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Gender differentials in access to medical services during COVID-19 lockdown: Insights from Nigeria

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Abstract

During the COVID-19 pandemic, Nigeria, like many other countries, implemented a lockdown policy that restricted all movement except for essential services. Access to medical services is a critical component of an effective healthcare system, and without equitable access across genders, improving the overall health outcomes of the population is unlikely to be achieved. This study analyses gender differential in access to medical services and sexual reproductive health services namely, family planning, child health, adult health, pharmacy, emergency care, vaccination, and other medical services during the COVID-19 lockdown in Nigeria, using both descriptive and inferential analytical techniques. Results indicate that adult health services were the most needed medical services, with females requiring them slightly more than males. However, access to these services was greater for males than females. While some respondents believed that there was a gender differential in access to SRH such as family planning, maternal and new born care, male infertility treatment, abortion prevention and management, healthy sexuality, violence surveillance and prevention among women, others opined that there was none. The study provided evidence-based recommendations for quality policy decisions on appropriate measures to promote gender-equitable and sustainable recovery during a crisis. *(Afr J Reprod Health 2024; 28 [11]: 115-134).*

Keywords: COVID-19; decomposition; gender; social assistance; medical services; Nigeria

Résumé

Pendant la pandémie de COVID-19, le Nigeria, comme de nombreux autres pays, a mis en œuvre une politique de confinement qui restreint tous les déplacements, à l'exception des services essentiels. L'accès aux services médicaux est un élément essentiel d'un système de santé efficace, et sans un accès équitable entre les sexes, il est peu probable que l'on puisse améliorer les résultats de santé globaux de la population. Cette étude analyse les différences entre les sexes dans l'accès aux services médicaux et aux services de santé sexuelle et reproductive, à savoir la planification familiale, la santé des enfants, la santé des adultes, la pharmacie, les soins d'urgence, la vaccination et d'autres services médicaux pendant le confinement dû au COVID-19 au Nigeria, en utilisant à la fois des données descriptives et techniques d'analyse inférentielle. Les résultats indiquent que les services de santé pour adultes étaient les services médicaux les plus nécessaires, les femmes en ayant légèrement plus besoin que les hommes. Cependant, l'accès à ces services était plus grand pour les hommes que pour les femmes. Alors que certains répondants pensaient qu'il existait une différence entre les sexes dans l'accès à la SSR, comme la planification familiale, les soins maternels et néonatals, le traitement de l'infertilité masculine, la prévention et la gestion de l'avortement, la sexualité saine, la surveillance et la prévention de la violence chez les femmes, d'autres étaient d'avis qu'il n'y avait aucune différence entre les sexes. . L'étude a fourni des recommandations fondées sur des données probantes pour des décisions politiques de qualité sur les mesures appropriées visant à promouvoir une reprise équitable et durable en cas de crise. *(Afr J Reprod Health 2024; 28 [11]: 115-134).*

Mots-clés: : COVID-19 ; décomposition; genre; aide sociale; services médicaux; Nigeria

Introduction

COVID-19, an infectious disease caused by the coronavirus, became a global pandemic, adversely impacting and causing a socio-economic downturn in over 200 countries, with millions of individuals and families affected and over two million fatalities[1]. With its first incidence recorded in Wuhan, China, in late December 2019, the COVID-19 pandemic ravaged and posed a significant threat to many lives. The adverse impacts of COVID-19 were enormous on the socio-economic outlook of human life, coupled with its attendant challenges on all sectors of the global economy, covering agriculture, manufacturing, tourism, health, service, and education, among others. Since the World Health Organization declared COVID-19 a pandemic, Nigeria, like many other countries, implemented a

lockdown policy that restricted all movement except for essential services to contain the virus[2].

The pre-lockdown period lasted 31 days, from 28 February to 29 March 2020, followed by a total lockdown that lasted 35 days, from 30 March to 3 May 2020. A gradual easing of the lockdown then took place over 73 days, from 5 May to 15 July 2020[3]. As a developing country, Nigeria faces challenges such as a weak healthcare system and inefficient drug supply chain management, which have been significant concerns in disease treatment and major obstacles to achieving universal health coverage and Sustainable Development Goal 3, which aims to ensure healthy lives and well-being for all.

