were infiltrated by immigrants from neighbouring States, security agents were culpable, members of the society who felt they were above the law go around their daily businesses, including politicians who engage indiscriminately in political gatherings far above the prescribed number of twenty persons at a time, which is the rule in Edo State, Nigeria. Sex workers also go about their activities particularly in brothels thereby jettisoning the measures in containing the spread of the virus (21). All in all, a question may arise to whether the lockdown had a positive impact on the spread of COVID-19 or not. Going by increases in confirmed cases of SARS-CoV-2 in Nigeria (9) and the fact that many countries also experienced spikes in COVID-19 cases despite the lockdown; it can be said that lockdown has not yielded results positively. Hence, it is believed that the most valid sources of community transmission (political gatherings and sex trading) in the country are being neglected.

SARS-CoV-2 Community Transmission via Sex Workers

The report of NCDC on May 05, 2020 indicated that out of 1,950 confirmed cases of Covid-19 disease in Nigeria over 1000 cases cannot be traced to definite sources of infection and may have escalated to community transmission (4). "According to Down to Earth (DTE) health bulletin (26), several countries that reported fewer cases have declared community-based transmission". The affected countries are eight in number within the America's region, comprising fourteen records in Europe, one in Southeast Asia and six in Africa. A few of these countries reported less than 10,000 cases while some counted as less as 1,000 (26, 27). Community transmission of COVID-19 is declared when there is no clear source of origin of the infection in the community. At this stage, people do not know how they were exposed to the disease. Community transmission of COVID-19 calls for concern and aggressive measures to curb further spreading of the disease may be useful (26). Many factors are responsible for community transmission of SARS-CoV-2 in Nigeria, this include non-compliance to government directives, ignorance, improper medical waste disposal, illegal inter-state movement as well as political gatherings. However, sex workers activities may serve as major factor responsible for community transmission of COVID-19 as it involves full body contact long enough for the virus to be transmitted (17); and also serve as breeding ground for continuous transmission and re-infection including spreading. Many infected sex workers may not show symptoms thereby silently spreading the virus from one person to the other (18, 19). Likewise, asymptomatic patronisers of transactional sex workers pose a grievous risk to unsuspecting sex workers and the aftermath can be devastating to the immediate community. The job description of a sex worker (15) is such that social distancing cannot be guaranteed while going about their daily

ventures. On the other hand, in satisfying multiple customers, social distancing is completely ruled out. They engage in indiscriminate physical contacts with their clients in order to satisfy them, which in turn expose them to the risk of contracting and spreading the disease.

Sex Worker's Navigation Pathways Amidst Covid-19 Pandemic

According to Givatash (13), Sex work or transactional sex work (popularly known as Prostitution) is the practice of rewarded sex that does not require an emotional bond between the participating sexual partners. This encompasses many marginalised groups, diverse population, migrants, divorcee, single mothers, unfaithful partners etc. Although, prostitution in Nigeria is illegal yet, their activities are not regulated; most of which can be found in brothel, bars, clubs, joints etc. With the steady rise in the country's poverty and high level of unemployment, many female graduates now turn to sex work as avenue to earn money (11, 28). In the fight against COVID-19 pandemic, the federal government of Nigeria has announced social distancing and total lockdown as measures to curtail further spread of the disease, which have grounded activities of many sex workers in most parts of the country. Although the federal government announced relief measures for the poor and disadvantaged but the women in sex industry are not inclusive in this part of the world probably because they are rarely identifiable. The impact of the lockdown however, has continued to affect activities of the populace, rendering most people jobless. Private and government workers are instructed to work from home whilst some are entirely out of jobs with little disposable income, which have also put sex workers in desperate circumstances for survival. Sex workers face different forms of hardship apart from discrimination particularly at this time when COVID-19 pandemic is eroding the entire world. Some are struggling either with health status, mental health psychological

breakdown as well as depression (29). With the sudden economy recession caused by COVID-19 pandemic; increase in surveillance of people as disease vectors, government regulation and policing may have deterred many regular clients of sex workers from patronage. Many who are afraid to flout the federal rules of staying indoors shy away from their usual sex patronage; thereby creating more hardships for sex workers whose survival depends on clients. Many sex workers find the lockdown excruciating for survival and as such they derived other means to locate clients (29). Despite available information and government regulations, many sex workers did not stop working and have continued to render services to clients during lockdown because they have no other sources of income for survival thereby potentially exposing them and others to SARS-CoV-2 infection. According to Odigie (11), prior to lockdown order, a sex worker contacts an average of five to eight clients on a day in which patronage is low; this creates higher chances of contracting Coronavirus disease if this were applicable during lockdown. It is worthy to note that there is no better way of having sex with an asymptomatic carrier without full body contacts. Once a sex worker contracts the virus, she serves as a reservoir and could silently infect a community through sex trade interactions. We agree that sexual route has not been fully defined for SARS-CoV-2 (30) however; social distancing has been defiled completely as there must be skin contacts while operating a sexual transaction (17). In this act indiscriminate physical contact is ensued in order to satisfy clients, which creates exposure routes to the risk of contracting and spreading the disease.

