Gender Differentials in Access to Medical Services During COVID-19 Lockdown: Insights from Nigeria

Ololade G. Adewole
and
Kehinde O. Omotoso

***Working Paper* IDRC-OXFAM-004**

AFRICAN ECONOMIC RESEARCH CONSORTIUM
CONSORTIUM POUR LA RECHERCHE ÉCONOMIQUE EN AFRIQUE

Bringing Rigour and Evidence to Economic Policy Making in Africa

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By

Ololade G. Adewole
National Centre for Technology Management (NACETEM)
Obafemi Awolowo University, Ile-Ife, Nigeria

and

Kehinde O. Omotoso
National Centre for Technology Management (NACETEM)
Obafemi Awolowo University, Ile-Ife, Nigeria

AERC Working Paper IDRC-OXFAM-004
African Economic Research Consortium, Nairobi
October 2022

THIS RESEARCH STUDY was supported by a grant from the African Economic Research Consortium. The findings, opinions and recommendations are those of the author, however, and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat.

Published by: The African Economic Research Consortium
P.O. Box 62882 - City Square
Nairobi 00200, Kenya

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List of abbreviations and acronyms

AIDS	Acquired Immune Deficiency Syndrome
ATT	Average Treatment Effects on the Treated
CIA	Conditional Independence Assumption
COVID-19	Coronavirus Disease 2019
FGDs	Focus Group Discussions
FP	Family Planning
FPC	Family Planning and Contraceptives
HIV	Human Immunodeficiency Virus
IDIs	In-Depth Interviews
IPPF	International Planned Parenthood Federation
NLPS	National Longitudinal Phone Survey
OECD	Organisation for Economic Co-operation and Development
PERS	Personal Emergency Response Services
PSM	Propensity Score Matching
RTIs	Reproductive Tract Infections
SRH	Sexual and Reproductive Health
STIs	Sexually Transmitted Infections
TBAs	Traditional Birth Attendants
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

Abstract

Nigeria, like most countries of the world, implemented a lockdown policy during the COVID-19 pandemic, restricting all sorts of movements except for essential services and functions as a measure to contain the virus. Access to medical services is an important component of good healthcare systems, and with gender inequitable access to medical services, improving the health outcome of the population is not likely to be achieved. This study analyses gender differentials in access to medical services during the COVID-19 lockdown in Nigeria, using both descriptive and inferential analytical techniques. Results show that adult health services were the most needed medical services, and females needed these services slightly more than their male counterparts. However, access to these services was greater for males than for females. This same pattern is also observed for child health services. Further analysis shows that females are less likely to access adult health services than their male counterparts. Employment gap contributes about 79% to the gender differential in access to adult health services. Moreover, differences between males and females in the Northwest zone also account for the bulk of the gender differentials in access to adult health services. This suggests the possibility that females are disproportionately treated less equally than males in the zone. Meanwhile, receipt of social assistance increases males' access to adult health services by 6.4% and increases that of females' access by 1.6%. These results were substantiated by qualitative analysis. While some respondents were of the opinion that there was a gender differential in access to SRH, others opine that there was none. The study provides evidence-based recommendations for quality policy decisions on appropriate measures to promote gender-equitable and sustainable recovery in a time of crisis.

Key words: *COVID-19; Decomposition; Gender; Social assistance; Medical services; Nigeria.*

Acknowledgments

The African Economic Research Consortium would like to acknowledge the International Development Research Centre (IDRC), Ottawa, Canada, for financial, technical, and intellectual support. This work was carried out with the aid of a grant from IDRC. We would also like to recognize OXFAM for technical and intellectual support. The AERC is similarly grateful to the resource persons for in-depth comments and suggestions that shaped this study from inception to completion. The findings, opinions and recommendations are those of the author and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat; neither do they reflect the views of IDRC or its Board of Governors.

1. Background to the study

COVID-19, an infectious disease caused by coronavirus has become a global pandemic, adversely impacting and causing socioeconomic downturn in over 200 countries with millions of individuals and families affected and over two million fatalities (Pan American Health Organisation, 2021). With its first incidence recorded in Wuhan, China, in late December 2019, the COVID-19 pandemic continues to ravage and pose a significant threat to many lives. The adverse impacts of COVID-19 have been enormous on the socioeconomic outlook of human lives, coupled with its attendant challenges on all sectors of the global economy covering agriculture, manufacturing, tourism, health, services, and education, among others.

Since the World Health Organization's recognition of COVID-19 as a pandemic, Nigeria like most countries of the world had implemented a lockdown policy restricting all sorts of movements except for essential services and functions as a measure to contain the virus (Presidential Task Force on COVID-19, 2020). The pre-lockdown lasted for 31 days from 28 February 2020 to 29 March 2020. The total lockdown lasted for 35 days from 30 March 30 2020 to 3 May 2020, and 73 days for the gradual easing up of the lockdown from 5 May 5 2020 to 15 July 2020 (Ibrahim et al., 2020). Nigeria as a developing country is faced with the challenge of a weak healthcare system and inefficient drug supply chain management; this has been a major concern in the treatment of diseases and a major hindrance to the attainment of universal health coverage and Sustainable Development Goal 3 which aims to ensure healthy lives and wellbeing for all.

Access to medical services is an important component of good healthcare systems; and with interrupted access to medical services, improving the health outcome of the population is not likely to be achieved (Akande-Sholabi & Adebisi, 2020). Furthermore, Ahmed et al. (2020) suggest that, for an evidence-based recommendation, appropriate data and information is needed about COVID-19 and health service provision: what services are available, what services are needed, what services were provided, what services were accessible, what precautions are being taken to prevent virus transmission and who should continue to seek health care, and how are these data disaggregated by gender and other pertinent socio-demographics. Moreover, while difficult to quantify, the negative impacts of the lockdown measures on the delivery of and access to sexual and reproductive health (SRH) information and services, including family planning and contraceptives (FPC), maternal and newborn care

services, STI/HIV infection treatment, domestic violence, abortion care, emergency services, male infertility, and pharmacy services can be far-reaching (Riley et al., 2020; Stein et al., 2020; Krubiner et al., 2020; Purdy, 2020). Reports have indicated staggering disruption to the contraceptive supply chain, and closures of clinics and delivery points catering to SRH services needs of women in an attempt to scale health systems' capacities to respond effectively to the pandemic (Riley et al., 2020; International Planned Parenthood Federation [IPPF], 2020). A recent global survey conducted by the International Planned Parenthood Federation (IPPF)'s national members to assess the impact of the COVID-19 pandemic on SRH services delivery revealed a widespread closure of 5,633 static and mobile clinics as well as community-based service delivery points across 64 countries (IPPF, 2020).

In Nigeria, where new and existing FPC adopters might be in dire need of information and counselling, it may no longer be accessible through the health system that has been refocused to address only "essential" health care needs (Endler et al., 2021). Studies have shown health facilities, pharmacies, and patent medicine stores as important sources of FPC information among sexually active Nigerians, especially among adolescents and adult women (NPC, 2019; USAID, 2019; Omolase et al, 2011; Research Group on Methods for the Natural Regulation of Fertility, 2001). Regional inequality is high in Nigeria, and it translates into higher rates of poverty and inaccessibility to basic services in the north-western states of the country. For example, in Sokoto State, 81% of the population is poor while poverty incidence is much lower at 34% in Niger State. Economic and gender inequality are interconnected and reinforce each other. The life of Nigerian women is affected by a myriad of discriminatory traditional and socio-cultural practices that put them at disadvantage in several areas compared to men. For example, the majority of women are employed in casual, low-skilled, low-paid informal jobs; women are less likely than men to own land, and 75.8% of the poorest women have never been to school, compared to 28% of the richest men. In Jigawa State, 94% of women (against 42% of men) are illiterate. As a result of these disadvantages, women are more likely to be poorer than men and keep being excluded from full participation in the country's economic, social, and political life.

Before the COVID-19 pandemic, empirical studies have suggested differential patterns in health service use and access by gender (Dunlop et al., 2002; Manuel, 2018). The pandemic, with its attendant challenges, however suggests that the gender differentials might have been exacerbated due to the various restrictive measures embarked upon to contain the virus. Therefore, this study set out to complement previous and concomitant empirical studies by examining and analysing the impacts of the lockdown order on access to medical services and other pertinent health variables.

The specific objectives of this study are:

i. Examine the distribution of access to medical services by gender during the COVID-19 pandemic in Nigeria.

ii. Examine gender differentials in access to medical services during the COVID-19 pandemic in Nigeria.

iii. Investigate the relative importance of the socioeconomic factors contributing to gender differentials in access to medical services.

iv. Examine the short-term impact of social assistance on access to medical services.

v. Explore contextual factors, such as poverty, inter- and intra-household resources allocation and decision, inequality, power relations, socio-cultural norms, and perceptions that influenced access to sexual reproductive health.

2. Conceptual framework

Reproductive health behaviour is shaped by individuals, social relations, and institutions and not highly by individual factors as it is dominantly reported in the conceptual framework for understanding reproductive behaviour (Price, 2007). According to the World Health Organization (WHO, 2004), access consists of at least five components of service provision which are availability, affordability, acceptability, appropriateness, and quality (Figure 1). All these five components apply to the key elements of reproductive health care: family planning; maternal and newborn care; prevention and management of unsafe abortion; prevention and management of reproductive tract and sexually transmitted infections (RTI/STIs), including HIV/AIDS; and promotion of healthy sexuality, which were considered in this study.

The conceptual framework is adapted from a health similar model developed for family planning (FP) under The EVALUATION Project (Bertrand et al., 1996). The column on the far left defines the context in which a programme operates: the social, cultural, economic, political, and legal systems in a given society, including society's reproductive health programmes. The demand factors are the key elements of reproductive health services considered in the study while the supply environment comprises the functional areas that support service delivery and the service delivery environment itself. The functional or operational areas of a programme provide the structure for carrying out interventions, including management, training, logistics and research/evaluation. The two sets of factors—supply and demand—jointly determine the level of service utilization in the study.

3. Literature review

Historically, there have been contemporary evidence of gender differentials in the wake of pandemics, drawing from the experience of the Spanish influenza pandemic of 1918, Ebola in 1976, and the H1N1 outbreak in 2009, and many other chronic diseases that have plagued the planet (Klein et al., 2010; Noymer, 2010; Fawole et al., 2016). Similar claims of inequities have been made around the world since the start of the COVID-19 epidemic. Situations are especially devastating for disadvantaged people and people of various races, who frequently face the greatest inequities and inequality when it comes to health care, education, and social status (Holder et al., 2021; Mansour et al.,, 2020; Mehra et al., 2020; White et al., 2021; Zimmerman & Anderson, 2019).

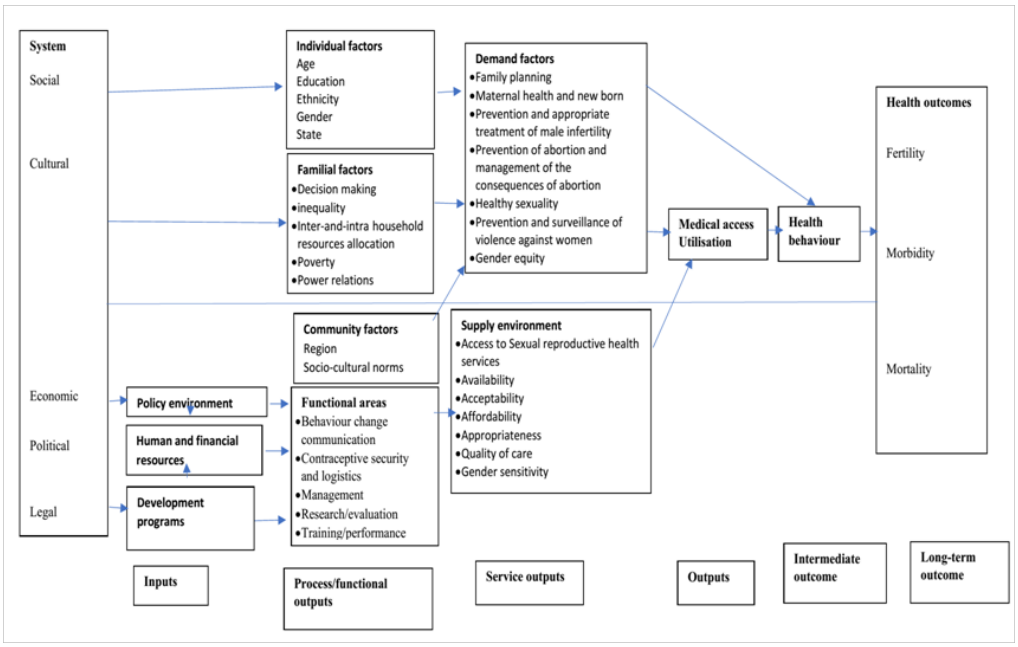
Gender inequality is defined as women's unequal and unjust lack of access to rights and opportunities in all sectors of social life (Arora, 2012; Baudassé & Bazillier, 2014; Young et al., 1994). Gender inequality is frequently both a cause and a result of health disparity, which is described as an elevated burden that worsens people's health and wellbeing (Wheeler & Bryant, 2017). Gender disparities have serious human and economic effects, especially in the face of global health crises like COVID-19. The COVID-19 epidemic has worsened gender inequities for women while also posing new difficulties to society as a whole. The adverse effects of COVID-19, compounded by unforeseen implications of public health measures like lockdowns (e.g., delayed or cancelled health treatments), have forced women to deal with difficulties ranging from COVID-19 infections and deaths to unprecedented magnitude and intensity of domestic abuse.

In sub-Saharan Africa, sex plays an important prediction of COVID-19 mortality, as 70.5% of 2.4% of total death cases reported were men (Dalal et al., 2022). Among those who reported a need to seek health care during the COVID-19 pandemic in South Africa, a decline in accessing a health care provider was greater for women than men (Abdalla et al., 2021). Findings show prenatal care visits decreased in Nigeria during the COVID-19 pandemic (Kotlar et al., 2021). Organisation for Economic Co-operation and Development (OECD, 2020) opined that women faced high risks of job and income loss, and face increased risks of violence, exploitation, abuse or harassment during times of crisis and quarantine.

