RESEARCH ARTICLE

Associations between sexual orientation, financial security and relationships with family and peers during the COVID-19 pandemic in Nigeria [version 1; peer review: awaiting peer review]

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Abstract

Background: This study aimed to determine whether factors associated with financial insecurity during the COVID-19 pandemic were associated with worsening relationships with family, peers and friends of sexual minorities living in Nigeria.

Methods: Data were collected using an online survey conducted from 29th June to 31st December 2020. The outcome variable was the quality of relationship with family, friends and peers during the COVID-19 pandemic. The explanatory variables were the sexual orientation (lesbian, gay, bisexual, heterosexual), COVID-19 status, and financial security (job loss or reduced/lost wages because of the COVID-19 pandemic). Multilevel logistic regression analysis models with robust estimation were built and used to assess the association between the outcome and explanatory variables. The models were adjusted for sociodemographic profile (age, sex at birth, education status).

Results: Being a sexual minority was associated with higher odds of worsened relationship with family (AOR: 1.49) and friends and peers (AOR: 2.38) during the pandemic. Having COVID-19 symptoms but not getting tested was significantly associated with higher odds of reporting worsening of the relationship with family (AOR: 1.69) and history of job loss (AOR: 1.68), while having formal education ($p < 0.05$) was significantly associated with lower odds of reporting worsening of the relationship with family. The factors significantly associated with higher odds of reporting worsened relationship with friends and peers were testing positive for COVID-19 (AOR: 1.60), reduced wages (AOR: 1.24), and being older (AOR: 1.01). Attaining a college/university education was significantly associated with lower odds of worsened relationship with friends and peers (AOR: 0.31).

Conclusions: The COVID-19 pandemic may increase the risk of negative disruptions in the relationships with family, friends and peers, especially for sexual minorities. National COVID-19 response programs should include plans to support those who face social disruption in managing the crisis.

Keywords

LGBT, Nigeria; COVID-19, Financial security, Mental Health, Quality of Relationships

Any reports and responses or comments on the article can be found at the end of the article.

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Introduction

Sexual minorities are individuals who identify as gay, lesbian, bisexual, or have attractions to people of the same gender. From a traditional psychological perspective, heterosexuality has long been considered “normal” and legitimate, and other sexual orientations as deviant or pathological¹. The Diagnostic and Statistical Manual of Mental Disorders (DSM) removed references of homosexuality as a mental disorder or disturbance only as recently as 1980. Beliefs that hold heterosexuality as a norm persists among some individuals and communities, resulting in stigmatization and discriminatory treatment of people with different sexual orientations². In heterosexist societies, sexual minorities may lose privileges typically enjoyed by heterosexuals (e.g., marriage, adoption), face the dangers of becoming the target of hostility and derision, living in fear, potential rejection from loved ones and the community, loss of employment, and even violence³.

Nigeria has created many institutional structures that bar sexual minorities from enjoying the same rights and privileges as heterosexuals. The Same-Sex Marriage (Prohibition) bill (SSMPA) was passed into law on January 7, 2014⁴. The law criminalizes lesbian, gay, bisexual, and transgender (LGBT) persons based on sexual orientation and gender identity. It forbids any cohabitation between same-sex sexual partners and bans any “public show of same-sex amorous relationship.” Those who “register, operate or participate in gay clubs, societies and organizations” or “support” the activities of such organizations are subject to a 10-year prison sentence. The law builds on colonial-era criminal and penal codes that outlawed sexual acts between members of the same-sex. Religious beliefs tend to fuel homophobia⁵ in Nigeria, resulting in the ostracization of sexual minorities from families and peers⁶.

In spaces where sexual minorities already experience the daily stresses of navigating their existence within the context of homophobic environments, the COVID-19 pandemic introduced a new threat to health and wellbeing. Compared to heterosexuals, sexual minorities have higher self-reported rates of health conditions such as asthma, cancer, heart disease, chronic obstructive pulmonary disease, hypertension, kidney disease, obesity, smoking, and stroke, that increase the risk of developing severe COVID-19⁷. Sexual minorities also have greater risks of anxiety, depression, suicidal tendency, substance use disorder and sleep disorder when compared with heterosexual individuals, pre-pandemic^{8–12}. Sexual minorities also encounter discrimination or stigmatization that increases their vulnerability to illness, and limits their access to health care, ability to have economic security, and supportive relationships¹². The pandemic has generally raised the risk for these mental health concerns and other challenges across the broader population^{13–17}. However, specifically among sexual minorities, there is evidence suggesting many are facing food insecurity, job loss, and reduced wages, as well as elevated rates of depression, loneliness, and lack of social support during the COVID-19 pandemic^{15,18}.