Access to medical services is an important component of a strong healthcare system, and without it, improving the population's health outcomes is unlikely to be achieved[4]. Ahmed *et al*[5] enunciate that evidence-based recommendations require comprehensive data and information on COVID-19 and health service, in terms of provision, availability, accessibility, precautions taken to prevent virus transmission and who should continue to seek healthcare. It is also important to consider how the data could be disaggregated by gender and other pertinent socio-demographics . Moreover, while difficult to quantify, the lockdown measures have had significant negative impacts on the delivery of and access to sexual and reproductive health (SRH) 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[6-9]. Reports have highlighted severe disruption in the contraceptive supply chain and the closure of clinics and delivery points that provide SRH services to women, as health systems were scaled to respond to the pandemic[6,10]. A recent global survey conducted by the International Planned Parenthood Federation (IPPF)'s to assess the impact of the COVID-19 pandemic on SRH services delivery revealed the widespread closure of 5,633 static and mobile clinics, as well as community-based service delivery points, across 64 countries[10].

In Nigeria, where both new and existing FPC users may require information, counselling services may no longer be accessible through a health system now focused solely on "essential" healthcare needs[11]. Studies have identified health facilities, pharmacies, and patent medicine stores as important sources of FPC information for sexually active Nigerians, especially adolescents and adult women[12-15]. Regional inequalities in Nigeria are significant, leading to higher rates of poverty and limited access to basic services, especially in the Northwestern states. For instance, 81% of the population in Sokoto State lives in poverty, compared to a much lower 34% in Niger State. Economic and gender inequality are deeply intertwined, with each reinforcing the other. Nigerian women face numerous discriminatory traditional and sociocultural practices that disadvantage them in several areas compared to men. Most women work in informal, low-skilled, and low-paid informal jobs; they are also less likely than men to own land. Moreover, 75.8% of the poorest women have never attended school, compared to 28% of the wealthiest men. In Jigawa State, 94% of women are illiterate, compared to 42% of men [16]. 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[17-18]. With its attendant challenges, however, the pandemic suggests that the gender differential might have been exacerbated due to the various restrictive measures embarked upon to contain the virus. While COVID-19 was a big issue for the entire world when this study was first completed, its peak has since passed, and many countries have transitioned to post-pandemic recovery. In most areas, vaccination campaigns, better treatment guidelines, and improved public knowledge have greatly lessened the virus's impact. Though certain areas continue to see isolated outbreaks and the appearance of new varieties, it is still crucial to comprehend the ramifications and long-term impacts of the virus." Therefore, this study utilize primary data collected directly from Nigerian communities shortly after the lockdown period, which is a unique dataset reflecting the real-time experiences and challenges

faced by individuals and households by examining and analysing the influence of the lockdown 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 socio-economic factors contributing to gender differentials in access to medical services.
iv. explore contextual factors such as poverty, inter-and intra- household resource allocation and decision, inequality, power relations, sociocultural norms, and perceptions influencing access to sexual reproductive health.

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[19]. According to WHO[20], access consists of at least five service provision components: 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[21]. 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 programs. The demand factors are the key elements of reproductive health services considered in the study. At the same time, the supply environment comprises the functional areas that support service delivery and the service delivery environment itself. A program's functional or operational areas 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 utilisation in the study.

Methods

Data and data description

This study adopts a mixed-method approach involving both quantitative and qualitative techniques. The quantitative technique uses a secondary dataset from the Nigeria COVID-19 National Longitudinal Phone Survey (COVID-19 NLPS), a monthly survey containing nationally representative samples of 1,950 households. The National Bureau of Statistics conducted the surveys 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. About 5,000 households selected randomly across the country's six geopolitical zones formed the target frame from which the survey sample sizes 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 contact 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 3000 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 childcare services, adult health services, pharmacy, vaccination, and emergency care services.