Findings from a study conducted by OECD (2020) indicated that, while women account for 70% of COVID-19 infections among health care workers in countries such as the United States, Spain, and Italy, the intersection of gender differentials and

racism has resulted in female African American health care workers having even less access to personal protective equipment and medical training (Lotta et al., 2021). The experience in the United States alone on the gender gap in COVID-19 mortality revealed that states, where women have less access to healthcare than men, have a considerably larger mortality rate (Akter, 2021).

Figure 1: Conceptual framework adapted from a model developed by Bertrand et al. (1996)



The status of US women's health and health care access is considerably low compared to other developed countries and neighbouring Canada (Gunja et al., 2018).

According to Gallup's health care poll data, more than 37% of US women delay medical treatment due to cost compared with less than 22% of US men, despite no substantial difference in the severity of their medical conditions (McCarthy, 2017). The cost of health care is a key driver of such gender gaps in health care access (Kullgren et al., 2012). Women face substantially higher health care costs, insurance premiums, and out-of-pocket expenses than men due to the nature and extent of the health problems they face (Salganicoff et al., 2014; McCarthy 2017; Centers for Medicare and Medicaid Services, 2019).

A further study reported that, amid the pandemic, pregnant mothers face a variety of extra challenges, including COVID-19 problems, a lack of access to basic health care, and domestic abuse (Ferraro et al., 2017; Qiao, 2020). Even women who are not exposed to the aforementioned risk factors, nevertheless face significant caregiving burdens that negatively impact their physical and mental health (Langer et al., 2015; Swinkels et al., 2019; World Health Organization, 2019).

According to Braveman and Gottlieb (2014), a vast and compelling body of research has been collected in recent decades that demonstrate a powerful influence of social variables other than medical care in affecting health across a wide variety of health indices. This evidence does not refute the fact that medical treatment has an impact on health; rather, it suggests that medical care is not the only factor at play and that its impacts may be more limited than previously thought, particularly in terms of determining who gets sick or injured in the first place. However, the links between social factors and health are not straightforward, and there are ongoing debates about the quality of the evidence establishing a causal role for specific social factors.

Several studies have sought to determine the influence of social influences on health. According to an analysis by McGinnis et al. (2002), medical care accounts for only 10%–15% of preventable death in the United States; while Mackenbach (1996) research show that this number may be underestimated, they confirm the overwhelming impact of social variables. McGinnis and Foege found that behavioural causes account for half of all deaths in the United States; additional studies have demonstrated that social factors such as income, education, security, and employment have a substantial influence on health-related behaviours. Galea and colleagues (2005) conducted a meta-analysis, concluding that the number of U.S. deaths in 2000 was attributable to low education and racial segregation, among others. The health impact of social factors also is supported by the strong and widely observed associations between a wide range of health indicators and measures of individuals' socioeconomic resources or social position, typically income, educational attainment, or rank in an occupational hierarchy. In the U.S. as well as European data, this association often follows a stepwise gradient pattern, health-improving incrementally as social position rises.

Hawkes and Buse (2020) stated that, while several data sets show that women use health services more frequently than men, studies at the national and subnational levels demonstrate that ingrained gender inequalities continue to impede women's access to health care. Women, for example, may lack the financial liberty to obtain services when health care is based on out-of-pocket expenditures (Saikia et al., 2014).

Navarro (2009) analysed the changes in health conditions and quality of life in the populations of developed and developing countries over the past 30 years and argued that what has been happening is not a reduction of state interventions but a change in the nature and character of those interventions, resulting from major changes in class (and race and gender) power relations in each country, with the establishment of an alliance between the dominant classes of developed and developing countries, a class alliance responsible for the promotion of its ideology, neoliberalism. This is the cause of the enormous health inequalities in the world today. It is not inequalities that kill people, as the report states; it is those who are responsible for these inequalities that kill people.

O'Laughlin (2016) also argued from a health security point of view and posited that, addressing inequalities of health has an instrumental rationale. Not only does the rapid and frequent movement of people mean that infections also move quickly between rich and poor, but systems of control based on exclusion hinder trade, make the monitoring of diseases difficult (those at risk evade identification), and undercut the public health capacity for rapid intervention.

Uwoke (2020)found out that the pandemic had an impact on the ease of essential medicine access for both acute and chronic conditions. For respondents living with chronic conditions, there was an increase in the proportion of those facing difficulties with essential medicine access. Fayehun et al. (2020) found that some pharmacies assisted regular customers with credit and medication but there were reports of low stocks and indications of stockpiling. Some evidence on gendered differential evidence in Africa and Asia in the provision of health care support was observed, as specific medical services' needs of women were neglected. The dual difficulties of establishing medical care channels and attaining gender equality have never been more urgent (Walby, 2004). As the world moves toward the post-2020 development agenda, the current socioeconomic outlook demonstrates, not only why each challenge is critical, but also why both challenges must be addressed simultaneously in ways that fully inculcate gender perspectives, particularly women's and girls' human rights, and assist countries in making the transition to sustainable development.

In terms of equitable access to health care services and financial resources, a study conducted in Malawi revealed that men were more likely than women to secure community-sourced health care financial (88.8% vs. 68.6%, $p < 0.001$) and less likely to underutilize necessary health care (22.4% vs. 37.2%, $p = 0.02$) (Azad et al., 2020). Concerning accessing maternal health services during the pandemic, Ombere (2021) found that expectant mothers feared attending hospitals for perinatal care due to the possibility of contracting COVID-19. Therefore, there was an increase in home deliveries with the assistance of traditional birth attendants (TBAs)/traditional midwives, who were also overwhelmed with women who sought their services. Further studies have shown that when women and girls are typically disproportionately affected by economic, social, and environmental shocks and pressures, the repercussions of unsustainable development patterns exacerbate gender inequality (Neumayer & Plümper, 2007). Inaccessibility to medical services and gender inequality has strongly intertwined causes and underlying forces. As a result of the lockdown, there was limited access to modern contraceptives. One of the primary barriers to access is a shortage of contraceptive medications and devices, as a result of supply chain disruption (Aly et al., 2020). More so, the COVID-19 restrictive measure has widened the barriers to accessing contraception, and this in effect led to a spike in adolescent pregnancy, which finally resulted in dropping out of schools for affected adolescent girls. Vora et al. (2020) also found that 4,100,000 in low and 12,000,000 in medium countries were women projected who could not access modern contraceptives due to COVID-19 disruptions in 115 low- and medium-income countries. Current use of modern contraceptive methods was limited among young married women (14%); it was even lower in neighbourhoods perceived to be at risk of COVID-19 (United Nations International Children's Emergency Fund [UNICEF], 2020). More people seek unsafe abortions that risk their health and lives because sexual and reproductive health care is often neglected or difficult to access during a crisis. IPAS (2020) estimated that 20,625 women were denied safe abortion services in the study sites with lockdowns. Furthermore, a large body of literature documents discrimination against women in the diagnosis, treatment, and care of a wide range of diseases (Samulowitz et al., 2018).

4. Methodology

Data and data description

This study adopts a mixed-method approach involving both quantitative and qualitative techniques. The quantitative technique entails the use of a secondary data set from the Nigeria COVID-19 National Longitudinal Phone Survey (COVID-19 NLPS) a monthly survey that contains nationally representative samples of 1,950 households. The surveys were conducted by the National Bureau of Statistics in collaboration with the World Bank. The households sampled in the surveys were drawn from the sample of households interviewed in Wave 4 of the 2018/2019 General Household Survey. A total of about 5,000 households selected randomly across the country's six geo-political zones formed the target frame from which the sample sizes for the surveys were drawn (see Figure 2). This consists of the households previously interviewed in Wave 4 of the General Household Survey in January/February 2019. To easily reach study respondents from the 2019 survey, phone numbers of heads of household and three other close relatives were documented for subsequent surveys. These contact numbers were subsequently used to get in touch with the selected respondents for the 2020 monitoring survey. This study sample was thus drawn randomly from the pool of about 5,000 households to have a representative sample.

In total, over 3,000 phone numbers were selected from the target frame using a balancing sampling approach (sex and education status of household head, household size, location) to retain the characteristics of the frame.

This research uses Round 11 of the COVID-19 NLPS panel data, which contains information about pertinent variables of interest such as the need for and access to family planning services, maternal and child care services, adult health services, pharmacy, vaccination, and emergency care services. Round 11 of the COVID-19 NLPS was conducted in March 2021 after COVID-19 case numbers had picked up in December 2020 and January 2021. Though there were far fewer restrictions on activities and movement within the country, some key restrictions including on mass gatherings, remained in place. Though a sample size of 1,800 was targeted, a larger number (an additional 60%) was contacted to cater for non-response and loss of interest in the study. Subsequently, the study's sample size varied across the rounds as a result of non-response, unreachable phone lines, and the like. The questionnaire was used

to elicit relevant data from the sampled head of the participating households. The first round (baseline) of the survey was conducted in April/May 2020, during which a federally mandated lockdown was in full effect.

Figure 2: The six geopolitical zones in Nigeria

A description of key variables of interest is presented in Table A1 (in the appendix). The result shows that the percentage of male respondents (50.4%) is almost the same as that of female respondents (49.6%), though slightly higher than females. There were more children between the ages of 0-17 years (52%) than adults between the ages of 18-45 years (35%) and 46 years and above (13%). About 84% of children between the ages of five and 18 years were currently attending school while 16% were not attending school. Nearly 19% of adults who were of working age (15-70 years)[1] were unemployed. Respondents from rural areas made up about 74%, while 26% of the respondents were from urban areas. Approximately 15% of the respondents were heads of households while 85% fall into the category of other household members, with male-headed households constituting about 82%. Only 1% of respondents received social assistance whereas 99% did not receive any social assistance. Most of the respondents were from the Northern region, particularly the North West region (31%). This is subsequently followed by the North Central region (16.5%) and the North East region (16.1%). Approximately 14.3% of the respondents were from the

South-South region, 11% were from the South West and 10.6% were from the South East region. Relatedly, there were relatively more respondents from Katsina (7.7%), Kaduna (6.8%), Kano (5.9%), and Bauchi (5%) than from other States. Respondents who needed other medical services (52%) were more than those who did not need such services (48%).

For the qualitative methodology, primary data were collected from the South West, North West, and South East of Nigeria. The primary data was obtained through an in-depth interviews (IDIs) and focus group discussions (FGDs). A total of six IDIs and eight FGDs were conducted to capture the perspectives of the three regions representing the major ethnic groups in the country. Interviews included discussions on whether individuals or households were able to access sexual reproductive health services which specifically relate to gender differences in access to family planning services, STI/HIV infection treatment, sexual and reproductive health facilities, healthy sexuality, domestic violence, male (in)fertility services, the incidence of unwanted pregnancy, amongst others. These areas/questions were not fully covered in the panel survey. Responses to these questions thus complemented the survey and enrich the analysis. The responses were analysed using Atlas.ti software.

Empirical strategy

To achieve the first quantitative objective, a descriptive technique was employed. The descriptive technique comprises mean, frequency, percentages, graphs, and cross-tabulations of key variables of interest. To achieve the second objective, a nonlinear parametric technique is used. Given the binary nature of the dependent/outcome variable(s) of interest (e.g., access to medical services), the parametric estimation is based on a logit model which is appropriately weighted to the population and robust to heteroscedasticity.

$$H_i = L\ (\alpha + \ \beta X_i^{'} + \mu_i) \tag{1}$$

Where: L denotes the functional notation for the standard logistic distribution, H_i is the outcome variable of interest, α is the intercept, X *stands* for all the control variables which include age, metropolitan status, geographical location, amongst others. For example, a functional relationship would be expressed as:

$$Hi = \alpha i + \tau Dgi + X^{'}_{\ i} + \upsilon i \tag{2}$$

Where: H_i is the health outcome of interest for individual i; D_g is the gender (Male=base category), X_i are control variables and υ_i is an error term. τ measures how the gender gap in the outcome variable has changed. Other models which involve the interaction of the gender variable with other pertinent variables were also examined.

To achieve the third objective, which is to investigate the relative importance of the factors contributing to gender differentials in access to medical facilities, the empirical analysis follows the developments underpinned by Blinder-Oaxaca decomposition. A typical Blinder-Oaxaca decomposition of the gender health gap across two groups g = {f, m} is denoted by decomposing health H_{ig}, while X_{ig} is a set of health-related characteristics for each individual *i* in group *g* and the conditional expectation of H_{ig} is linear, such that health for individual *i* in group g follows:

$$E[H_{ig} \mid X_{ig}] = X' \beta g, \qquad g = \{f, m\}. \tag{3}$$

A Blinder-Oaxaca decomposition separates the gender health differential $\Delta H^{f,m}$ attributable to differences in observed characteristics and the returns to those endowments. The decomposition proposed by Blinder (1973) and Oaxaca (1973) and generalized by Oaxaca and Ransom (1994) can be expressed as:

$$\begin{aligned} \Delta H^{f,m} &= E(Hm) - E(Hf) = E(Xm)'\beta m - E(Xf)'\beta f \\ &= [E(Xm] - E(Xf)]'\beta^* + [E(Xm)'(\beta m - \beta^*) + E(Xf)'(\beta^* - \beta f)] \end{aligned} \tag{4}$$

The first term on the right-hand side of (4) refers to the part of the health difference (or gap) that may be explained by group differences in observed characteristics, while the two remaining terms are attributable to differences in coefficients between the two groups, i.e., differences in the returns to individual attributes. In (4), the reference vector β^* is given by the linear combination of the estimates from (3):

$$\beta^* = \rho\beta m + (1-\rho)\beta f \tag{5}$$

The linear combination of the "weights", (ρ), can be chosen in a variety of ways. For example, setting $\rho = 1$ puts all the weight on males, while setting $\rho = 0$ places all the weight on females. If the chosen value of ρ places all the weight on one of the groups, however, the decomposition is reference-dependent. Based on theoretical derivations, Neumark (1988) and more recent studies (Fortin, 2008; Jann, 2008; Kassenboehmer and Sinning, 2014;) advocate coefficients from a pooled regression over both groups as an estimate for parameter vector β^*. Thus, this study employs this strategy in our subsequent empirical analysis.