Health Concerns and Burdens of Sex Working amidst Lockdown

Many sex workers reside in crowded environments purposefully where they attend to different customers. Activities of sex workers on the current COVID-19

pandemic have had severe impacts on the global community transmission of the virus thereby increasing the infected populations (31). The lockdown measure to further curtail spread of the virus has levelled a serious burden on the economy bringing an untold hardship on the citizens. The consequential effects of sex workers' escapades during the national lockdown and transaction of sex business in the society despite government directive may bring about an unending recycling and transmission of the virus in the community. It may result to sharp spikes in depression and anxiety, aside the risks of contracting and or spreading COVID-19 amongst health workers, and perhaps death due to irresistible hospitalization such as was observed in some countries (32). It is important to note that health workers will have to live with the reality of having so much infected persons to cater for at the same time. This may be quite burdensome and could be overwhelming as indiscriminate influx of COVID-19 patients could bring down the health worker's workforce being that many may also get infected and die. A case result has been reported in Italy where increased number of infected persons overwhelmed the Italian health facilities in the country leading to the deaths of some doctors, nurses, medical laboratory scientists, pharmacists and a host of others (32). In another scenario in which many health workers got infected with the deadly virus and are made to undergo self-isolation. The untold hardship further led to many health workers refraining from work for the fear of contracting the disease. Cases of suicide and attempt were reported in some quarters while others were fast becoming depressed as a result of not being able to comprehend the loss of a loved one (33). Some caregivers who are passionate with their patients entered into depression for being unable to save the patient from the glimpse of death (32, 34). As at 23rd of April 2020, the presidential task force on COVID-19 announced that 40 health workers have been infected with the virus when the country had about 873 confirmed cases while four deaths were

recorded (35). Conversely, as of 21 June 2020; Anadolu (36) reported that no fewer than 800 health workers across Nigeria have been infected comprising: Doctors, Nurses, Medical Laboratory Scientists, and other hospital staff that constitute the healthcare workforce in the country. As far as we know, there is neither a substantive information nor clear cut evidence on the exact figures attributed to each professional group that came down with COVID-19 in the health industry. Hence, all claims are collectively ascribed to the burden exerted on the healthcare workforce amidst lockdown; in which sex workers may play a vital role in recycling SARS-CoV-2 infection via person-to-person transmission through body contacts as against sexual intercourse (29). All these and many others constitute the demoralizing effects that may result from unchecked or total stoppage of sex working during lockdown and the health concerns partly cannot be overemphasized.

Conclusions and Recommendations

Despite government policies, measures and public enlightenments to curb further spread of SARS-CoV-2 infection in Nigeria; sex worker's escapades have continued to jettison this move. Nonetheless, their activities will continue to pose challenges on the national safety in curtailing the spread of SARS-CoV-2 and other infectious diseases if decisive measures are not put in place. Hence in the fight against COVID-19 pandemic, we recommend fumigation of existing brothels / sex homes, including screening to prevent possible spread from the circle; including public enlightenment on the need for men to shun womanizing at this time. Government agencies should particularly look in the direction of sex workers in order to win the war against COVID-19 across the globe. Therefore, the following measures in mitigating and combating activities of sex workers in the spread of SARS-CoV-2 include:

- Government should inaugurate special tax force that will monitor compliance of sex workers during national lock down
- Government should provide behavioral interventions, supportive legislation, policy and funding for sex workers
- Surveillance mechanisms and collation of data of sex workers in the country should be established to aide in contact tracing in outbreak of disease control
- Government should encourage community empowerment and creation of employment opportunities for women to deter them from prostitutions
- Creation of awareness to discourage and educate men from patronizing sex workers especially during disease outbreak

Statement on Competing Interest

The authors declare that there is no competing interest associated with this article.

References

1. Henrik S, Cécile TK, Noémie L, Noémie C, Paolo B. 'Estimating The Burden of SARS-CoV-2 in France'. *pasteur-0254818*, 2020; available at: <https://hal-pasteur.archives-ouvertes.fr/pasteur-02548181>(retrieved: May 01, 2020).
2. World Health Organization (WHO). 'WHO Director-General's opening remarks at the media briefing on COVID-19, 2020; available at: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> (retrieved: May 08, 2020).