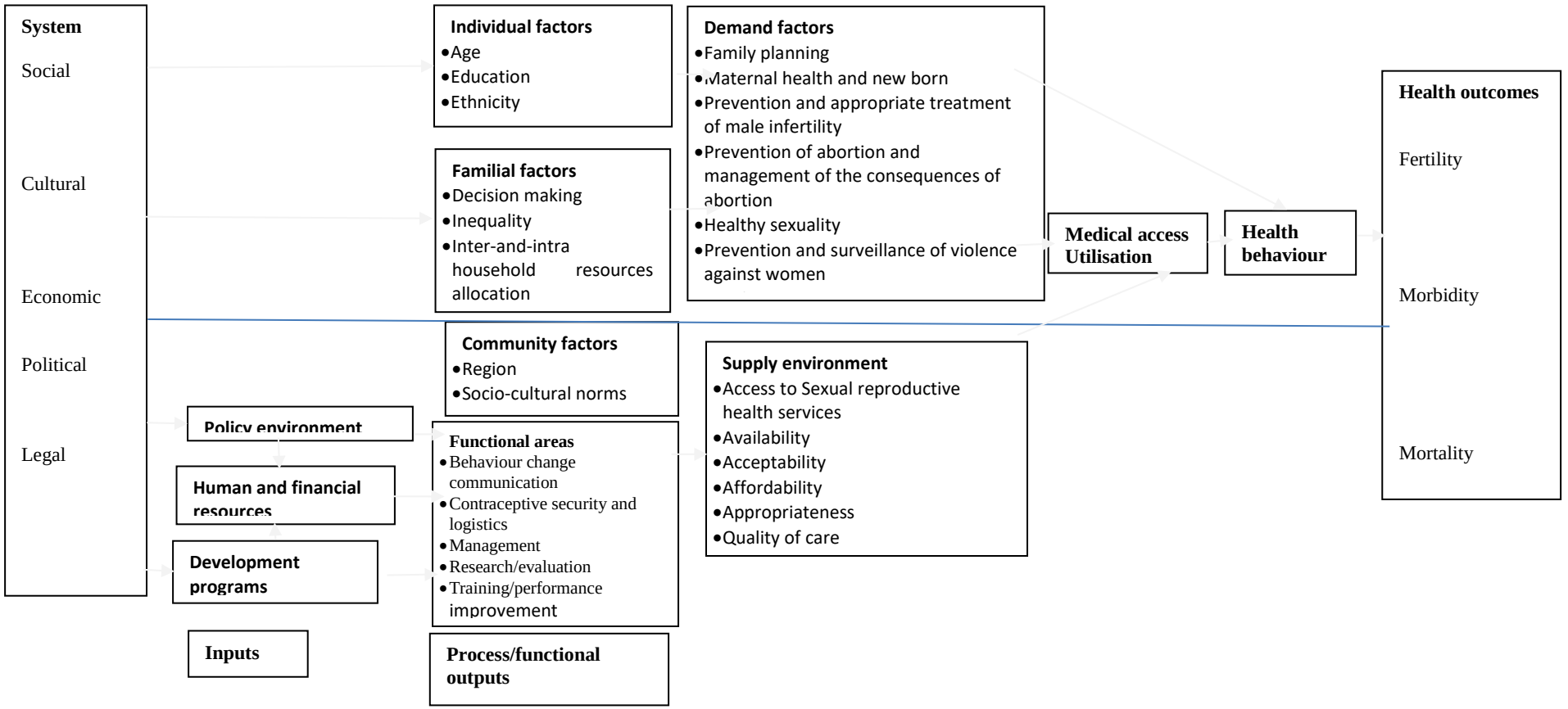

Figure 1: Conceptual Framework adapted from a model developed by bertrand *et al*., 1996

Figure 2: The six geopolitical zones in Nigeria

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 remained in place, including on mass gatherings. Though a sample size of 1800 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 due to non-responses, unreachable phone lines, and the like. The questionnaire elicited relevant data from the sampled head of the participating households. The survey's first round (baseline) was conducted in April/May 2020, during which a federally mandated lockdown was in full effect. A description of key variables of interest. The key variables of interest are gender, access to medical services, and pertinent socio-demographic factors. Gender is measured as a binary variable, with 1 representing male and 0 representing female. Access to medical services encompasses various healthcare services, including family planning, child health, adult health, pharmacy services, emergency care, vaccinations, and other medical services. The socio-demographic variables considered include age, employment status, metropolitan status, household headship, receipt of social assistance, and geographic factors such as region and state.