The fourth objective, which targets the short-term impact of social assistance on access to medical services, was achieved using a propensity score matching technique. This technique is a plausible solution to the problem of selection bias. Thus, using this technique would help to overcome and address the possible existence of a selection bias that might arise as a result of differences in beneficiaries and non-beneficial characteristics even in the absence of policy intervention. The technique involves finding a group of non-beneficiaries who are similar to the beneficiaries in

all pertinent pre-intervention characteristics, *X*. Then, differences in outcomes of the non-beneficiary group and beneficiary group could be attributed to the policy or intervention. This involves the use of balancing scores or propensity scores, which is the probability of an individual participating or being a beneficiary of an intervention given his observed characteristics or covariates *X*, such that the conditional distribution of *X* is independent of assignment into the intervention. A key identification strategy is the conditional independence assumption (CIA) which assumes that potential outcomes are independent of intervention assignment conditional on covariates *X* and the propensity score. Assuming that the outcome is *Z*, the treatment or intervention is *T* and the propensity score is *P(X)*, CIA holds if:

$$Z(0), Z(1) \perp\!\!\!\perp T|P(X) \tag{6}$$

Another requirement is that common support or overlap conditions should hold. This stipulates that individuals with the same *X* values have a positive probability of being both beneficiaries and non-beneficiaries, given in Equation 7 as:

$$0<P(T=1\text{-}X)<1 \tag{7}$$

Given that the two conditions above hold, the PSM estimator for average treatment effects on the treated (i.e., the effect of social assistance or intervention on beneficiaries) could be expressed as:

$$ATT = EP(X)ST=1) = \{E[Z(1)|T = 1;P(X)] - E[Z(0)|T = 0;P(X)]\} \tag{8}$$

Simply put, the PSM estimator is the mean difference in outcomes appropriately weighted by the propensity score distribution of beneficiaries (Caliendo & Kopeinig, 2008). Given that the PSM technique is a two-stage procedure, in the first stage, selection into the social assistance programme was modelled as a choice dependent variable using the probit model. In the second stage, ATT was estimated by matching beneficiaries to non-beneficiaries with similar characteristics. Given that *Ti* is a dummy for selection into the social assistance programme and *X* is a vector of pre-treatment covariates, formally, the PSM model is specified as:

$$P(X) = Pr[Ti = 1|X] = E[Ti|X]; p(X) = F[h(Xi)] \tag{9}$$

$$P(X) = Pr(p = 1)|X \tag{10}$$

Where: F[..] is a probit cumulative distribution. Equation 10 is the probability of receiving a treatment or propensity score. Formally, the average treatment effects on the treated, ATT, which is the effect of the social protection programme is specified as:

$$ATT = E\{[Yi(1) - Yi(0)|Ti = 1]\} = E\{[Yi(1)/Ti = 1]\} - E\{[Yi(0)/Ti = 1]\} \tag{11}$$

The fifth objective was achieved using qualitative data. FGDs and IDIs were conducted. The FGDs were directed at the community with the gathering of eight to 12 people, while the IDIs were directed at individuals. This helped to explore contextual factors such as poverty, inter- and intra- household resources allocation and decision, inequality, power relations, socio-cultural norms, and perceptions that influenced and are related to access to sexual reproductive health services. A total of 24 FGDs comprising 8-12 people in each focus group were conducted. To capture the perspectives of the major ethnic groups in Nigeria, eight FGDs were conducted with four in the rural area and four in the urban settings in the North West (Hausa), South East (Igbo), and South West (Yoruba). They are:

i. FGD of middle and late adolescent boys between the ages of 14 and 21years;

ii. FGD of middle and late adolescent girls between the ages of 14 and 21years;

iii. FGD of adult men from the ages of 22 and above, and

iv. FGD of adult women from the ages of 22 and above.

Six IDIs were conducted in each of the three selected regions making a total of 18 IDIs. Those interviewed were two traditional leaders/opinion leaders; two health workers; and religious leaders (Pastor and Imam).

5. Results

Descriptive statistics (by gender)

Given that the focus of this study is on gendered access to medical services during the COVID-19 pandemic lockdown, the analysis begins with the description of pertinent variables by gender (see Table A2, in the appendix). The result indicates that, except for adults above 45 years, there were more males who were between 0-17 years (53%) and 18-45 years (34%) than their respective females. Moreover, more males (86%) were currently attending school than their female counterparts (83%). However, the rate of unemployment was slightly higher for females (19.3%) than for males. Similarly, more females (75%) reside in rural areas than males. The percentages of those who were other household members (95%), and did not receive social assistance (99%) were also greater for females than for males. Across the geopolitical zones, there were more females from the South East region (11%), South-South region (15%), and South West region (12%) than their respective males. Similarly, there were more females in Akwa-Ibom (3%), Bauchi (5.1%), Benue (3.8%), Cross Rivers (2.2%), Ebonyi (2%), Edo (1.7%), Ekiti (1.1%), Enugu (2.6%), Imo (2.1%), Katsina (7.8%), Ogun (2.3%), Ondo (1.8%), Oyo (3.6%), Rivers (4%), Yobe (2%) and Zamfara (4.6%). More pertinently, males (52.5%) who needed medical services were a bit more than their female counterparts (52.3%).

The descriptive analysis of the quantitative data further shows the breakdown of needed medical services by their socio-demographics between males and females during the lockdown, as shown in Table A3 (in the appendix). The result reveals that, on average, female adults between the ages of 18 and 45 years (35%) needed medical services more than their male counterparts (30%). Apparently, females within this age category often needed maternal health and sexual reproductive health (SRH) services more than males. Considering that most females aged 18-45 years are within the sexually active and childbearing period, seeking maternal health and SRH services is usually an important aspect of the lives of most adult females who fall within this age range. On the contrary, male children aged 0-17 years (57%) needed medical services more than female children (53%), while each of male and female adult who is over 45 years needed medical services. When compared with their respective male counterparts, a greater percentage of females were: not currently attending school (15%), unemployed (19%), residing in rural areas (78%), other household members

(96%), did not receive social assistance (99%), residents of South East region (14%), South West region (7%) needed more medical services. Notably, female residents in Bauchi (6%), Katsina (10%), and Zamfara (5%) needed medical services more than their respective male counterparts.

Gendered distribution of access to medical services during COVID-19 lockdown

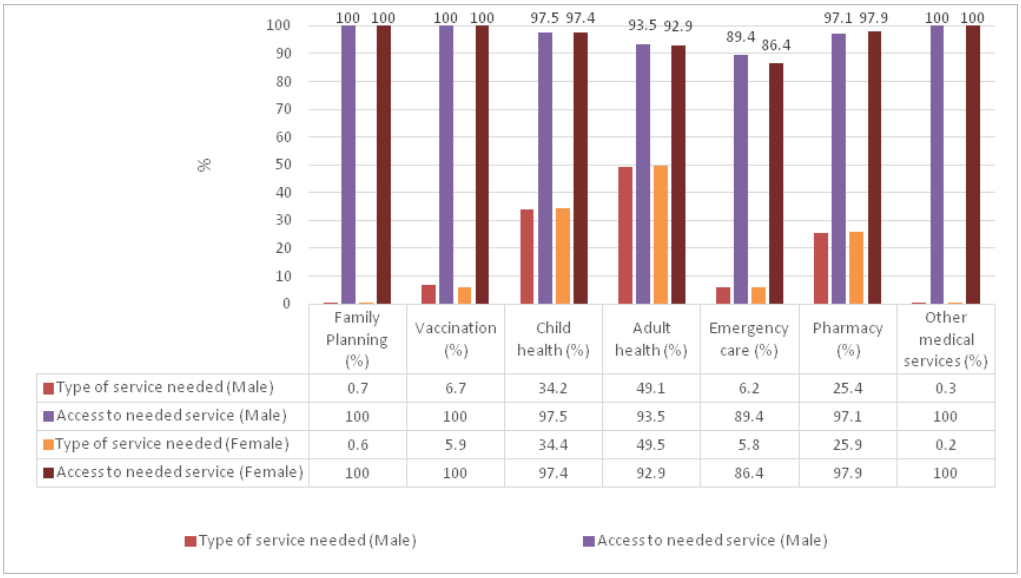
Concerning the type of medical services needed and actual access to the services, Figure 3 illustrates the distribution of needed medical service(s) and access to the services by males and females during the lockdown. The medical services include family planning, child health, adult health, pharmacy, emergency care, vaccination, and other medical services. One striking feature of Figure 3 is that, out of the 52.5% and 52.3% of males and females who needed medical services, respectively (see Table A2, in the appendix), adult health services were the most needed medical services, and females (49.5%) needed these services slightly more than their male counterparts (49.1%). However, access to these services was greater for males than for females, even though females needed these services more than males. This same pattern is also observed for child health services. Females (34.4%) who needed child health services were more than males (34.2%), but access was higher for males (97.5%) than for females (97.4%).

Pharmacy services were needed more by females (25.9%) than by males (25.4%), and access was equally higher (97.9%) for females than for males (97.1%). Meanwhile, emergency services were needed more by males (6.2%) than by females (5.8%), and access was also higher for males (89.4%) than for females (86.4%). Family planning services, vaccination services, and other medical services were needed by more males than by females, and access was equal and same for both males and females. Although a few respondents needed these services, it is however quite surprising that all the males and females who needed these services were able to access them.

The possibility of the variables being mismeasured or wrongly reported cannot be ruled out. Another possibility is intentional misreporting by the respondents due to some reasons best known to them or misunderstanding/misinterpretation of questions during the interview which could partly explain the high responses for adult health services, bearing in mind that respondents to this survey were mostly adults who are either head of household or responsible adults in the household. For example, it is possible that some respondents, for some reasons, preferred to divert their affirmative responses for access to family planning and other medical services to adult health services. For example, some adults might have reported access to adult health services instead of reporting access to family planning or any other sexual reproductive health services due to cultural factors and stigmatization associated with a public declaration of accessing such services. As much as this analysis would have explored access to all the medical services, further quantitative and qualitative

analysis are however limited to access to adult health services, with a particular focus on access to sexual reproductive health (SRH) services given the highlighted aforementioned reasons.

Figure 3: Distribution of types of medical services needed and access to medical services during COVID-19 lockdown (by gender)



	Family Planning (%)	Vaccination (%)	Child health (%)	Adult health (%)	Emergency care (%)	Pharmacy (%)	Other medical services (%)
Type of service needed (Male)	0.7	6.7	34.2	49.1	6.2	25.4	0.3
Access to needed service (Male)	100	100	97.5	93.5	89.4	97.1	100
Type of service needed (Female)	0.6	5.9	34.4	49.5	5.8	25.9	0.2
Access to needed service (Female)	100	100	97.4	92.9	86.4	97.9	100

Gender differential in access to medical services during COVID-19 pandemic lockdown

In furtherance of the objective of this study, Table 1 presents the estimates for gender differential in access to adult health services, alongside social determinants of access to adult health services. In Column 1, only the key independent variable of interest, gender, was included in the model, while other aforementioned independent variables were added to the model in Column 2. Column 3 added the State fixed effects, while column 4 contains the interaction of females with key independent variables.

When the control variables are not included, the result shows that females were 0.5% less likely to have access to adult health services during the lockdown, although not to a statistically significant degree. Similarly, females were, on average, 0.3% and 0.1% less likely to access adult health services even when the control variables are included (columns 2 and 3, respectively). One could infer from these results that access to adult health services and, by extension, other adult health services which might not have been appropriately captured or properly measured in the survey, was more of a challenge and lesser for females than for males during the lockdown. This resonates with previous findings which suggest the existence of a gender differentials in access to health care services. The emergence of COVID-19 and its accompanying challenges have in no doubt exacerbated the existing gender differentials (Nnoyelu & Nwankwo, 2014).

In column 4, when the gender variable was interacted with pertinent variables of interest, the result reveals that females residing in the North-East region and South-South region were 3.4% and 14.4% less likely to have access to adult health services than their respective male counterparts. Females who are employed were also less likely to have access, though the coefficients are not significant. On the other hand, females who are resident in the North Central region and North West region were 4.7% and 5.4% more likely to access adult health services, respectively. Further result shows that there is a low probability that those who are resident in the North East and South-South regions had access to adult health services while those who received social assistance had a higher probability of accessing the service. Similarly, residents of Bauchi, Benue, Borno, Edo, Gombe, Kogi, Kwara, Ogun, and Yobe states were more likely to access adult health services, while those residing in Abia, Akwa-Ibom, Kano, Kebbi, Ondo, Osun, Oyo, and Plateau states were less likely to access the services.