Poor mental health and loss of income can cause disruptions to social support networks^{19,20}. In addition to facing multiple

mental health challenges and financial insecurity^{21,22}, many sexual minorities may have poor relationships with family and few supportive peers and friends²³. There is evidence that the COVID-19 pandemic has caused disruptions to social relationships²⁴, which may occur through mental health challenges and financial insecurity. Pandemic-related trauma may intersect with existing mental health, minority stress, substance use challenges, and dimensions of social inequality faced by sexual minorities, thereby compounding their risks for COVID-19-related mental health problems¹⁵. However, there is very little known about the impact of the COVID-19 pandemic and its associated mental health, financial challenges and social insecurity on the health and wellbeing of sexual minorities in communities like Nigeria, where the negative impact of homophobia is high.

The study aimed to determine whether factors that cause financial insecurity during the COVID-19 pandemic such as job loss or loss of wages is associated with worsening relationships with family, peers, and friends. We also explored if sexual minorities had worsening relationships with family, peers, and friends during the COVID-19 pandemic. We hypothesized that sexual minorities, respondents who lost their jobs and those who had reduced wages during the COVID-19 pandemic will have worsening relationships with family, peers, and friends.

Methods

Data were extracted from a global cross-sectional study conducted using an online survey, from 29th June to 31st December 2020. The study assessed the impact of COVID-19 on the health and wellness of adults during the COVID-19 pandemic. Study participants were adults above 18 years of age, who were able to read, had access to the internet and consented to participate. A prior report had described the study methodology²⁵. The questionnaire was initially developed for a study that targeted a specific population in the United States and was consequently adapted for a global audience²⁶. For the current study, only respondents who indicated their country of residence as Nigeria were included in these analyses.

Study procedure

The global survey was conducted using the online survey platform SurveyMonkey. Restrictions were applied to the settings so that each participant could only take the survey once. Participants were able to edit their answers freely until they chose to submit. Email addresses were not collected to ensure that responses were anonymous. Data collection was done by invited seven collaborators in Nigeria, who responded to an open invitation on ResearchGate to collaborate on the study. These collaborators distributed the survey links in Nigeria. Interested collaborators received links to the survey in English. These links were posted on social media groups (Facebook, Twitter, and Instagram) and sent via WhatsApp or email to eligible participants in the collaborators’ networks. These participants were further asked to disseminate the links to those in their networks using snowball sampling. The aim was to recruit a convenient sample of 5,000 respondents. The total sample size recruited comprised 4,471 (89.4%) respondents.

The survey was preceded by an introduction about the study team, study objectives and time needed to complete the questionnaire. This was followed by a consent form assuring participants of the confidentiality of their responses and emphasizing that their participation was voluntary. Only participants who consented could proceed to the survey. The content validity of the 64 questions survey tool was assessed by 17 experts in public health and medicine working in universities, who were identified and recruited by the six core study team leads²⁷. The overall content validity index of the survey was 0.83. The responses collected for content validation were excluded from the final analysis.

Outcome variable

Quality of relationship with family and peers during the COVID-19 pandemic. Family and peer relationships were assessed by a question asking whether the quality of the participant's relationship with family members and peers changed during the pandemic, with responses ranging from: becoming a lot worse, a little worse, remained the same, became a little better or a lot better. The responses on family and peer relationships were dichotomized for analysis into improved/remaining unchanged by combining three responses (remained the same, became a little better or became a lot better) and not improved (combining became a lot worse or became a little worse). The family included parents, siblings, spouse, partner, children, and other members in the family. The question was adopted from the Coronavirus Health Impact Survey (CRISIS) Adult Self-Report Baseline questionnaire²⁸. The two questions on isolation rating and perception of the impact of the pandemic on the sense of isolation were internally developed. The Cronbach alpha score for this was 0.817.