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 5 and 18 attended school, while 16% did not. Nearly 19% of adults who were of working age (15-70 years)[1]. 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% fell 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 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 Southeast 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%).

Primary data were collected from the Southwest, North West, and South East of Nigeria for the qualitative methodology. The primary data was obtained through an in-depth interview (IDI) and focus group discussion (FGD). A total of 6 IDIs and 8 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 should have been fully covered in the panel survey. Responses to these questions thus complemented the survey and enriched 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 heteroskedasticity.

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

Where L denotes the functional notation for the standard logistic distribution, H_i is the outcome variable of interest, α is the intercept, $and\ X\ stands$ for all the control variables, including age, metropolitan status, and geographical location. For instance, a functional relationship would be expressed as;

$$Hi = \alpha i + \tau Dgi + X^{'}{}_i + \upsilon i \qquad (2)$$

Where Hi is the health outcome of interest for individual i; Dg is the gender (Male=base category), Xi are control variables, and υi 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 Hig, while Xig is a set of health-related characteristics for each individual I in group g, and the conditional expectation of Hig is linear, such that health for the individual I in group g follows:

$$E[Hig\,\mathrm{i}Xig] = X^{'}\,\beta g, g = \{f, m\} \qquad (3)$$

A Blinder-Oaxaca decomposition separates the gender health differential $\Delta H^{f,m}$ attributable to differences in observed character istics and the returns to those endowments. The decomposition proposed by Blinder[22] and Oaxaca[23] and generalised by Oaxaca and Ransom[24] can be expressed as:

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

The first term on the right-hand side of (4) refers to the part of the health difference (or gap) that group differences in observed characteristics may explain, 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):

$$\beta^* = \rho\beta m + (1-\rho)\beta f \quad (5)$$

The linear combination of the "weights" (ρ) can be chosen in various ways. For example, setting ρ = 1 puts all the weight on males, while setting ρ = 0 places all the weight on females. However, if the chosen value of ρ places all the weight on one of the groups, the decomposition is reference-dependent. Based on theoretical derivations, Neumark25 and more recent studies26-28 advocate coefficients from a pooled regression over bothgroups as an estimate for parameter vector β∗. Thus, this study employs this strategy in our subsequent empirical analysis. The fourth objective was achieved using qualitative data. FGDs and IDIs were conducted. The FGDs were directed at the community, with 8 to 12 people gathering, 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, sociocultural 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 up 18 IDIs. Those interviewed were two traditional leaders/opinion leaders, two health workers, and religious leaders (Pastor and Imam).

Results

Descriptive statistics (by gender)

Given that this study focuses on gendered access to medical services during the COVID-19 pandemic lockdown, the analysis begins with the description of pertinent variables by gender The result indicates that, except for adults above 45 years, more males 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 unemployment rate was slightly higher for females (19.3%) than males. Similarly, more females (75%) reside in rural areas than males. The percentages of other household members (95%) who did not receive social assistance (99%) were also greater for females than 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 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. The result reveals that, on average, female adults between 18 and 45 years (35%) needed medical services more than their male counterparts (30%). 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 (57%) needed medical services more than female children (53%), while each male and female adult who is over 45 years needed medical services. When compared with their respective male counterparts, a greater percentage of females who were: not currently attending school (15%), unemployed (19%), residing in rural areas (78%), or other household members (96%) did not receive social assistance (99%), residents of Southeast region (14%), South

west-southwest 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 the 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 1B), 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%) needed child health services 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, vaccination, and other medical services were needed by more males than by females, and access was equal and the same for both males and females. Although a few respondents needed these services, it is quite surprising that all the males and females who needed these services could access them. The possibility of the variables being mismeasured or wrongly reported must be considered. 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 instance, some respondents preferred to divert their affirmative responses for access to family planning and other medical services to adult health services. For instance, 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 stigmatisation 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.

Gender differential in access to medical services during the 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. Colum 3 added the State fixed effects; 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 differential in access to healthcare services.