Table 1: Effects of access to adult health services during COVID-19 pandemic lockdown

	(1)	(2)	(3)	(4)
Gender (female)	-0.005	-0.003	-0.001	
	(0.010)	(0.014)	(0.012)	
18-45 years		0.003	0.004	
		(0.015)	(0.014)	
Employed		-0.020	-0.002	
		(0.013)	(0.014)	
Urban		-0.011	-0.029	
		(0.017)	(0.019)	
Head of household		-0.004	0.000	
		(0.020)	(0.019)	
Yes_assistance		0.094**	0.067**	
		(0.030)	(0.026)	
North Central		0.025	-0.136*	
		(0.020)	(0.058)	
North East		-0.033	-0.341***	
		(0.024)	(0.095)	
North West		0.030	-0.027	
		(0.020)	(0.021)	
South East		0.012	-0.029	
		(0.022)	(0.021)	
South-South		-0.196***	-0.146*	
		(0.050)	(0.060)	

continued next page

Table 1 Continued

	(1)	(2)	(3)	(4)
Female*18-46years				0.017
				(0.016)
Female*employed				-0.027
				(0.018)
Female*Urban				0.016
				(0.019)
Female*Head of HH				0.019
				(0.028)
Female*Yes_assist				0.090**
				(0.032)
Female*Northcentral				0.047**
				(0.017)
Female*Northeast				-0.034
				(0.029)
Female*Northwest				0.054**
				(0.017)
Female*Southeast				0.032
				(0.018)
Female*Southsouth				-0.144*
				(0.056)
Abia			-0.057	
			(0.032)	
Adamawa			0.280**	
			(0.095)	
Akwa Ibom			-0.483***	
			(0.111)	
Anambra			-0.055	
			(0.057)	
Bauchi			0.254**	
			(0.097)	
Bayelsa			0.057	
			(0.080)	
Benue			0.093	
			(0.058)	
Borno			0.336***	
			(0.094)	

continued next page

Table 1 Continued

	(1)	(2)	(3)	(4)
Cross River			-0.273	
			(0.184)	
Delta			-0.176	
			(0.154)	
Ebonyi			0.001	
			(0.005)	
Edo			0.144*	
			(0.060)	
Ekiti			-0.001	
			(0.005)	
Enugu			-0.000	
			(0.005)	
Gombe			0.266**	
			(0.094)	
Jigawa			0.002	
			(0.010)	
Kaduna			0.001	
			(0.007)	
Kano			-0.027*	
			(0.011)	
Katsina			0.010	
			(0.007)	
Kebbi			-0.113	
			(0.069)	
Kogi			0.132*	
			(0.058)	
Kwara			0.115*	
			(0.057)	
Niger			0.110	
			(0.057)	
Ogun			0.123*	
			(0.058)	
Ondo			-0.054*	
			(0.025)	
Osun			-0.246*	
			(0.117)	

continued next page

Table 1 Continued

	(1)	(2)	(3)	(4)
Oyo			-0.009	
			(0.010)	
Plateau			-0.023	
			(0.015)	
Rivers			0.109	
			(0.057)	
Yobe			0.287**	
			(0.094)	
Constant	0.950***	0.980***	1.027***	0.945***
	(0.007)	(0.027)	(0.028)	(0.011)
R^2	0.00	0.10	0.24	0.04
Adjusted R^2	-0.00	0.09	0.22	0.03
F-Statistic	0.23	4.23	3.42	3.98
Observations	2919	1627	1627	1627

Notes: Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Decomposition results

Table 2 presents the decomposition results for gender differentials in access to adult health services during the COVID-19 pandemic lockdown. This analysis sheds additional light on the key socio-demographic factors driving the gender differentials in access to adult health services. The result shows that about 96% of the gender differential in needed adult health services during the lockdown could be explained by differences in socio-demographic characteristics between males and females, while 3% of the gender differentials could not be explained by the model. More specifically, gender differential in accessibility to needed adult health services is largely explained by the difference between males and females who are employed. Further analysis, which sheds additional light on the key socio-demographic factors driving the gender differential in access to adult health services, finds that gender differentials in accessibility to needed adult health services is largely explained by the gender gap in employment status which was in favour of males than females. The employment gap contributes about 79% to the gender differential in access to adult health services. Moreover, differences between males and females resident in urban areas (24%), North West (27%), and South-South (75%) geopolitical zones also account for the bulk of the gender differentials in access to adult health services. This suggests the possibility that females are disproportionately treated less equally than males in the zone. Meanwhile, differences in the receipt of social assistance marginally explain the gender differentials in accessibility to adult health services.

Table 2: Decomposition of the gender differential in access to adult health services during Covid-19 lockdown

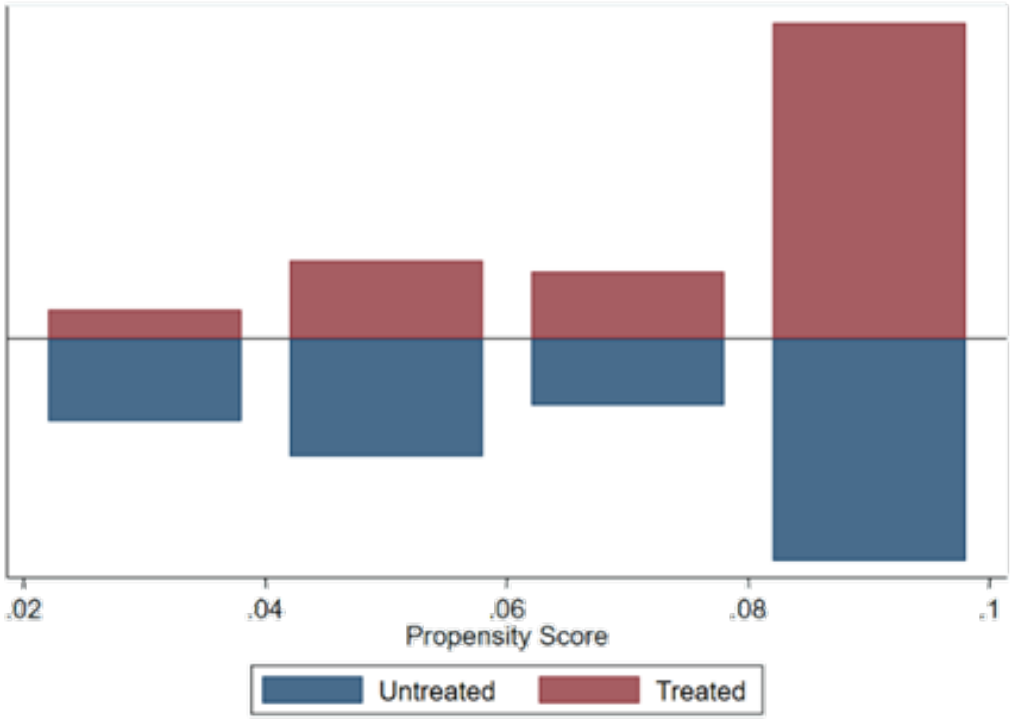
	Coef.	Contrib. (%)	P>z		Coef.	Contrib. (%)	P>z
Overall							
Male	0.93528		0.0000				
Female	0.93445		0.0000				
Difference	0.00083		0.9460				
Explained	0.00080	96.5	0.8650				
Unexplained	0.00003	3.5	0.9980				
Explained component				**Unexplained component**			
18-46 years	-0.00004	-4.7	0.8180	18-46 years	-0.01433	-1719.8	0.350
Employed	0.00066	78.6	0.3350	Employed	0.02682	3218.3	0.322
Urban	-0.00020	-23.5	0.7660	Urban	-0.00124	-149.3	0.892
Yes_assistance	-0.00002	-2.2	0.9570	Yes_assistance	0.00036	43.7	0.691
North West	-0.00023	-27.0	0.9600	North West	-0.00656	-787.0	0.342
South-South	0.00063	75.2	0.6820	South-South	-0.00199	-239.2	0.769
				Constant	-0.00303	-363.3	0.937
Total	**0.00080**	**96.5**			**0.00003**	**3.6**	

Source: Authors' computation using the 11th Round of Nigeria COVID-19 NLPS.

Social assistance and access to medical services during COVID-19 pandemic lockdown

Bearing in mind that the fourth objective of this study is to examine the short-term impact of social assistance on access to medical services using a propensity matching technique (outlined in the methodology section), the result is presented in this section. The treated group consists of those who received social assistance while the untreated group did not receive any social assistance during the lockdown period. The propensity score, which is the probability of receiving social assistance or intervention, is estimated using a discrete choice probit model. Given that the outcome variable must be independent of the intervention conditional on the propensity score, only covariates that concurrently influence the decision to benefit from the social assistance and the outcome variable are used to estimate the propensity score. These variables include the zones, which are North Central, North East, North West, South-South, and South West. The choice of the covariates is based on evidence related to benefit decisions, while the statistical significance of the covariates is confirmed. The kernel matching algorithm (with calliper 0.01) is used to contrast the outcomes of the beneficiaries with the outcomes of non-beneficiaries. This algorithm is used because it is a non-parametric matching estimator which employs weighted averages of all non-beneficiaries to construct the counterfactual outcome. Thus, it allows for the usage of more information from the control or non-beneficiary group.

Figure 4: Distribution of propensity scores across treated and untreated groups



The overlap of the distribution of the propensity scores across treated and untreated groups is displayed in Figure 4. The extent of overlap seems to be satisfactory in our final propensity score specification. The result presented in Table 3 shows that receipt of social assistance increases access to maternal health services by 3.7%.

Table 3: Analysis of the effect of social assistance on access to male adult health services

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Access to maternal health services	Unmatched	1	0.965	0.035	0.024	1.47
	ATT	1	0.963	0.037	0.014	2.67

Meanwhile, receipt of social assistance increases females' access to adult health services by 1.6%.

Table 4: Analysis of the effect of social assistance on access to female adult health services

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Access Adult health services	Unmatched	0.947	0.928	0.020	0.060	0.33
	ATT	0.947	0.932	0.016	0.053	0.3

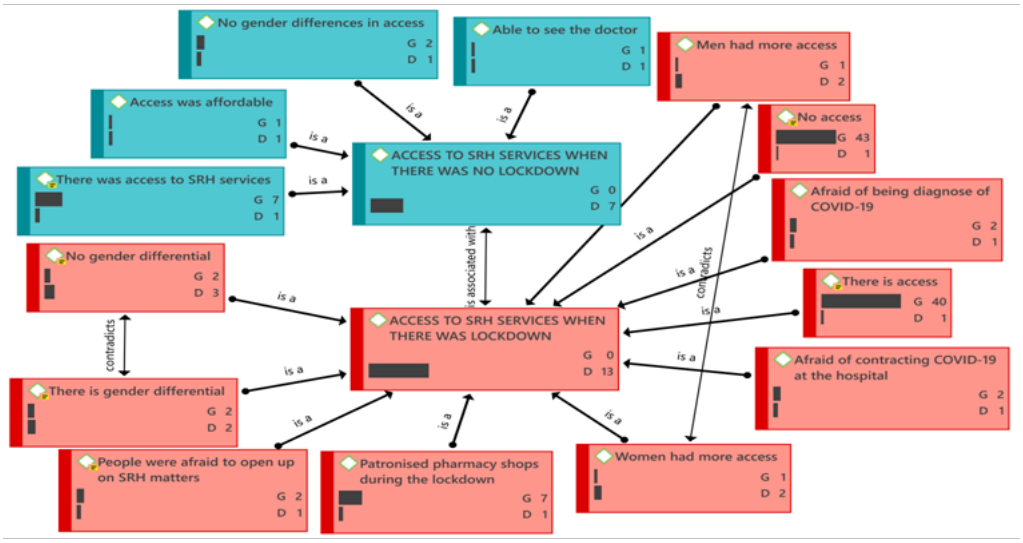
Having conducted a quantitative analysis of adult health, the findings were further substantiated by results from the qualitative analysis. In all the states, a comfortable rapport was established between the moderator of the discussion and the FGD participants. Common issues that recur and main themes were identified to summarize all the views that have been collected. Some of the themes which emerged from the discussions which also corroborated the results from the secondary sources included access to SRH services, availability, affordability, hunger, poverty, domestic violence, no social assistance, contraceptives, power relations, promiscuity, and unequal access, among others. Key elements of SRH services were considered for this study as outlined under the conceptual framework.

Characteristics of the qualitative results show the participants were described in terms of their age, educational background, occupation, religion, marital status, and ethnic group. Responses to the ages of the respondents reflected that it cut across the different age groups of young and old, single and married, educated and non-educated, and people of different walks of life. The youngest among them was 14 years while the oldest among them was 76 years of age. Moreover, most of the adolescents were students while the adult men and women are artisans, farmers, public servants, and health workers, among others. Both Christians and Muslims were represented in the interview.

In Figure 5, the qualitative findings show variation in responses. Groundedness (G) means the frequency of how often a code was applied while density (D) is the number of links between codes. The majority opined that there were no gender differences in access to SRH services before the COVID-19 lockdown, as access was affordable and easier. However, opinions differ on whether there was a gender differential in access to medical services during the lockdown. Some argued that there was no gender differential in access while others expressed that there was gender differential, with either men or women having greater access. Some were of the view that people were afraid to open up on SRH matters and others had to patronise pharmacy shops to meet their medical treatment needs.

Several health care facilities were not accessible or had restricted access due to several factors which centred on government policies to control the spread of COVID-19. Among several means of accessing sexual reproductive health services, respondents listed the following ways in which they attended to their sexual reproductive health matters. These include the use of non-orthodox health care personnel, primary health care centres, private clinic, local medicine, and self-medication. Several respondents acknowledged that private clinics were only affordable and accessible by the rich.

Figure 5: Access to medical services before and during COVID-19 pandemic lockdown



Thus, several people resorted to local medical services because of the financial implications. Concerning antenatal care, many respondents acknowledged that SRH services were not affordable during the lockdown period due to COVID-19 financial crises and most new-borns were taken to the traditional clinics since the public health care centres were not accessible and private clinics were not affordable. For family planning services, a natural method such as fertility awareness method, withdrawal method or abstinence from sex was adopted. Other methods used were the traditional methods such as the use of herbs, making an incision on their body and the use of rings to mention a few. Moreover, many use condoms by buying them from the pharmacy shops, while others still had the injections they took before the lockdown.

Accessing SRH services for male (in)fertility issues proved useful because it comes with counselling, sensitization, and deemed help whereas many men were not able to access these services during the lockdown since it is not an emergency case nor an issue that can claim the patient lives. STI/HIV treatment and management during the COVID-19 pandemic lockdown was not easily available for most people according to the response of the people. It was recorded that there was no access to health care facilities and services because of several factors which include fear on the part of the people, ignorance, unavailability of medical personal emergency response services (PERS), and government restriction policies. Moreover, many women have to do abortions to cover up the consequences of premarital sex and to prevent pregnancy among adolescents. Traditional methods were mostly used for abortion during the lockdown. Some women used herbs such as mixing lime with calcium carbonate and used seven-up with salt, while some visited a quack nurse who they call upon to abort when the need arises. There were several unsafe abortions because there was

no functional facility for an abortion. Most abortions done led to the loss of many lives because there was a complication or excessive blood loss and there was no readily available health facility to handle complicated cases.