3. World Health Organisation (WHO). Rolling Updates on Coronavirus Disease (COVID-19). Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019?gclid> (retrieved: June 21, 2020).
4. Nigeria Centre For Disease Control (NCDC). Novel-coronavirus-2019' 2020; available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019?gclid=EAIaIQobChMIqNmA2eCi6QIVwrvVCh3UGge5EAAYASAAEgIpmPD_BwE (retrieved: June 25, 2020).
5. COVID-19 Mapping Laboratory (CML). COVID-19 Update in Nigeria as at June 25, 2020. Department of Geography, University of Ibadan, Nigeria
6. Xian P, Xin X, Li Y, Lei C, Xuedong Z, Biao R. 'Transmission routes of 2019-nCoV and controls in dental practice' *Intl J Oral Sci.* 2020; 12(9) available at: <https://www.nature.com/articles/s41368-020-0075-9> (retrieved: May 08, 2020).
7. Chen X, Tang Y, Mo Y, Li S, Lin D, Yang Z. et al. A diagnostic model for coronavirus disease 2019 (COVID-19) based on radiological semantic and clinical features: a multi-center study. *Eur Radiol* 2020; available: <https://doi.org/10.1007/s00330-020-06829-2> (retrieved: April 12, 2020).
8. European Centre for Disease Prevention and Control (ECDC) 'Q & A on Covid-19' 2020; available at: <https://www.ecdc.europa.eu/en/cov>

- id-19/questions-answers (retrieved: May 02, 2020).
9. Nigeria Centre for Disease Control (NCDC). 'COVID-19 NIGERIA' 2020; available at: <https://covid19.ncdc.gov.ng/> (retrieved: May 10, 2020).
 10. Banjot K. 'COVID-19: Nearly 30,000 cases in India but no community Transmission, says WHO'. Classification based solely on country's 'self-reporting', says UN health body. Several with fewer cases have declared community spread. 2020. Available At: <https://www.downtoearth.org.in/news/health/covid-19-nearly-30-000-cases-in-india-but-no-community-transmission-says-who-70733> (retrieved: May 01, 2020).
 11. Odigie BE. Role of Histology-Medical Laboratory Scientists in Maintaining the Sexual Gates of Female Sex Workers in Nigeria. *Centre-point J* 2017; 23(1): 41-52.
 12. Izugbara CO. Ashawo suppose shine her eyes': Female sex workers and sex work risks in Nigeria. *Health Risk & Society*, 2005; 7(2): 141-159. DOI: 10.1080/13698570500108685
 13. Givetash L. "Some Sex Workers Choose Industry Due to Benefits of Occupation: Study". *The Globe and Mail*. Toronto: Phillip Crawley. 2017. Available at: <https://www.theglobeandmail.com/news/british-columbia/some-sex-workers-choose-industry-due-to-benefits-of-occupation-study/article33965010/> (retrieved: May 02, 2020).
 14. Odigie BE, Achukwu PU, Bello ME. Medical Engineering and Informatics Implementation for Cervical Lesions Screening of Commercial Sex Workers in Rural Communities. *IJMEI* 2018; 10(3):1-18. Doi.org/10.1504/IJMEI.2018.095084
 15. Chukwuedozie UP, Kalu UU, Chidi MS. Socio-Economic Effect of Commercial Sex Work in Abuja Suburb: A Survey of Selected Brothels in Mararaba, Nigeria. *Soc. & Crimonol* 2019; 7:200. Doi:10.35248/2375-4435.19.7.200
 16. Quartz Africa. 'Ordinary Nigerians are filling the country's major social welfare gaps amid coronavirus'. *Social Insecurity* 2020; available at: <https://qz.com/africa/1843839/nigerias-coronavirus-lockdown-is-hitting-poor-families-hard/> (retrieved: May 06, 2020).
 17. Sex Workers Rights Advocacy Network (SWAN). SWAN statement on COVID-19 and demands of sex workers. Sex Workers Rights Advocacy Network, 2020. Available at: <http://swannet.org/en/content/swan-statement-covid-19-and-demands-sex-workers> (Retrieved: June 21, 2020).
 18. Platt L, Elmes J, Stevenson L, Holt V, Rolles S, Stuart, R. Sex workers must not be forgotten in the COVID-19 response. *Lancet*, 2020 available at: [https://doi.org/10.1016/S0140-6736\(20\)31033-3](https://doi.org/10.1016/S0140-6736(20)31033-3) (Retrieved: June 21, 2020).
 19. United Nations Programme on HIV and AIDS (UNAIDS). COVID-19 responses must uphold and protect the human rights of sex workers.