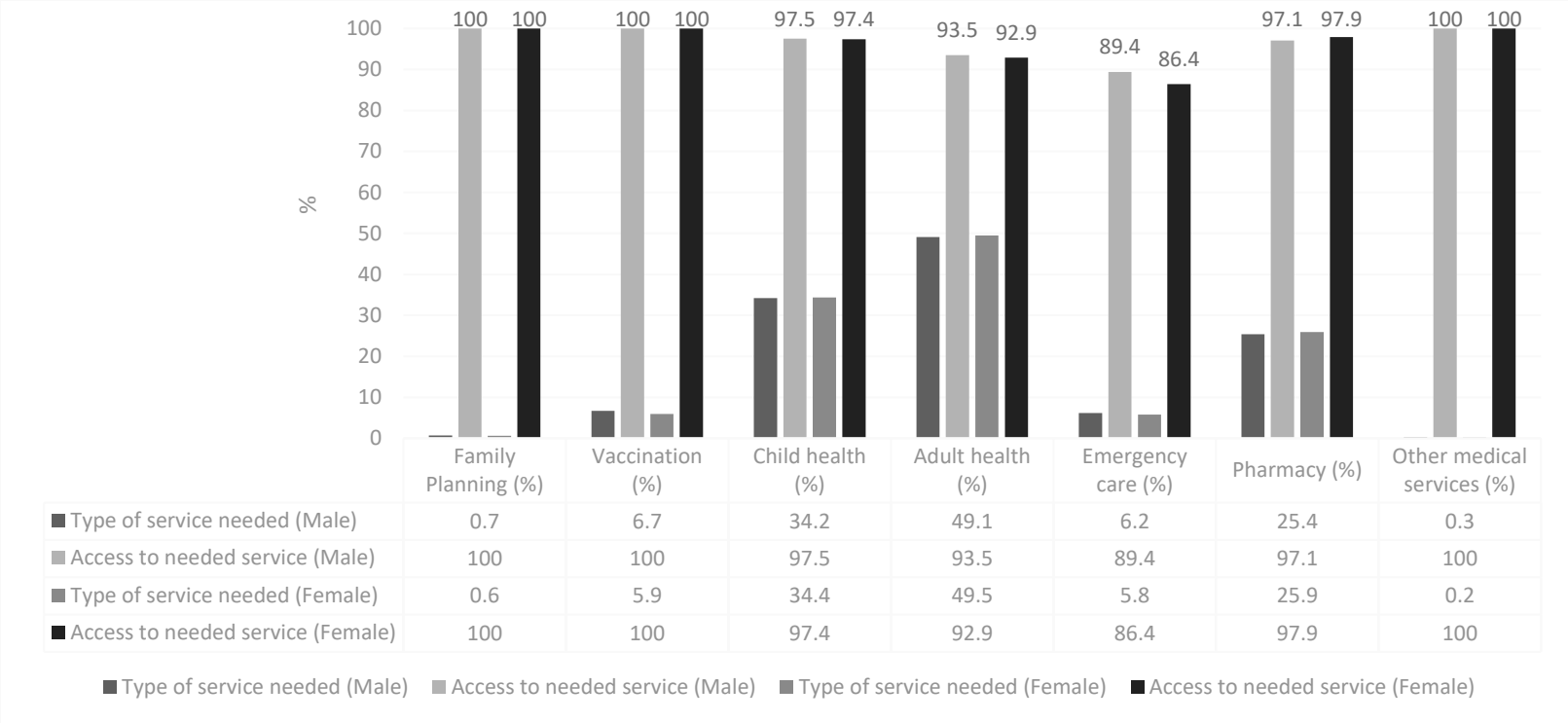

Figure 2: Distribution of types of medical services needed and access to medical services during COVID-19 lockdown (by gender)

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

Independent variables	**Model 1**	**Model 2**	**Model 3**	**Model 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)	
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)	
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)	
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-Statistics	0.23	4.23	3.42	3.98
Observations	2919	1627	1627	1627

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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

The emergence of COVID-19 and its accompanying challenges have undoubtedly exacerbated the existing gender differential[29].