Other SRH services discussed in the study were management and prevention of domestic violence during COVID-19 lockdown. Several domestic violence were recorded over the time of the COVID-19 lockdown, and it includes but is not limited to child abuse, kidnapping, rape, forceful marriage, physical violence, early marriage, and theft. The health workers do intervene in family violence by counselling those that came to the clinic for treatment but this kind of service was not available during the lockdown except attending only to serious medical cases. Moreover, it is necessary to stay healthy sexually to enhance the longevity of livelihood. Among several means of staying healthy, some of the respondents acknowledged that visiting physicians to conduct a medical test to ascertain the condition of the body is very important. Also, exposure to the knowledge of sex is very important because ignorance facilitates more harm than good. Several channels have been used to enlighten people about sex, relationship, and STIs. Among so many channels, respondents listed the following: doctor, family, church, watched films, friends, media, school, books, puberty, self-discovery, and public campaign. All these play a major role in enlightening people about sex. This is due to the purpose of sensitization of unsafe sexual behaviour. Thus, it was difficult to gain more of this knowledge during the COVID-19 lockdown. The medium through which people can know about healthy sexuality was much more focused on how to curtail COVID-19.

The qualitative results further corroborate the quantitative results on if the people receiving social assistance on livelihood/access to medical services. The majority of the respondents said they didn't receive any social assistance or palliatives during the lockdown. As a matter of fact, they said there was much hunger which caused sickness and even lead to death among the people. On the other hand, a few of the respondents said they received palliatives. An adult woman from Osun State and another from Enugu State confirmed it, while some only heard that people were getting palliatives but never reached them. Some of the excerpts are found in Figure 6.

Contextual factors hindering access to SRH services when there was a lockdown and when there was no lockdown

Factors identified to be hindering access to SRH services when there was lockdown were distance to the health facility, lack of means of transportation, and restricted movement. When there was no COVID-19 lockdown, factors hindering access to SRH services identified include poverty, religion, culture, ignorance, power relation, fear, shame, socio-cultural norms, and other perceptions mentioned. Factors hindering access to SRH are shown in Figure 7.

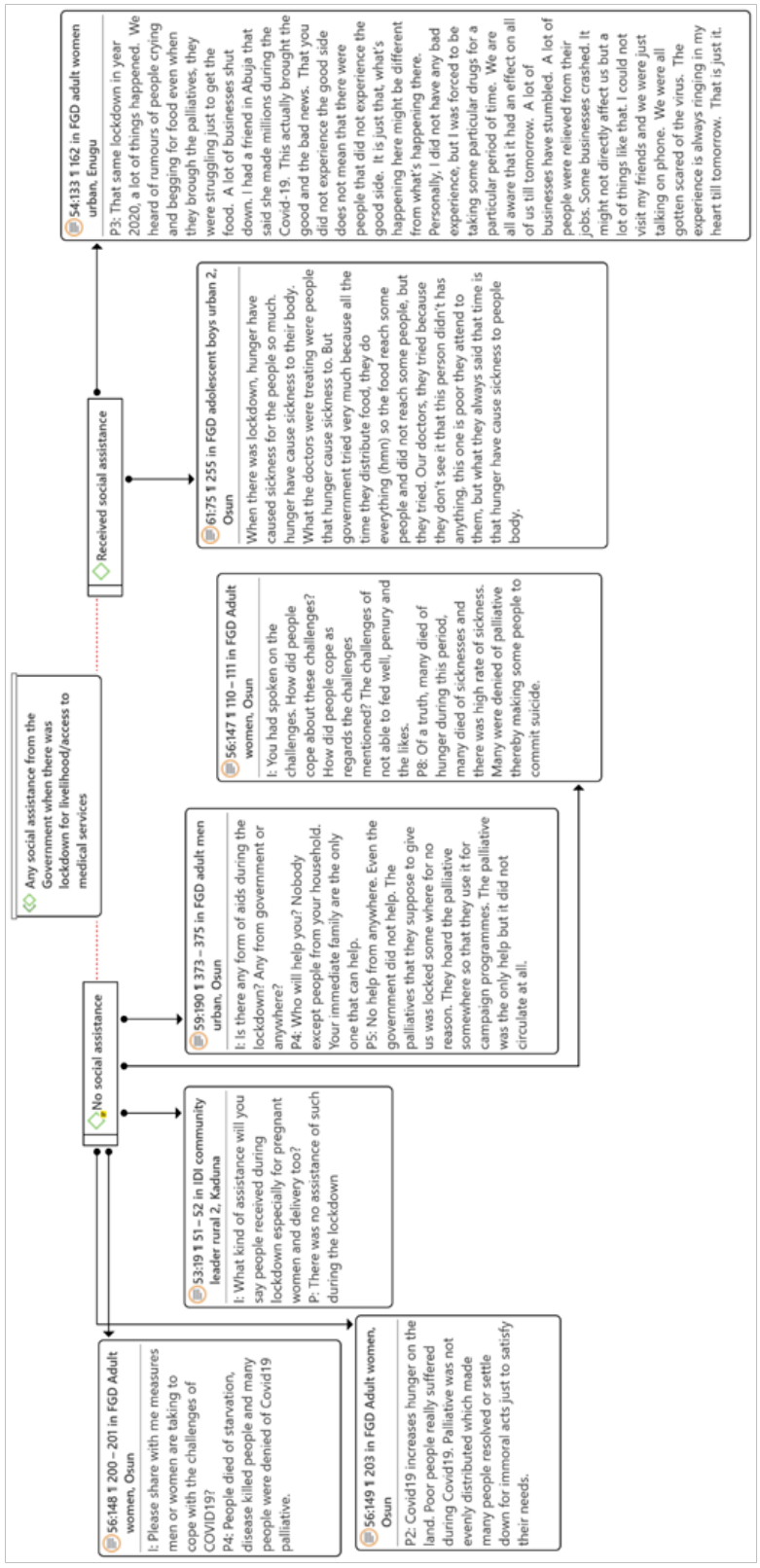


Figure 6: Network view showing social assistance received/not received when there was a lockdown

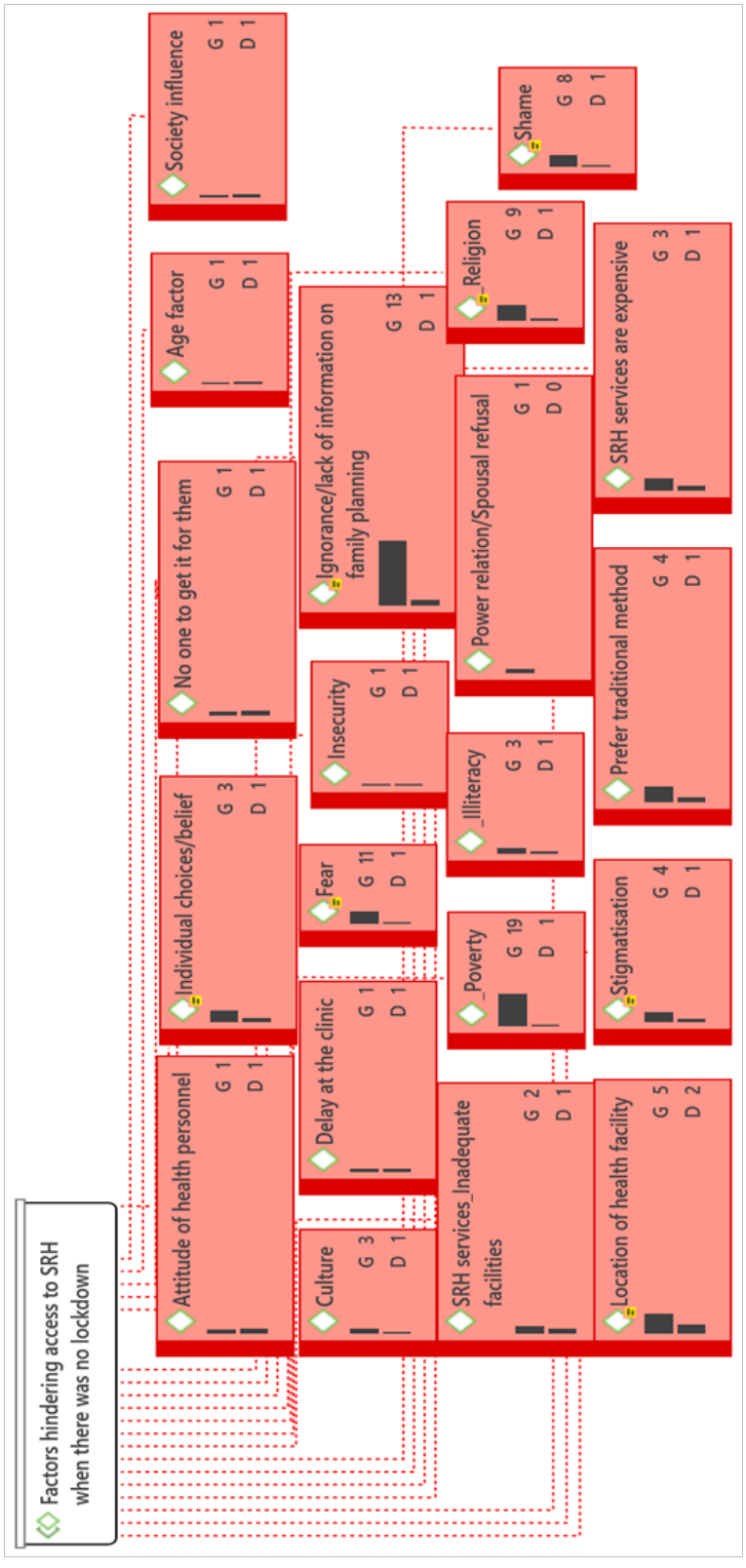


Figure 7: Network view showing factors hindering access to SRH services when there was no lockdown

6. Policy recommendations

A number of policy suggestions and recommendations to enhance access to health care and SRH services emanated from this study. The following suggestions and recommendations tilted more towards women, given that they often need these services more than their male counterparts.

i. Introduction of mobile health centres which will bring healthcare facilities closer to the people, especially women who need SRH and other health services as recourse to improve access to SRH services during the lockdown or any future national crisis, was strongly recommended by the respondents.

ii. Public awareness of the availability of mobile clinics and designated public health facilities for health care and SRH services could be achieved or strengthened through the various media outlets which include television, radio, dailies, social medical platforms (Twitter, Facebook, and Instagram), etc.

iii. It was further suggested that telemedicine, which enables video or phone appointments between a patient and health care practitioner should be encouraged during the lockdown, especially for women to conveniently have access to SRH information, counselling and Institutional services in urban settings where the level of education and exposure are relatively higher. They further suggested that, whether there is COVID-19 or not, government needs to empower people, especially women, by providing gainful employment, adequate access to quality education and improving livelihoods. This will empower them to be able to use telemedicine effectively, especially during a period of national crisis. With gainful employment and higher educational attainment, women will be able to afford mobile phones or laptops, call cards, and data to install the right App for them to have access to health personnel.

iv. In rural settings, where most people cannot afford data to access telemedicine on SRH services, it was suggested that the government should give a 'social assistance package on SRH services', particularly for women who need these services. Contraceptives such as condoms and pills could be packaged in form of social assistance and freely distributed and dropped at identified patients' doorsteps.

v. Further recommendation entails the creation of a special 'squad of qualified medical personnel who would provide both telemedicine and home-based/ delivery health care and SRH services for patients in their various homes, particularly for women.

vi. Given that women often need health care and SRH services more than men, it was suggested that special consideration should be given to women by creating an interactive App that could allow them to communicate their health care and SRH needs to medical personnel who could link them with designated home-based/ delivery caregivers.

vii. Further suggestions were also made on accessing SRH information and services. SRH information and how to access them should be made available, as much as possible, through social media outlets. When there was a lockdown, information and counselling were no longer accessible. The health system has been refocused to address only COVID-19 and life-threatening cases. New and existing FPC adopters might be in dire need of information and counselling. Thus, the social media platforms should be exploited while subsidizing data charges or providing free online access to websites that are specifically tailored towards health and SRH services.

viii. Setting up special hotlines that will be dedicated specially to prompt handling of reported cases of domestic violence between partners, and follow-up or counselling services. Moreover, a mobile court should be instituted for quick delivery of justice to victims.

7. Conclusion

These findings have great implications for health policy review and implementation, particularly during the period of an unprecedented crisis. The findings are in tandem with related studies which have recommended that government should gear up efforts and actions to further reduce incidences of gender inequality in health and access to health care. The findings of this study thus recommend that adequate arrangements should be put in place to facilitate and ensure equitable access to needed services during a time of national or global crisis. This can be achieved by setting up a quick health response or mobile clinics that could cater to urgent medical services for those who need urgent medical attention. Priority should further be given to women seeking medical services particularly sexual reproductive health care services, while women's empowerment, promotion of gender-friendly policies, and increased participation in the labour market should top the list of the economic agenda in most states' regions of the country.

Notes

1. The age range, 15-70 years, was used because the retirement age for some workers (e.g lecturers) is 70 years.

References

Arora, R. U. (2012). Gender inequality, economic development, and globalization: A state level analysis of India. *The Journal of Developing Areas,* 147–164.