- Geneva, Switzerland: UNAIDS, 2020. Available at: https://www.unaids.org/en/resources/presscentre/featurestories/2020/april/20200424_sex-work (retrieved: June 22, 2020).
20. ANA Reporters. Nigerian Governor Orders Demolition of Two Hotels for Breaking Lockdown Rules. African News Agency, May 11, 2020. Available at: <https://www.iol.co.za/news/africa/nigerian-governor-orders-demolition-of-two-hotels-for-breaking-lockdown-rules-47805042> (retrieved: June 08, 2020).
21. ANA Reporters. Lagos Sex Workers Still Operate Amidst Coronavirus And Lockdown. African News Agency, April 24, 2020. Available at: <https://www.africannewsagency.com/news-politics/Lagos-sex-workers-still-operate-amidst-coronavirus-and-lockdown-24717289> (retrieved: June 08, 2020).
22. Menon S, Broeck D, Ross R, Ogbé E, Mabeya H. Multiple HPV infections in female sex workers in Western Kenya: implications for prophylactic vaccines within this sub population. *Infect Agents & Cancer* 2017; 12:2 DOI 10.1186/s13027-016-0114-5
23. Mandell BF. Covid-19 Curbside Consults at www.CCJM.org. *Cleveland Clinic J. Med.* 2020; 87(5):255-256.
24. Fasina FO. Novel coronavirus (2019-nCoV) update: What we know and what is unknown. *Asian Pac J Trop Med* 2020; 13(3): 97-98.doi: 10.4103/1995-7645.277795
25. Gilbert M, Pullano G, Pinotti F, Valdano E, Poletto C, Boëlle P et al. Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study. *Lancet* 2020; 395: 871-877. DOI: [https://doi.org/10.1016/S0140-6736\(20\)30411-6](https://doi.org/10.1016/S0140-6736(20)30411-6).
26. Down To Earth. COVID-19: What did India gain in nationwide lockdown? *Health Bulletin*, 2020 available at: <https://www.downtoearth.org.in/coronavirus> (cited: May 05, 2020)
27. Sukhada T. 'India's sex workers fight for survival amid corona virus lockdown' Overnight loss of income from core clientele plunges the marginalised group into depths of anxiety and deprivation. 2020; available At: <https://www.aljazeera.com/news/2020/04/india-sex-workers-fight-survival-coronavirus-lockdown-200412073813464.html> (retrieved: May 02, 2020).
28. Odigie BE, Okungbowa MA. Life Style as a risk factor of human papillomavirus co-infection with *Trichomonas vaginalis* in female sex workers. *Universa Medicina*, 2019; 38(1): 17-24. doi.org/10.18051/UnivMed.2019.v38.17-24
29. United Nations Programme on HIV and AIDS - (UNAIDS). Sex workers adapting to COVID-19. 2020; available at: https://www.unaids.org/en/resources/presscentre/featurestories/2020/april/20200421_indonesia (retrieved: May 09, 2020).

30. Patrì A, Gallo L, Guarino M, Fabbrocini, G. Sexual transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): A new possible route of infection? *J Am Acad Dermatol.* 2020. Doi: 10.1016/j.jaad.2020.03.098
31. World Health Organisation (WHO). 'Sex Work' 2020; available at: https://www.who.int/hiv/topics/sex_work/about/en/ (retrieved on: May 08, 2020).
32. Rajgor DD, Lee MH, Archuleta S, Quek SC. "The many estimates of the COVID-19 case fatality rate," *The Lancet Infect. Dis.* 2020; available at: [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30244-9/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30244-9/fulltext) (retrieved: May 06, 2020).
33. Aaron R. "Italian nurse with coronavirus commits suicide fearing to infect others," *Jerusalem Post.* 2020; available at: <https://www.jpost.com/international/italian-nurse-with-coronavirus-commits-suicide-fearing-to-infect-others-622320> (cited: May 02, 2020).
34. World Health Organisation (WHO). Coronavirus disease (Covid-19) pandemic: outbreak situation. 2020; available: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> (retrieved: May 09, 2020).
35. All Africa. Nigeria: Coronavirus - Nigeria Faces Dire Consequences As Casualties Among Health Workers Increase. June 02, 2020; available at: <https://allafrica.com/stories/202004300102.html> (retrieved: June 20, 2020).
36. Anadolu Agency. Nigeria: 800 health workers infected with COVID-19. May 19, 2020; Available at: <https://www.aa.com.tr/en/africa/nigeria-800-health-workers-infected-with-covid-19/1863747> (retrieved: June 22, 2020).