In Column 4, when the gender variable interacted with pertinent variables of interest, the result reveals that females residing in the North-East and South-South regions were 3.4% and 14.4% less likely to have access to adult health services than their respective male counterparts. Females employed were also less likely to have access, though the coefficients are insignificant. On the other hand, females who are residents in the North Central and North West regions were 4.7% and 5.4% more likely to access adult health services, respectively.

The other result shows that there is a low probability that those who are residents in the North East and South-South regions had access to adult health services. In contrast, those who received social assistance had a higher probability of accessing the service. Similarly, Bauchi, Benue, Borno, Edo, Gombe, Kogi, Kwara, Ogun, and Yobe States residents were more likely to access adult health services. At the same time, those residing in Abia, Akwa-Ibom, Kano, Kebbi, Ondo, Osun, Oyo and Plateau states were less likely to access the services.

Decomposition results

Table 2 presents the decomposition results for gender differential access to adult health services during the COVID-19 pandemic lockdown. This analysis sheds additional light on the key socio-demographic factor driving the gender differential 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. In comparison, 3% of the gender differential 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 employed males and females.

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 differential in accessibility to needed adult health services is largely explained by the gender gap in employment status, favouring males over 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 differential in access to adult health services. This suggests that females are disproportionately treated less equally than males in the zone. Meanwhile, differences in the receipt of social assistance marginally explain the gender differential in accessibility to adult health services. the highlighted aforementioned reasons.

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

In Figure 4, 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 a 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. As several healthcare facilities were not accessible or had restricted access due to several factors 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 using non-orthodox healthcare personnel, primary healthcare centres, private clinics, local medicine, and self-medication. Several respondents acknowledged that private clinics were only affordable and accessible to the rich.