Abdalla S., E. Katz and G. Darmstadt. 2021. "Gender and the impact of COVID-19 on demand for and access to health care: Analysis of data from Kenya, Nigeria and South Africa". *The Lancet Global Health,* 9(S7). https://doi.org/10.1016/S2214-109X(21)00115-7

Ahmed, S.A.K.S., M. Ajisola, K. Azeem, et al. 2020. "Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria, and Pakistan: Results of pre-COVID and COVID-19 lockdown stakeholder engagements". *BMJ Global Health*, 5: e003042. DOI: 10.1136/bmjgh-2020-003042

Aly, J., K.O. Haeger, A. Christy and A.M. Johnson. 2020. "Contraception access during the COVID-19 pandemic". *Contracept Reprod Med*, 5: 17. https://doi.org/10.1186/s40834-020-00114-9

Akande-Sholabi, W. and Y.A. Adebisi. 2020. "The impact of COVID-19 pandemic on medicine security in Africa: Nigeria as a case study". *Pan Afr Med. J.*, 35(Suppl 2): 73. DOI: 10.11604/pamj.supp.2020.35.2.23671

Akter, S. 2021. "The gender gap in COVID-19 mortality in the United States". *Feminist Economics*, 27(1-2): 30–47. DOI: 10.1080/13545701.2020.1829673

Azad, A.D., A.G. Charles, Q. Ding, A.W. Trickey and S.M. Wren. 2020. "The gender gap and healthcare: Associations between gender roles and factors affecting healthcare access in Central Malawi, June–August 2017". *Arch Public Health*, 78: 119. https://doi.org/10.1186/s13690-020-00497-w

Baudassé, T., & Bazillier, R. (2014). Gender inequality and emigration: Push factor or selection process?. *International Economics,* 139, 19–47.

Bertrand, J.T., R.J. Magnani and N. Rutenberg. 1996. *Evaluating Family Planning Programs: With Adaptations for Reproductive Health*. Carolina Population Center, the University of North Carolina at Chapel Hill.

Braveman, P. and L. Gottlieb. 2014. "The social determinants of health: It's time to consider the causes of the causes". *Public health reports,* 129(1_suppl2): 19–31.

Blinder, A. 1973. "Wage discrimination: Reduced form and structural estimates". *Journal of Human Resources,* 8(4): 436–55.

Caliendo, M. and S. Kopeinig. 2008. "Some practical guidance for the implementation of propensity score matching". *Journal of economic surveys*, 22(1): 31–72.

Centers for Medicare and Medicaid Services. 2019. "National health expenditure data". At https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-andReports/NationalHealthExpendData

Dalal J., I. Triulzi, A. James, B. Nguimbis, G. Dri, A. Venkatasubramanian, L.T. Royd, S. Mesa, C. Somerville, G. Turchetti, B. Stoll, J. Abate, F. Mboussou, B. Impouma, O. Keiser and F.C. Coelho. 2022. "COVID-19 mortality in women and men in sub-Sahara Africa: A cross-sectional study". *BMJ Global Health*, 6(11). http://dx.doi.org/10.1136/bmjgh-2021-007225

Dunlop, D.D., L.M. Manheim, J. Song and R.W. Chang. 2002. "Gender and ethnic/racial disparities in health care utilization among older adults". *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*, 57(4): https://doi.org/10.1093/geronb/57.4.S221

Endler, M., T. Al-Haidari, C. Benedetto, S. Chowdhury, J Christilaw, F. el Kak, D. Galimberti, C. Garcia-Moreno, M. Gutierrez, S. Ibrahim, S. Kumari, C. McNicholas, D.M. Flores, J. Muganda, A. Ramirez-Negrin, H. Senanayake, R. Sohail, M. Temmerman and K. Gemzell-Danielsson. 2021. "How the coronavirus disease 2019 pandemic is impacting sexual and reproductive health and rights and response: Results from a global survey of providers, researchers, and policy-makers". *Acta Obstetricia et Gynecologica Scandinavica,* 100(4). https://doi.org/10.1111/aogs.14043

Fawole, O.I., O.F. Bamiselu, P.A. Adewuyi and P.M. Nguku. 2016. "Gender dimensions to the Ebola outbreak in Nigeria". *Annals of African Medicine,* 15(1): 7–13. DOI: 10.4103/1596-3519.172554

Fayehun, F., B. Harris, F. Griffiths, N. Rizvi, P. Bakibinga and S.A.K.S. Ahmed. 2020. "COVID-19: How lockdowns affected health access in African and Asian slums". Conversation Media Group, October.

Ferraro, A. A., Rohde, L. A., Polanczyk, G. V., Argeu, A., Miguel, E. C., Grisi, S. J. F. E., & Fleitlich-Bilyk, B. (2017). The specific and combined role of domestic violence and mental health disorders during pregnancy on new-born health. *BMC pregnancy and childbirth,* 17(1), 1–10.

Fortin, N. M. (2008), 'The gender wage gap among young adults in the United States: The importance of money versus people', Journal of Human Resources 43(4), 884–918.

Galea S, Ahern J, Rudenstine S, Wallace Z, Vlahov D: Urban built environment and depression: a multilevel analysis. J Epidemiol Community Health. 2005, 59 (10): 822-827. 10.1136/jech.2005.033084.

Gunja, M.Z., R. Tikkanen, S. Seervai and S.R. Collins. 2018. "What is the status of women's health and health care in the U.S. compared to ten other countries?" The Commonwealth Fund. https://doi.org/10.26099/wy8a-7w13

Hawkes, S. and K. Buse. 2020. "Socially constructed determinants of health: The case for synergies to arrive at the gendered global health law". *Public health ethics*, 13(1): 16–28.

Holder, L., Rashid, M., Saunders, N., Chiu, M., Kurdyak, P., Gandhi, S. ... & Vigod, S. (2021). Incidence of access to ambulatory mental health care prior to a psychiatric emergency department visit among adults in Ontario, 2010-2018. *JAMA network open,* 4(4), e215902–e215902.

Ibrahim, R.L., K.B. Ajide and O. Olatunde Julius. 2020. "Easing of lockdown measures in Nigeria: Implications for the healthcare system". *Health policy and technology*, 9(4): 399–404. https://doi.org/10.1016/j.hlpt.2020.09.004

International Planned Parenthood Federation (IPPF). 2020. "COVID-19 pandemic cuts access to sexual and reproductive healthcare for women around the world". International Planned Parenthood Federation, April.

IPAS. 2020. "Impact of COVID-19 lockdown on access to safe abortion in Nigeria". https://www.ipas.org/wp-content/uploads/2021/09/Impact-of-COVID-19-Lockdown-on-Access-to-Safe-Abortion-in-Nigeria-NGCOVIDE21.pdf Accessed the 30 November 2021.

Jann, B. 2008. 'The Blinder–Oaxaca decomposition for linear regression models". *Stata Journal,* 8(4): 453–79.

Kassenboehmer, S.C. and M.G. Sinning. 2014. "Distributional changes in the gender wage gap". *Industrial & Labor Relations Review*, 67(2): 335–61.

Klein, S.L., C. Passaretti, M. Anker, P. Olukoya and A. Pekosz. 2010. "The impact of sex, gender and pregnancy on 2009 HINI disease". *Biology of sex differences,* 1(5). DOI: 10.1186/2042-6410-1-5

Kotlar, B., E. Gerson, S. Petrillo, A. Langer and H. Tiemeier. 2021. "The impact of the COVID-19 pandemic on maternal and perinatal health: A scoping review". *Reproductive Health,* 18(10). https://doi.org/10.1186/s12978-021-01070-6

Krubiner, C., J.M. Keller and J. Kaufman. 2020. "Balancing the COVID-19 response with wider health needs: Key decision-making considerations for low- and middle-income countries". In *CGD Note* (Issue May). Center for Global Development.

Kullgren, J.T., C.G. McLaughlin, N. Mitra and K. Armstrong. 2012. "Nonfinancial barriers and access to care for US adults". *Health Services Research*, 47(1): 462–85.

Research Group on Methods for the Natural Regulation of Fertility. 2001. "Periodic abstinence and calendar method use in Hungary, Peru, the Philippines, and Sri Lanka". *Contraception*, 64: 209–15. DOI: 10.1016/s0010-7824(01)00252-9

Langer, D. A., Wood, J. J., Wood, P. A., Garland, A. F., Landsverk, J., & Hough, R. L. (2015). Mental health service use in schools and non-school-based outpatient settings: Comparing predictors of service use. *School mental health*, 7(3), 161–173.

Lotta, G., Coelho, V. S., & Brage, E. (2021). How Covid-19 has affected frontline workers in Brazil: a comparative analysis of nurses and community health workers. Journal of Comparative Policy Analysis: *Research and Practice*, 23(1), 63–73.

Mackenbach, J. (1996). The contribution of medical care to mortality decline: McKeown revisited. *Journal of clinical epidemiology*, 49(11), 1207–1213.

McGinnis, J. M., & Foege, W. H. (1993). Actual causes of death in the United States. *Jama*, 270(18), 2207–2212.

Manuel, J.I. 2018. "Racial/ethnic and gender disparities in health care use and access". *Health Services Research,* 53(3). https://doi.org/10.1111/1475-6773.12705

Mansour, M., Leven, E., Muellers, K., Stone, K., Mendu, D. R., & Wajnberg, A. (2020). Prevalence of SARS-CoV-2 antibodies among healthcare workers at a tertiary academic hospital in New York City. *Journal of general internal medicine*, 35(8), 2485–2486.

McCarthy, J. 2017. "U.S. women more likely than men to put off medical treatment". Gallup: Wellbeing, December 6. At https://news.gallup.com/poll/223277/ women-likely-men-put-off-medical-treatment.aspx

McGinnis, J.M., P. Williams-Russo and J.R. Knickman. 2002. "The case for more active policy attention to health promotion". *Health Aff (Millwood)*, 21: 78–93.

Mehra, A., Niraula, A., Kafle, K., Deo, S. P., Gupta, A. K., Singh, B., ... & Grover, S. (2020). Prevalence of anxiety and depression among the healthcare workers in Nepal during the COVID-19 pandemic. *Asian journal of psychiatry,* 54, 102260.

Navarro, V. 2009. "What we mean by social determinants of health". *International Journal of Health Services*, 39(3): 423–41.

National Population Commission (NPC) [Nigeria] & ICF. 2019. Nigeria Demographic and Health Survey 2018 [Internet]. Abuja, Nigeria, and Rockville, Maryland, USA. https://www.dhsprogram.com/pubs/pdf/FR359/FR359.pdf

Neumark, D. 1988. "Employers' discriminatory behaviour and the estimation of wage discrimination". *Journal of Human Resources*, 23(3): 279–95.

Neumayer, E. and T. Plümper. 2007. "The gendered nature of natural disasters: The impact of catastrophic events on the gender gap in life expectancy, 1981–2002". *Annals of the Association of American Geographers*, 97(3): 551–66. DOI: 10.1111/j.1467-8306.2007.00563.

Nonyelu, Au. N. & Nwankwo, I. U. (2014). Social determinants of differential Access to Health Services across Five States of Southeast Nigeria. European Scientific Journal, Special edition 3 pp. 286–296

Noymer, A. 2010. "The 1918 influenza pandemic affected sex differentials in mortality: Comment on Sawchuk". *American journal of physical anthropology*, 143(4): 499–500. DOI: 10.1002/ajpa.21405

Nwoke Emmanuel Awucha 1 , Ofomata Chinelo Janefrances 2, Amadi Chima Meshach 3 , Jibuaku Chiamaka Henrietta 2 , Akahome Ibilolia Daniel 4, and Nwagbo Esther Chidiebere (2020)Impact of the COVID-19 Pandemic on Consumers' Access to Essential Medicines in Nigeria. Volume 103: Issue 4 pp1630–1634. DOI: https://doi.org/10.4269/ajtmh.20-0838

Oaxaca, R. 1973. "Male-female wage differentials in urban labour markets". *International Economic Review*, 14(3): 693–709.

Oaxaca, R.L. and M.R. Ransom. 1994. "'On discrimination and the decomposition of wage differentials". *Journal of Econometrics*, 61(1): 5–21.OECD (2020). OECD Policy Responses to Coronavirus (COVID-19): Women at the core of the fight against COVID-19 crisis. Women at the core of the fight against COVID-19 crisis (oecd.org)

Ombere, S.O. 2021. "Access to maternal health services during the COVID-19 pandemic: Experiences of indigent mothers and health care providers in Kilifi County, Kenya". *Frontiers in Sociology,* 6: 53. https://doi.org/10.3389/fsoc.2021.613042

Omolase, C., S. Faturoti and B. Omolase. 2011. "Awareness of family planning amongst antenatal patients in a Nigerian community: An exploratory study". *Ann Ibadan Postgrad Med*., 7(1): 2–5.

O'Laughlin, B. 2016. "Pragmatism, structural reform and the politics of inequality in global public health". *Development and Change*, 47(4): 686–711.

Organisation for Economic Co-operation and Development (OECD). 2020. OECD Policy Responses to Coronavirus (COVID-19). Women at the core of the fight against COVID-19 crisis. Organisation for Economic Co-operation and Development, April. At https://www.oecd.org/coronavirus/policy-responses/women-at-the-core-of-the-fight-against-covid-19-crisis-553a8269/

Pan American Health Organisation. 2021. Epidemiological Update: Coronavirus Disease (COVID-19). 9 February 2021. At https://iris.paho.org/handle/10665.2/53378

Presidential Task Force on COVID-19. 2020. "Implementation of guidance for lockdown policy". https://doi.org/10.1016/j.solener.2019.02.027

Price, N.L. and K. Hawkins. 2007. "A conceptual framework for the social analysis of reproductive health". *J Health Popul Nutr.,* 25(1): 24–36.

Purdy, C. 2020. "Opinion: How will COVID-19 affect global access to contraceptives — and what can we do about it?" Devex, March.

Qiao, J. (2020). What are the risks of COVID-19 infection in pregnant women?. *The lancet,* 395(10226), 760–762.

Riley, T., E. Sully, Z. Ahmed and A. Biddlecom. 2020. "Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low- and middle-income countries". *International Perspectives on Sexual and Reproductive Health,* 46: 73–76. https://doi.org/10.1363/46e9020

Saikia, D., & Das, K. K. (2014). Access to public health-care in the rural northeast India. The NEHU journal, 12(2):77–100

Salganicoff, A., U. Ranji, A. Beamesderfer and N. Kurani. 2014. "Women and health care in the early years of the ACA: Key Findings from the 2013 Kaiser women's health survey". Publication #8590. Henry J. Kaiser Family Foundation, Menlo, CA.