Explanatory variables

Sexual orientation. Participants were asked to self-identify as a sexual minority (lesbian, gay transgender, bisexual) or heterosexual. Sexual minorities were further divided into homosexuals (lesbians and gays) and bisexuals for data analysis purposes. People were also able to abstain from responding about their sexual orientation. All persons who did not identify their sexual orientation (N=765) were excluded from the data analysis.

COVID-19 status. Study participants were asked to indicate if they had ever tested positive to COVID-19 or if they suspected they had COVID-19 but did not test. The response was either a 'yes' or a 'no'.

Financial security. Respondents were asked if they experienced a job loss or if they had reduced/lost wages because of the COVID-19 pandemic (yes/no respectively). The questions were adopted from the Multi-Center AIDS Cohort Study^{29,30}.

Confounders

Socio-demographic profile. Data were collected on participants age at last birthday, sex at birth, the highest level of education attained (none, primary, secondary, college/university), and whether the participant lived alone or with other people (yes/no).

Data analysis

Descriptive statistics for all the variables were calculated as means and standard deviations or frequencies and percentages. Three multilevel logistic regression analysis models with robust estimation were built and used to assess the associations between the outcome and explanatory variables. The variables were firstly included one at a time, and then simultaneously in an adjusted model. The first level consisted of the socio-demographic variables (age, highest level of education and sexual orientation); the second level had the COVID-19 status related parameters added, while at the third level, the measures of financial security status of the respondents (job loss and reduced or lost wages) were considered. Sociodemographic factors, COVID-19 status and the economic impact status of respondents were included as fixed effect factors. Odds ratio (OR) and 95% confidence intervals (CI) were calculated. IBM SPSS for Windows version 22.0 (IBM Corporation 2013) was used for statistical analysis. Significance was set at 5%.

Ethical considerations

Ethics approval and consent to participate. Ethics approval for the study was obtained from the Human Research Ethics Committee at the Institute of Public Health of the Obafemi Awolowo University Ile-Ife, Nigeria (HREC No: IPHOAU/12/1557). Written informed consent was obtained from participants after they were duly informed about the objectives of the study, risks and benefits, voluntary nature of study participation, and freedom to withdraw from the study at any time. The participants ticked a checkbox to indicate their interest in study participation. Those not interested in study participation were thanked for their interest in the study and exited the survey. No identifier was collected for each respondent.

Results

There were 3,706 study participants from Nigeria with a mean age (standard deviation) of 37.42 (11.66) years³¹. Of these, there were 1,919 (51.8%) non-males, 3,259 (87.9%) heterosexuals, 3,051 (82.3%) had college or university education, 91 (2.5%) tested positive for COVID-19 and 388 (10.5%) had symptoms of COVID-19 without getting tested. Further, 280 (7.6%) participants lost their jobs due to COVID-19 and 1,015 (27.4%) had reduced wages. In addition, 502 (13.5%) reported a worsening of the quality of relationship with family during the COVID-19 pandemic, and 1,101 (29.7%) reported a worsening of their relationship with friends/peers during the pandemic (see [Table 1](#)).

[Table 2](#) shows that the factors significantly associated with higher odds of reporting worsening of the relationship with family were: being a sexual minority (AOR: 1.49; $p=0.003$); having COVID-19 symptoms and not getting tested (AOR: 1.69; $p<0.001$); and a history of job loss (AOR: 1.68; $p=0.001$). The factor significantly associated with lower odds of reporting worsening of the relationship with family was having a formal education ($p<0.05$).

[Table 3](#) shows that the factors significantly associated with higher odds of reporting worsening of the relationship with

Table 1. Socio-demographic variables, COVID-19 status, and financial security-related factors associated with self-reported worsening in relationships (N=3706).