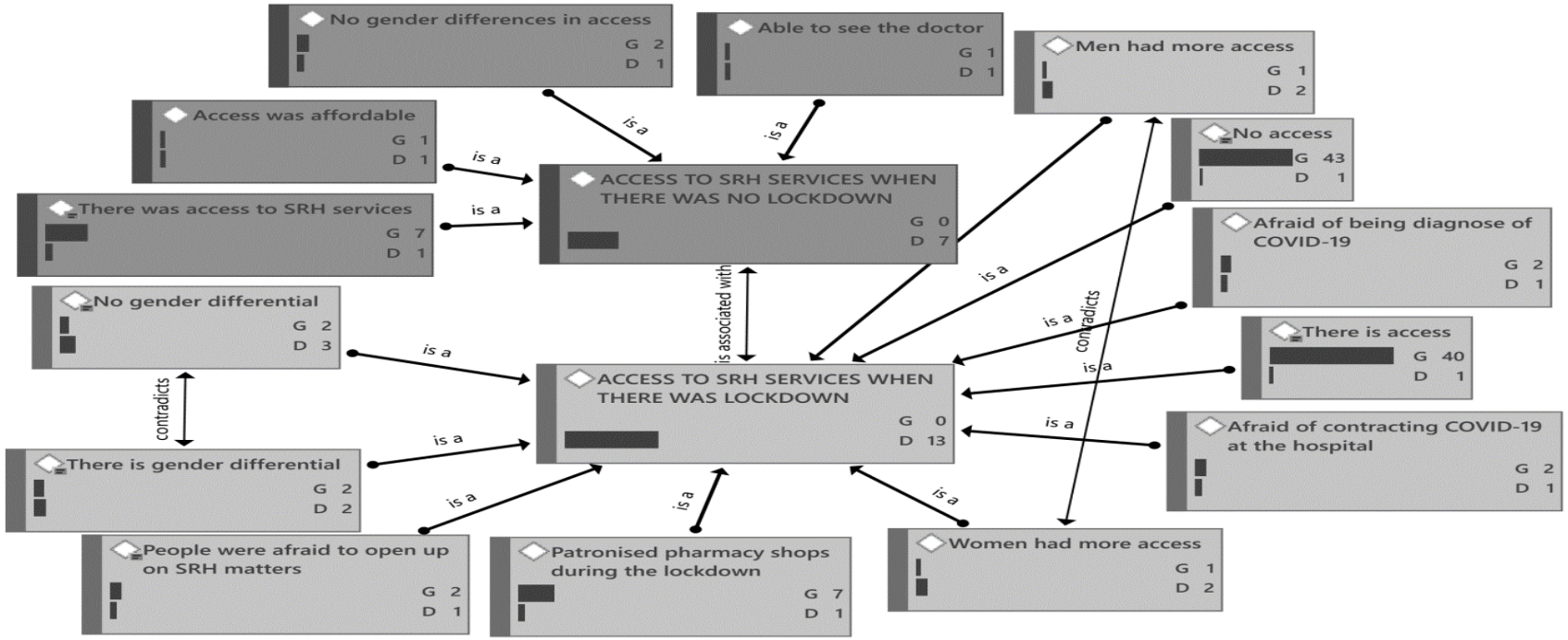

Figure 4: Access to medical services before and during the COVID-19 pandemic lockdown

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 newborns 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, withdrawal, or abstinence from sex was adopted. Other methods used were the traditional methods, such as using herbs, making an incision on their body and using rings, to mention a few. Moreover, many use condoms by buying them from 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, sensitisation, 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's life. STI/HIV treatment and management during the COVID-19 pandemic lockdown was not easily available for most people, according to the people's response. 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 personnel, 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 use herbs such as mixing lime with calcium carbonate and use seven-up with salt, while some visit a quack nurse they call upon to abort when needed. There were several unsafe abortions because there was no functional facility for an abortion. Most abortions 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 managing and preventing domestic violence during the COVID-19 lockdown. Several domestic violence was recorded over the time of the COVID-19 lockdown, including but not limited to child abuse, kidnapping, rape, forceful marriage, physical violence, early marriage, and theft. The health workers intervene in family violence by counselling those who come to the clinic for treatment. However, this service was unavailable during the lockdown except for 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 respondents acknowledged that visiting physicians to conduct a medical test to ascertain the body's condition 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 sensitisation of unsafe sexual behaviour. Thus, gaining more of this knowledge during the COVID-19 lockdown was not easy. The medium through which people can know about healthy sexuality is much more focused on how to curtail COVID-19. The qualitative results further corroborate the quantitative results on if the people receive social assistance in accessing medical services. Most respondents said they received no social assistance or palliatives during the lockdown. They said much hunger caused sickness and even led to death among the people. On the other hand, a few of the respondents said they received palliatives. An adult woman from Osun and Enugu State confirmed it, and while some only heard that people were getting palliatives but never reached them. Some of the excerpts are found in Figure 5.

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

Factors that hindered access to SRH services when there was a lockdown were distance to the health facility, lack of means of transportation and restricted movement. When there were no COVID-19 lockdown, factors hindering access to SRH

services identified include poverty, religion, culture, ignorance, power relation, fear, shame, sociocultural norms and other perceptions mentioned. Factors hindering access to SRH are shown in Figure 6.

Policy recommendations

A number of policy suggestions and recommendations to enhance access to healthcare and SRH services emanated from this study. The following suggestions and recommendations are tilted more towards women because they often need these services more than their male counterparts.

i. The respondents strongly recommended the introduction of mobile health centres to improve access to SRH services during the lockdown or any future national crisis. These centres will bring healthcare facilities closer to the public, especially women who require SRH and other health services.
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 various media outlets, which include television, radio, dailies, social medial platforms (Twitter, Facebook, Instagram), etc.
iii. Furthermore, it was suggested that telemedicine, which enables patient-physician consultations via video or phone, be promoted throughout the lockdown, particularly for women to more easily access SRH information, counselling, and institution services in urban settings where the level of education and exposure is relatively higher. They also argued that whether COVID-19 exists or not, the government must empower people, particularly women, by ensuring they have access to quality education, productive jobs, and improved living conditions. This will enable them to deploy telemedicine, particularly in times of national emergency, successfully. Women who are employed and have greater levels of education will be able to buy mobile phones or laptops, call cards, and data to set up the appropriate applications.
iv. It was suggested that the government provide a "social assistance package on SRH services,", especially for women who require these services in rural areas where most residents lack the financial means to use telemedicine on SRH services. Condoms and pills for contraception might be packaged as social assistance, given away for free, and left at the doorsteps of designated patients.
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 women should be given special consideration by creating an interactive App that could allow them to communicate their healthcare. SRH needs medical personnel to 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, social media platforms should be exploited while subsidising data charges or providing free online access to websites specifically tailored to health and SRH services.
viii. Setting up special hotlines that will be dedicated to prompt handling of reported domestic violence cases between partners and follow-up or counselling services. Moreover, a mobile court should be instituted to deliver justice to victims quickly.