Samulowitz, A., Gremyr, I., Eriksson, E., & Hensing, G. (2018). "Brave men" and "emotional women": A theory-guided literature review on gender bias in health care and gendered norms towards patients with chronic pain. *Pain Research and Management*, 2018.

Stein, D., K. Ward, C. Cantelmo and HP+. 2020. *Estimating the Potential Impact of COVID-19 on Mothers and Newborns in Low- and Middle-Income Countries.* Health Policy Plus.

Swinkels, D. W., Wolffenbuttel, B. H., Wouters, H. J., van der Klauw, M. M., de Witte, T., Stauder, R. & Huls, G. (2019). Association of anemia with health-related quality of life and survival: a large population-based cohort study. *haematologica*, 104(3), 468.

United Nations International Children's Emergency Fund (UNICEF). 2020. "Demand for and access to family planning services among young married women during the COVID-19 crisis". COVID-19 Research Results Brief No. 6. United Nations International Children's Emergency Fund.

USAID/SHOPS Plus. 2019. "Sources of family planning: Nigeria". At https://www.shopsplusproject.org/sites/default/files/resources/Sources of Family Planning in Nigeria.pdf

Vora, K.S., S. Saiyed and S. Natesan. 2020. "Impact of COVID-19 on family planning services in India". *Sexual and reproductive health matters*, 28(1): 1785378.

Walby, S. 2004. "The European Union and gender equality: Emergent varieties of gender regime". *Social Politics: International Studies in Gender, State & Society,* 11(1): 4–29.

White H, G. E., Rabow, M. W., Huang, C. H. S., & Tucker, R. O. (2021). Witnesses and victims both: healthcare workers and grief in the time of COVID-19. *Journal of Pain and Symptom Management*, 62(3), 647–656.

Wheeler, S. M., & Bryant, A. S. (2017). Racial and ethnic disparities in health and health care. *Obstetrics and Gynecology Clinics*, 44(1), 1–11.

World Health Organization. (2019). *Department of Noncommunicable Diseases and Mental Health: Our goal is to build a better, healthier future for people in the Region* (No. WHO-EM/NMH/001/E). World Health Organization. Regional Office for the Eastern Mediterranean.

World Health Organization (WHO). 2004. Measuring Access to Reproductive Health Services. WHO Report, No. WHO/RHR/04.11. Geneva, World Health Organization.

Young, G., Fort, L., & Danner, M. (1994). Moving fromthe status of women'togender inequality': Conceptualisation, social indicators and an empirical application. *International Sociology,* 9(1), 55–85.

Zimmerman, F. J., & Anderson, N. W. (2019). Trends in health equity in the United States by race/ethnicity, sex, and income, 1993-2017. *JAMA network open*, 2(6), e196386–e196386.

Appendixes

Appendix A: Additional tables

Table A1: Descriptive statistics of variables

Variables	n	%
Gender		
Male	5702	50.4
Female	5607	49.6
Age		
0-17 years	5878	52
18-45 years	3935	34.8
46 and above years	1496	13.2
Currently attending school		
Yes	3373	84.5
No	618	15.5
Employment status		
Unemployed	1181	19
Employed	5026	81.0
Metropolitan status		
Rural	8413	74.4
Urban	2896	25.6
Relationship to head of household		
Other household	9658	85.4
Head of household	1651	14.6
Gender of the head of household		
Male-headed household	1370	81.7
Female-headed household	308	18.3
Receipt of social assistance		
No	11184	98.9
Yes	125	1.1

continued next page

Table A1 Continued

Variables	n	%
Geopolitical zones		
North Central	1868	16.5
North East	1818	16.1
North West	3556	31.4
South East	1204	10.6
South-South	1616	14.3
South West	1247	11
States		
Abia	285	2.5
Adamawa	202	1.8
Akwa Ibom	305	2.7
Anambra	253	2.2
Bauchi	561	5
Bayelsa	222	2
Benue	425	3.8
Borno	233	2.1
Cross River	232	2.1
Delta	261	2.3
Ebonyi	192	1.7
Edo	186	1.6
Ekiti	120	1.1
Enugu	261	2.3
Gombe	235	2.1
Imo	214	1.9
Jigawa	289	2.6
Kaduna	769	6.8
Kano	668	5.9
Katsina	872	7.7
Kebbi	155	1.4
Kogi	93	0.8
Kwara	246	2.2
Lagos	190	1.7
Nasarawa	116	1
Niger	510	4.5
Ogun	251	2.2
Ondo	185	1.6
Osun	99	0.9

continued next page

Table A1 Continued

Variables	n	%
States		
Oyo	404	3.6
Plateau	429	3.8
Rivers	410	3.6
Sokoto	323	2.9
Taraba	364	3.2
Yobe	223	2
Zamfara	479	4.2
FCT	49	0.4
Needed medical services		
No	5381	47.6
Yes	5928	52.4

Note: Sample weights have been applied.
Source: Authors' calculations based on Nigeria COVID-19 Phone Survey.

Table A2: Descriptive statistics of variables by gender

Variables	Male		Female	
	n	%	n	%
Age				
0-17 years	3041	53.3	2837	50.6
18-45 years	1920	33.7	2015	35.9
46 and above years	742	13	755	13.5
Currently attending school				
Yes	1760	86.3	1614	82.7
No	280	13.7	338	17.3
Employment status				
Unemployed	576	18.7	605	19.3
Employed	2499	81.3	2527	80.7
Metropolitan status				
Rural	4237	74.3	4176	74.5
Urban	1465	25.7	1431	25.5
Relationship with head of household				
Other household members	4353	76.3	5305	94.6
Head of household	1349	23.7	303	5.4
Receipt of social assistance				
No	5622	98.6	5562	99.2
Yes	79	1.4	45	0.8

continued next page

Table A2 Continued

Variables	Male		Female	
	n	%	n	%
Geopolitical zones				
North Central	982	17.2	885	15.8
North East	940	16.5	878	15.7
North West	1835	32.2	1721	30.7
South East	568	10	636	11.3
South-South	772	13.5	844	15.1
South West	604	10.6	643	11.5
State				
Abia	143	2.5	142	2.5
Adamawa	102	1.8	101	1.8
Akwa Ibom	135	2.4	170	3
Anambra	133	2.3	120	2.1
Bauchi	275	4.8	286	5.1
Bayelsa	121	2.1	101	1.8
Benue	211	3.7	214	3.8
Borno	132	2.3	101	1.8
Cross River	102	1.8	130	2.3
Delta	139	2.4	122	2.2
Ebonyi	81	1.4	111	2
Edo	91	1.6	94	1.7
Ekiti	56	1	64	1.1
Enugu	116	2	145	2.6
Gombe	130	2.3	105	1.9
Imo	96	1.7	118	2.1
Jigawa	159	2.8	131	2.3
Kaduna	400	7	369	6.6
Kano	356	6.2	313	5.6
Katsina	434	7.6	438	7.8
Kebbi	84	1.5	71	1.3
Kogi	51	0.9	42	0.8
Kwara	129	2.3	117	2.1
Lagos	96	1.7	93	1.7
Nasarawa	74	1.3	43	0.8
Niger	268	4.7	241	4.3
Ogun	120	2.1	131	2.3
Ondo	81	1.4	103	1.8

continued next page

Table A2 Continued

Variables	Male		Female	
	n	%	n	%
Osun	50	0.9	48	0.9
Oyo	201	3.5	203	3.6
Plateau	225	4	203	3.6
Rivers	183	3.2	227	4
Sokoto	180	3.2	143	2.6
Taraba	190	3.3	173	3.1
Yobe	111	1.9	112	2
Zamfara	222	3.9	257	4.6
FCT	24	0.4	24	0.4
Needed medical services				
No	2708	47.5	2673	47.7
Yes	2993	52.5	2934	52.3

Note: Sample weights have been applied.
Source: Authors' calculations based on Nigeria COVID-19 Phone Survey.

Table A3: Descriptive statistics of males and females who needed medical services during COVID-19 lockdown

Variables	Female		Male	
	n	%	n	%
Age				
0-17 years	1540	52.7	1718	57.2
18-45 years	1019	34.8	912	30.4
46 and above years	365	12.5	375	12.5
Currently attending school				
Yes	844	84.7	978	86.9
No	153	15.3	147	13.1
Employment status				
Unemployed	306	19.2	260	17.4
Employed	1290	80.8	1232	82.6
Metropolitan status				
Rural	2275	77.8	2325	77.4
Urban	649	22.2	679	22.6
Relationship to head of household				
Other household members	2811	96.1	2365	78.7
Head of household	113	3.9	639	21.3

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Table A3 Continued

Variables	Female		Male	
	n	%	n	%
Receipt of social assistance				
No	2895	99	2952	98.3
Yes	29	1	52	1.7
Geopolitical zones				
North Central	377	12.9	432	14.4
North East	553	18.9	596	19.8
North West	1130	38.6	1188	39.5
South East	404	13.8	339	11.3
South-South	258	8.8	267	8.9
South West	201	6.9	182	6
States				
Abia	86	2.9	83	2.8
Adamawa	58	2	60	2
Akwa Ibom	59	2	53	1.8
Anambra	78	2.7	88	2.9
Bauchi	183	6.3	185	6.1
Bayelsa	29	1	47	1.6
Benue	86	2.9	98	3.3
Borno	67	2.3	101	3.3
Cross River	17	0.6	31	1
Delta	57	1.9	51	1.7
Ebonyi	77	2.6	53	1.8
Edo	27	0.9	32	1.1
Ekiti	18	0.6	15	0.5
Enugu	91	3.1	58	1.9
Gombe	70	2.4	83	2.8
Imo	72	2.5	58	1.9
Jigawa	67	2.3	93	3.1
Kaduna	263	9	291	9.7
Kano	223	7.6	252	8.4
Katsina	295	10.1	265	8.8
Kebbi	52	1.8	57	1.9
Kogi	7	0.2	10	0.3
Kwara	43	1.5	49	1.6
Lagos	26	0.9	33	1.1
Nasarawa	17	0.6	36	1.2

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Table A3 Continued

Variables	Female		Male	
	n	%	n	%
States				
Niger	123	4.2	124	4.1
Ogun	47	1.6	27	0.9
Ondo	34	1.2	32	1.1
Osun	13	0.4	13	0.4
Oyo	63	2.2	61	2
Plateau	95	3.2	106	3.5
Rivers	70	2.4	53	1.8
Sokoto	82	2.8	108	3.6
Taraba	105	3.6	110	3.7
Yobe	70	2.4	58	1.9
Zamfara	148	5	122	4.1
FCT	8	0.3	9	0.3

Note: Sample weights have been applied.
Source: Author's calculations based on Nigeria COVID-19 Phone Survey.

Appendix B: Focus group discussion and in-depth interview guide

Interview Guide for Adult FGD

Scenario

During the COVID-19 lockdown, there was a man who had a sexually transmitted infection and needed to see a doctor. There was another woman who also needed to access family planning services. How did you think they were able to access sexual reproductive health services during this period? Tell me your opinion about this.

FIRST, LET US DISCUSS SOME GENERAL QUESTIONS

Explore gender, socio-cultural factors and SRH

1. What do you perceive to be the sexual roles of men and women in the household?

2. During the COVID-19 lockdown, did people have any reason to access medical services? Were you able to access the services you needed? If yes, for what purpose. If no, what option(s) were you able to resolve in tackling the challenges?

3. What do you understand about sexual and reproductive health? Key elements of reproductive health care: family planning; maternal and newborn care; prevention and management of unsafe abortion; prevention and management of reproductive tract and sexually transmitted infections (RTI/STIs), including HIV/AIDS; promotion of healthy sexuality; and gender-based violence.

4. Did you have many reasons to access sexual and reproductive health (SHR) services (a) when there was a COVID-19 lockdown (b) when there was no COVID-19 lockdown?

5. Which of the structures of sexual reproductive health services are you aware of or do you know? (a) formal (b) indigenous

Access to sexual and reproductive health

6. Which of the sexual and reproductive health services are available for your use (a) when there was a COVID-19 lockdown (b) when there was no COVID-19 lockdown?

7. Are the sexual and reproductive health services affordable, acceptable, appropriate and of quality care (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown? Let them discuss the affordability, acceptability, appropriateness, and the quality care in accessing SRH services.

Family planning

8. Which of the family planning services did you use/access (a) when there was a COVID-19 lockdown (b) when there was no COVID-19 lockdown?

9. What were your experiences accessing those services during the COVID-19 pandemic lockdown?

Maternal and newborn care/male (in)fertility

10. What are your perceptions about accessing maternal care (antenatal, postnatal) services when there was a COVID-19 lockdown?

11. What about the issue of male infertility during the lockdown?

Prevention and management of unsafe abortion

12. How did people manage unsafe abortion when there was a COVID-19 lockdown?

Prevention and management of reproductive tract and sexually transmitted infections (RTI/STIs), including HIV/AIDS

13. Were people able to access medical services for the prevention and management of STI/HIV?

14. What was your opinion on accessing those services during the COVID-19 pandemic lockdown?

Promotion of healthy sexuality

15. How knowledgeable do you feel about SRH matters?

16. How did you learn about relationships, sex, contraception, STIs and HIV/AIDS? Do you feel that the information you have received has been adequate or there is anything you would like to learn more about as regards sex, pregnancy, contraception, STIs, and HIV/AIDS?

Right to healthy and respectful relationships (gender-based violence)

17. Without mentioning names or indicating anyone specifically, what types of abuse of women and girls are you aware that happened when there was lockdown in this community?
    Probe for physical, sexual, and emotional abuse, female circumcision, rape, transactional sex, forced early marriage, child abuse, and obstetric fistula. Who are the perpetrators and the victims in the community, etc.

18. How common is each form of the above-mentioned abuse in the community during the lockdown?

19. Were the victims able to access sexual and reproductive health services? In the case of rape and domestic violence victims.