Variables	Total N=3706	Self-reported worsening in relationships					
		Family relationships		p value	Friends / peer relationships		p value
		Worsening N=502	Not worsening N=3204		Worsening N=1101	No worsening N=2605	
Age±SD	37.41 ±11.66	36.74 ±10.89	37.52 ±11.78	0.163	37.70 ±11.75	37.30 ±11.63	0.336
Sex							
Male	1786 (48.2)	251 (14.1)	1535 (85.9)	0.383	521 (29.2)	1265 (70.8)	0.490
Not male	1920 (51.8)	251 (13.1)	1669 (86.9)		580 (30.2)	1340 (69.8)	
Sexual orientation							
Heterosexual	3259 (87.9)	417 (12.8)	2842 (87.2)	<1.001	882 (27.1)	2377 (72.9)	<0.001
Homosexual (lesbian/gay)	52 1.4	8 (15.4)	44 (84.6)		22 (42.3)	30 (57.7)	
Bisexual	311 (8.4)	69 (22.2)	242 (77.8)		179 (57.6)	132 (42.4)	
Others	84 (2.3)	8 (9.5)	76 (90.5)		18 (21.4)	66 (78.6)	
Educational status							
No formal education	30 (0.8)	14 (46.7)	16 (53.3)	<0.001	17 (56.7)	13 (43.3)	<0.001
Primary	71 (1.9)	19 (26.8)	52 (73.2)		43 (60.6)	28 (39.4)	
Secondary	554 (14.9)	86 (15.5)	468 (84.5)		213 (38.4)	341 (61.6)	
College/University	3051 (82.3)	383 (12.6)	2668 (87.4)		828 (27.1)	2223 (72.9)	
Tested positive for COVID-19							
No	3615 (97.5)	487 (13.5)	3128 (86.5)	0.407	1065 (29.5)	2550 (70.5)	0.037
Yes	91 (2.5)	15 (16.5)	76 (83.5)		36 (39.6)	55 (60.4)	
Had COVID-19 symptoms but not tested							
No	3318 (89.5)	423 (12.7)	2895 (87.3)	<0.001	979 (29.5)	2339 (70.5)	0.429
Yes	388 (10.5)	79 (20.4)	309 (79.6)		122 (31.4)	266 (68.6)	
Job loss							
No	3426 (92.4)	444 (13.0)	2982 (87.0)	<0.001	1004 (29.3)	2422 (70.7)	0.060
Yes	280 (7.6)	58 (20.7)	222 (79.3)		97 (34.6)	183 (65.4)	
Lost or had reduced wages							
No	2691 (72.6)	352 (13.1)	2339 (86.9)	0.178	773 (28.7)	1918 (71.3)	0.033
Yes	1015 (27.4)	150 (14.8)	865 (85.2)		328 (32.3)	687 (67.7)	

Table 2. Multilevel binary logistic regression analysis showing factors associated with self-reported worsening of the relationship with family(N=3706).

Variable	Model 1		Model 2		Model 3	
	AOR (95% CI)	p value	AOR (95% CI)	p value	AOR (95% CI)	p value
Age	0.99 (0.99-1.00)	0.126	0.99 (0.99-1.00)	0.280	0.99 (0.98-1.01)	0.550
Sexual orientation (ref: heterosexual)	1.51 (1.16-1.97)	0.002	1.49 (1.14-1.94)	0.003	1.49 (1.14-1.95)	0.003
Education						
No formal education	1.00	-	1.00	-	1.00	-
Primary (ref: no formal education)	0.37 (0.15-0.91)	0.031	0.38 (0.16-0.94)	0.036	0.40 (0.16-0.98)	0.045
Secondary (ref: no formal education)	0.18 (0.09-0.39)	<0.001	0.19 (0.09-0.40)	<0.001	0.19 (0.09-0.42)	<0.001
College/ University (ref: no formal education)	0.16 (0.08-0.33)	<0.001	0.16 (0.08-0.33)	<0.001	0.16 (0.08-0.35)	<0.001
Covid-19 positive (ref: No)	-	-	1.15 (0.64-2.04)	0.644	1.14 (0.64-2.04)	0.649
Covid-19 symptoms not tested (ref: No)	-	-	1.71 (1.30-2.25)	<0.001	1.69 (1.28-2.22)	<0.001
Job loss (ref: No)	-	-	-	-	1.68 (1.23-2.31)	0.001
Reduced wages (ref: No)	-	-	-	-	1.17 (0.94-1.44)	0.153
R squared	0.021	-	0.028	-	0.033	-
Hosmer and Lemeshow	7.95	0.438	4.69	0.790	13.43	0.098
Omnibus test of model coefficients	43.20	<0.001	57.70	<0.001	68.59	<0.001

peers and friends were: being sexual minority (AOR: 2.38; $p<0.001$); having a positive COVID-19 test result (AOR: 1.60; $p=0.036$); having reduced wages (AOR: 1.24; $p=0.009$); and being older (AOR: 1.01; $p=0.050$). The only factor significantly associated with lower odds of reporting worsening of the relationship with peers and friends was attaining a college/university educational level (AOR: 0.31; $p=0.002$).