20. What do you think were the causes of the abuse?

COVID-19 and perceptions of the impact of gender-based violence

21. Kindly share with me some of the things that people are now facing in their various homes since COVID-19 started, especially during the lockdown, in Nigeria over a year ago.

22. Has any member of this household been a victim of domestic sexual violence before?

23. What caused it and how was the case handled?

24. Please tell me some of the events/challenges that many homes in your community faced during the COVID-19 restrictions on movement.

25. How will you describe the effects of the lockdown on households in your community in general, and how do you think this differs across gender?
    Probe effects on:
    - Livelihoods,
    - Income,
    - Tensions/conflicts in households,
    - Cases of violence/abuse during the lockdown,
    - Sources of help during the periods, and
    - Survival measures among women/men, boys/girls.

26. Please share with me the measures men/women are taking to cope with the challenges of COVID-19.

Probe measure along:

- Livelihood,
- Income,
- Gender roles and tensions in the home font,
- Schooling of children,
- Feeding, and
- Cost of living.

27. What kind of impact do the COVID-19 lockdowns have on family relationships?
    Probe:
    - Domestic violence (heightened violence between husband and wife),
    - Prostitution, and
    - Early forced marriage,

Contextual factors

28. What are the factors hindering access to sexual and reproductive health services (a) when there was a COVID-19 lockdown (b) when there was no COVID-19 lockdown (individual, familial, and community factors)?
    Probe:
    - **Inter- and intra-household resources allocation and decision**

    Probe the following areas: gender roles at the household level: rights to assets and properties; rights to decision making; sexual rights, etc.

    i. How would you describe the value the community places on the education of the boy/girl child, etc. (note differences in treatment and areas of similarities).

    ii. What is your perception of society's view of preferring a male child over a female child?

    iii. Do you think that religion influences/contributes to access to sexual and reproductive health?

    iv. As per household income, who do you think should oversee the allocation of the resources to household members?

    v. Who do you think should bring more income to the household?

    vi. Do you think men should have more authority over decision-making and resource allocation in the household?

vii. Who makes most decisions in your household about (a) income/money (how to spend it, who gets what, who gives what, who takes what, etc.? (b) sexual and reproductive health such as family planning (c) where to access sexual and reproductive health services.

Inter- and intra-household resources allocation and decisions: It is also increasingly recognized that intra-household resource allocation and decision-making are affected by multiple factors including individual agency, power and information asymmetries, supra-household social relations, non-household institutions, inequality, power relations within and between households, polygamy, relationship to household head, access to assets (such as access to land, credit, cash, equipment, and shelter), gender, socio-cultural norms, poverty, and religion.

- **Poverty**

1. The impacts of increased poverty levels, due to the pandemic, on girls and women. Has there been an increase in early (forced) marriages? Have there been impacts on transactional sex (sex work) because of increased poverty levels?

   i. Do you think that COVID-19 lockdown has created an opportunity for sexual promiscuity? (Probe: young people engaging in risky sexual behaviour and early (forced) marriage.

   ii. What are some of the socio-cultural issues that you think might influence sexual promiscuity, early marriage, and unwanted pregnancy?

   - Inequality: Differences in socioeconomic status.
   - Power relations: This has to do with the dominance of authority or power in the household or in a setting.
   - Socio-cultural norms: culture, value orientation, etc.
   - Perceptions: People's views about a matter or an issue.

29. Do you feel that there has been an increase in childbearing as a result of the COVID-19 lockdown?

30. What are the negative impacts of the lockdown measures on the delivery of and access to sexual and reproductive health (SRH) information and services, including family planning and contraceptives (FPC)?

31. What are your suggestions to improve access to sexual and reproductive health during a lockdown?

32. How do you think that parents, community and government could improve access to sexual and reproductive health services?

33. In your opinion, what parental, community and government supports could enhance access to sexual and reproductive health services?

34. Do you have any further comments?

FGD Interview Guide for Adolescents

1. How do young people of your age find out about relationships, sex, STIs and HIV/AIDS?

2. What is the extent of sexual activity among adolescents in this community during COVID-19? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

3. What do you know about SRH services? Can you access them? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

4 How would you describe the prevalence of STIs, HIV/AIDS and early pregnancies among adolescents in your society? What factors influence adolescents to engage in unsafe sexual and reproductive practices that could lead to SRH problems?

5. Do young people discuss issues of sexuality and reproduction? What discussion do young people have about sex, relationships, contraception, STI, and HIV/AIDS?

6. Without mentioning names or indicating anyone specifically, what types of abuse of women and girls are you aware that happened when there was lockdown in this community?
   Probe for: physical, sexual and emotional abuse, female circumcision, rape, transactional sex, forced early marriage, child abuse, and obstetric fistula. Who are the perpetrators and the victims in the community, etc.?

7. Were the victims able to access sexual and reproductive health services? In the case of rape and domestic violence victims (a) when there was a COVID-19 lockdown and (b) when there was no COVID-19 lockdown?

8. What measures do you think are used to prevent STIs, HIV/AIDS, and early pregnancies in your society during COVID-19 lockdown?

9. What roles did schools, communities, families, and religious institutions play in shaping adolescents' sexual and reproductive health behaviour during COVID-19 lockdown?

10. What roles do cultural/social norms play in shaping sexual behaviour in your community? (Probe about gender, stigma, norms, and traditions).

11. What influences do your peers have on your sexual and reproductive practices?

12. What roles do institutions like churches/mosques, schools and others play in shaping young people's sexual and reproductive behaviour?

13. What role do you think that the government/political system should play in promoting SRH for the youth during pandemics?

14. What impact has the availability of SRH services had on the utilization of SRH by adolescents during COVID-19 (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

15. What factors do you feel could lead to reduced utilization of SRH services by adolescents during the COVID-19 lockdown?

16. How would you describe the quality of care in the SRH facility during the COVID-19 lockdown?

17. How would you like the quality of care at an SRH facility to be during the COVID-19 lockdown?

18. What recommendations would you make towards making SRH programmes in order to attract more adolescents and adults to use the services during the COVID-19 lockdown?

Access to sexual and reproductive health and preventive measures used

19. What prevention measures do you think that most adolescents have been using to prevent SRH problems: STIs, HIV/AIDS, and early pregnancy?

20. What are the factors that you perceive could enhance or hinder adolescents from adopting preventive measures for SRH problems during the COVID-19 lockdown?

21. Do you have time to discuss with your sexual partners issues related to sex, contraception, STI, HIV/AIDS, and early and unwanted pregnancy?

22. Did you hear/know about availability of any special SRH services during the COVID-19 lockdown? Who uses these services and why? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

23. Which of the sexual reproductive health services are available for your use (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

24. What comment would you give on the effect of the location and setting of SRH services to attracting adolescents to use the services during the lockdown?

25. Are the sexual reproductive health services affordable, acceptable, appropriate, and of quality care (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown? Let them discuss the affordability, acceptability, appropriateness, and the quality of care in accessing SRH services.

26. What factors could hinder adolescents from using such services during COVID-19 (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

27. What factors could facilitate adolescents from using such services during COVID-19 (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

28. What do you think could be done in order to attract more adolescents to SRH services at health facilities during a pandemic?

29. How would you like the quality of services at SRH facility to be like so that you would be interested to visit the facility during a pandemic?

What are the factors hindering access to sexual and reproductive health services during and after lockdown (individual, familial, and community factors)

Probe:

- Inter- and intra-household resources allocation and decision-making,
- Poverty,
- Inequality,
- Power relations,
- Socio-cultural norms, and
- Perceptions.

30. What are the negative impacts of the lockdown measures on the delivery of and access to sexual and reproductive health (SRH) information and services, including family planning and contraceptives (FPC)?

31. What are your suggestions to improve access to sexual and reproductive health during a lockdown?

32. How do you think that parents, community, and government could improve access to sexual and reproductive health services?

33. In your opinion, what parental, community, and government supports could enhance access to sexual and reproductive health services?

34. Do you have any further comments?

IDI for Community and Religious Leaders

1. Do you think that people were able to access the medical services needed during the COVID-19 lockdown? And how does it differ across gender?

2. What are your opinions/perceptions about access to sexual and reproductive health services during the COVID-19 lockdown?

3. Without mentioning names or indicating anyone specifically, what types of abuse of women and girls are you aware that happened when there was lockdown in this community?

4. Probe for physical, sexual and emotional abuse, female circumcision, rape, transactional sex, forced early marriage, child abuse, and obstetric fistula. Who are the perpetrators and the victims in the community, etc.?

5. Were the victims able to access sexual and reproductive health services? In case of rape, domestic violence victims (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

6. Were individuals or households able to access medical services which specifically relate to family planning services, sexual and reproductive health facilities, domestic violence, male (in)fertility services, incidences of unwanted pregnancy, amongst others? And how do you think that access differ by gender?

7. Does the public know about getting information on healthy sexuality? Probe for how they get information and knowledge.

8. Can you describe the pattern of accessing sexual and reproductive health services during the lockdown? Were people able to access them, which of them were available during the COVID-19 lockdown, what were the challenges, etc.?
   Probe for their opinions on:
   - Availability,
   - Affordability,

- Acceptability,
- Appropriateness, and
- Quality care in accessing SRH services.

Contextual factors

9. What are the factors hindering access to sexual and reproductive health services (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown (individual, familial, and community factors)?
   Probe:

Inter- and intra-household resources allocation and decision-making

Probe the following areas: gender roles at the household level: rights to assets and properties; rights to decision-making; sexual rights, etc.

i. How would you describe the value the community places on the education of the boy/girl child, etc.? Note differences in treatment and areas of similarities.

ii. What is your perception about society's view of preferring a male child over a female child?

iii. Do you think that religion influences/contributes to access to sexual and reproductive health?

iv. As per household income, who do you think should oversee the allocation of the resources to household members?

v. Who do you think should bring more income to the household?

vi. Do you think men should have more authority over decision-making and resource allocation in the household?

vii. Who makes most decision in your household about (a) income/money (how to spend it, who gets what, who gives what, who takes what, etc.? (b) sexual and reproductive health such as family planning (c) where to access sexual and reproductive health services?

Inter- and intra-household resources allocation and decision: It is also increasingly recognized that intra-household resource allocation and decision-making are affected by multiple factors including individual agency, power and information asymmetries, supra-household social relations, and non-household institutions, inequality, power

relations within and between households, polygamy, relationship to household head, access to assets (such as access to land, credit, cash, equipment, and shelter), gender, socio-cultural norms, poverty, religion.

Poverty

10. The impacts of increased poverty levels, due to the pandemic, on girls and women. Has there been increase in early (forced) marriages? Have there been impacts on transactional sex (sex work) because of increased poverty levels?

    i. Do you think that COVID-19 lockdown has created opportunity for sexual promiscuity? (Probe: young people engaging in risky sexual behaviour and early (forced) marriage.

    ii. What are some of the socio-cultural issues that you think might influence sexual promiscuity, early marriage, and unwanted pregnancy?

        - Inequality: Differences in socioeconomic status.
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        - Socio-cultural norms: culture, value orientation, etc.
        - Perceptions: People's views about a matter or an issue.

11. Do you feel that there has been an increase in childbearing as a result of the COVID-19 lockdown?

12. What are the negative impacts of the lockdown measures on the delivery of and access to sexual and reproductive health (SRH) information and services, including family planning and contraceptives (FPC)?

13. What are your suggestions to improve access to sexual reproductive health during a lockdown?

14. How do you think that parents, community and government could improve access to sexual and reproductive health services?

15. In your opinion, what parental, community and government supports could enhance access to sexual and reproductive health services?

16. Do you have any further comments?

Question Guide for Health Service Providers

1. What sexual and reproductive health (SRH) services are provided at your facility? Who can access these services? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

2. What guidelines/policies does your facility use for the provision of SRH services to the youth and adult? Do these guidelines consider adolescents as an important group to receive SRH services during COVID-19 lockdown?

3. What factors do you think affect adolescents and adults' utilization of SRH services at your facility? How do you think that these differ between men and women?

4. What measures were taken to ensure that quality services are provided to the youth and adult? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

5. What were the attitudes of the health service providers towards provision of SRH services? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

6. How would you describe the availability of supplies and other resources for the operations of the facility? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

7. What problems does your facility face in the provision of SRH services? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

8. Are the sexual reproductive health services affordable, acceptable, appropriate, and of quality care (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown. Let them discuss the affordability, acceptability, appropriateness, and the quality care in accessing SRH services.

9. What procedures do you follow when a client visits your facility for SRH services? Ask also about confidentiality, privacy, physical examination, and follow up care (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown.

Appropriateness

10. What comment would you give on the effect of the location and setting of your clinic to attracting adolescents to use the services during the lockdown?

11. What would you say is the government/political commitment towards promotion of SRH services during the lockdown?

12. What strategies were used to mobilize the community and the youth about the availability of SRH services during the COVID-19 lockdown?

13. What measures do you have in place to promote gender equity and equality to eliminate gender-based discrimination during service provision during the COVID-19 lockdown?

14. What cadre of staff do you have at your facility during the COVID-19 lockdown? Are both male and female providers available? What about youth counsellors?

15. What do you think has been the role/effects of the community in supporting/encouraging adolescents and adult to use SRH services at your facility during the lockdown?

16. Did your facility initiate any specialized SRH programme (online or virtual services, etc.) during the COVID-19 lockdown? Who were involved in the designing of the programme? What roles did each stakeholder play?

17. In your opinion, what has been the effect of SRH service provision on the rate of utilization by adolescents and adult? (a) when there was COVID-19 lockdown (b) when there was no COVID-19 lockdown?

18. What do you think can be done in order to promote utilization of SRH by adolescents and adult during any pandemic?

19. What are your suggestions to improve access to sexual and reproductive health during any future pandemic lockdown?

20. Do you have any further comments?

Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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Contact Us
African Economic Research Consortium
Consortium pour la Recherche Economique en Afrique
Middle East Bank Towers,
3rd Floor, Jakaya Kikwete Road
Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@aercafrica.org