A significantly greater portion of respondents who identified as sexual minorities ($p<0.001$) and had no formal education ($p<0.001$) reported worsening in their relationship with family and with friends/peers during the pandemic. In addition, a significantly higher number of respondents who had COVID-19 symptoms but did not test ($p<0.001$) and who lost their jobs ($p<0.001$) reported a worsening of their relationship with the family. More respondents who tested positive for COVID-19 ($p=0.037$) and who lost or had reduced wages ($p=0.033$) reported a worsening of their relationship with friends/peers during the pandemic.

Discussion

The study findings indicated that sexual minorities in Nigeria experienced a negative impact of the COVID-19 pandemic on relationships with family, peers and friends, even after accounting for other factors. In addition, those who had COVID-19 symptoms and did not get tested had a worsened relationship with family, but those who were diagnosed with COVID-19 had worsened relationships with friends and peers but not with family. A history of job loss worsened the relationship with family while reduced wages worsened the relationships with peers and friends. The study results supported our hypothesis that sexual minorities, persons who lost their jobs and those who had reduced wages during the COVID-19 pandemic had worsened relationships with family, peers and friends.

One of the strengths of the study is the large sample size of which a fair proportion (12.1%) were sexual minorities. This may actually be underreported as respondents in Nigeria may be hesitant to disclose their sexual minority status. It is also the

Table 3. Multilevel binary logistic regression analysis showing factors associated with self-reported worsening of the relationship with peers and friends (N=3706).

VARIABLE	Model 1		Model 2		Model 3	
	AOR (95% CI)	p value	AOR (95% CI)	p value	AOR (95% CI)	p value
Age	1.01 (0.99-1.01)	0.112	1.01 (0.99-1.01)	0.106	1.01 (1.00-1.01)	0.050
Sexual orientation (ref: heterosexual)	2.35 (1.91-2.89)	<0.001	2.34 (1.91-2.88)	<0.001	2.38 (1.93-2.92)	<0.001
Education						
No formal education	1.00	-	1.00	-	1.00	-
Primary (ref: no formal education)	1.03 (0.43-2.48)	0.944	1.03 (0.43-2.48)	0.943	1.07 (0.45-2.58)	0.879
Secondary (ref: no formal education)	0.47 (0.22-0.99)	0.047	0.47 (0.22-0.99)	0.049	0.49 (0.23-1.05)	0.065
College/ University (ref: no formal education)	0.30 (0.14-0.62)	0.001	0.30 (0.14-0.62)	0.001	0.31 (0.15-0.66)	0.002
Tested COVID-19 positive (ref: No)	-	-	1.59 (1.02-2.45)	0.039	1.60 (1.03-2.48)	0.036
COVID-19 symptoms not tested (ref: No)	-	-	1.08 (0.86-1.37)	0.506	1.07 (0.85-1.65)	0.571
Job loss (ref: No)	-	-	-	-	1.29 (0.99-1.68)	0.065
Reduced wages (ref: No)	-	-	-	-	1.24 (1.06-1.45)	0.009
R squared	0.051	-	0.053	-	0.056	-
Hosmer and Lemeshow	9.08	0.336	6.47	0.595	2.99	0.935
Omnibus test of model coefficients	135.47	<0.001	140.34	<0.001	149.62	<0.001

first empirical study to highlight the impact of the COVID-19 pandemic on the social lives of sexual minorities in any country in Africa. The study also used validated measures. A limitation is that this was a cross-sectional study, so we cannot deduce the directions of the associations established nor can we deduce a cause-effect relationship. The data was collected at a specific point in time during the pandemic, and thus we are unable to determine if there were specific events at any point in time that affected the observations reported, which may also have changed with time and therefore caused a change in the outcomes observed. Nonetheless, study findings point to challenges experienced by sexual minorities.

First, we observed a worsening relationship with family, peers and friends of sexual minorities during the COVID-19 pandemic. Santos *et al.*³² earlier reported less connection with friends during the pandemic. The increase in mental health challenges faced by sexual minorities during the pandemic^{33,34} may also cause strains with family and friends^{15,34}. The stay-at-home

orders have also increased the experience of violence by sexual minorities, especially those that are not able to access peer support groups³⁵. Sexual minorities are also at an increased risk of job loss because of their over-representation in the non-essential economic sector, which was worse hit by the pandemic^{36,37}. We found job loss to be a factor associated with worsening family relationships in this study. Additionally, sexual minorities are at increased risk for losing jobs because they also have lower educational attainment³⁸, a factor significantly associated with worsening relationships with family, peers and friends in this study. This triangulation of evidence suggests that sexual minorities in Nigeria may be disproportionately represented in the 100 million people who may have been thrown back into extreme poverty because of the direct and indirect effects of COVID-19³⁹.

The study findings have implications for sexual minorities in a country like Nigeria with unfavourable laws, culture and social environment⁴⁰ for sexual minorities, leaving them at risk of

being left out of government-led humanitarian responses and services during the pandemic. Sexual minorities may also feel reluctant to access services out of concern of being arrested. A parallel is reflected in the reluctance of sexual minorities in Nigeria to access life-saving HIV treatment because of the same concerns⁴¹. The possibility of such an impasse makes it crucial that external sources that have provided support for sexual minorities in the country step up once again to address a potential gap in the national COVID-19 response. Family, friends, and peers create social capital that improves individuals' resilience and mental health to cope with the negative impact of COVID-19^{42,43}. When relationships with family, peers and friends worsen, it takes a negative toll on health, quality of life, and shortens life spans⁴⁴. It is important that during the pandemic, sexual minorities are supported.

Second, we observed that respondents who had COVID-19 symptoms and did not get tested had a worsening relationship with family, while those who were diagnosed with COVID-19 did not report a significant worsening of their relationship with family but a worsening of their relationship with peers and friends. The observed results may reflect the different ways each group takes precautionary actions to protect themselves from being infected. Family members may feel concerned that persons who show symptoms of COVID-19 but did not take a test were unduly increasing their risk for infection and thus, may choose to take actions that can worsen the relationship. Peers and friends who are less likely to observe these symptoms are less likely to react. On the other hand, when the individual tests positive and needs to self-isolate or quarantine, peers and friends may choose to stay away, while family members are thrust into a caregiving role. A concern is a possible risk for stigmatization and discrimination from peers and friends of those who tested positive for COVID-19⁴⁵. Though the study did not explore reasons for worsening relationships with family, peers and friends, the possibility of COVID-19-related stigma from family, peers and friends exists and is something national COVID-19 response programs need to investigate and prevent.

Third, we observed that a history of job loss worsened relationships with family. Involuntary job loss causes a decline in the mental health of women spouses⁴⁶ and increases the risk for divorce^{46–48}. The impact may be different if the person who lost the job is a woman, if there is access to social support during the pandemic, if compensation is received for the loss of employment, or if there is the opportunity for a new job⁴⁹. Though we did not study these variables, the study findings are still of importance for families in Nigeria as the main job holder

in many homes are the men⁵⁰, and the traditional extended family support systems for many families are being eroded by globalisation and new family values⁵¹. The finding that having reduced wages worsened relationships with peers and friends suggests that those experiencing job loss may not have access to social support from peers and friends. It is therefore important for families to access social safety nets during the COVID-19 pandemic to reduce the possible detrimental effect that job loss during the pandemic could create.

Conclusions

The COVID-19 pandemic may increase the risk for negative disruptions in relationships between family, peers and friends; especially for those who test positive for COVID-19, who have COVID-19 symptoms and those who lost their jobs, had reduced wages, and belong to sexual minorities. Safety nets are needed for these populations to prevent disruptions of their social support, and loss of social capital needed to build resilience to cope with the potential negative impacts of the pandemic. It is proposed that national COVID-19 response programs should include prevention plans and support those who face social disruption in managing the crisis that may ensue.

Data availability

Underlying data

Figshare: Supplementary file for manuscript: Associations between sexual orientation, financial security and relationships with family and peers during the COVID-19 pandemic in Nigeria, <https://doi.org/10.6084/m9.figshare.16530678.v2>³¹

This project contains the following underlying data:

- Sexual minority and COVID data set.xlsx

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Abbreviations

AOR	Adjusted Odds Ratio
CI	Confidence Interval
COVID-19	Corona Virus Infectious Disease - 2019

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