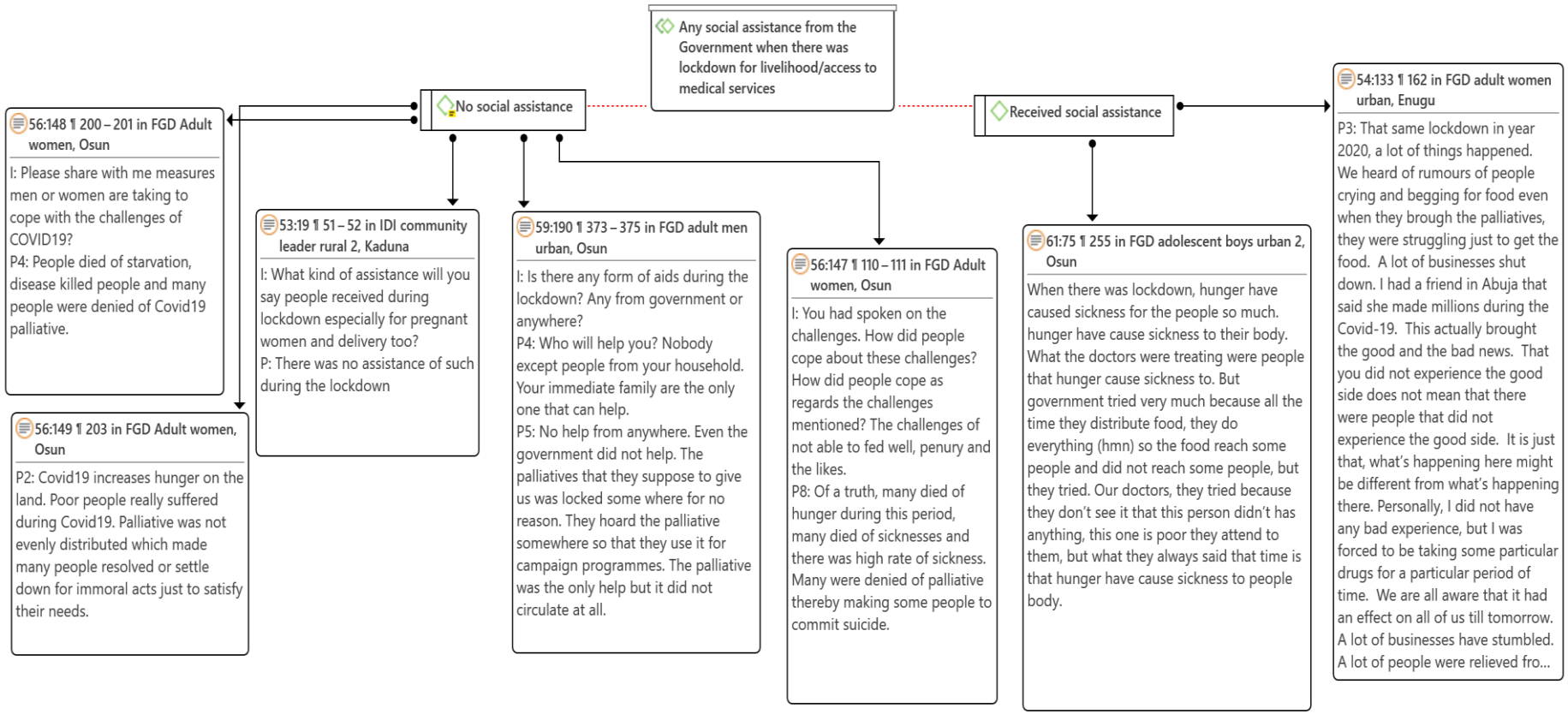

Figure 5: Network view showing social assistance received/not received when there was lockdown

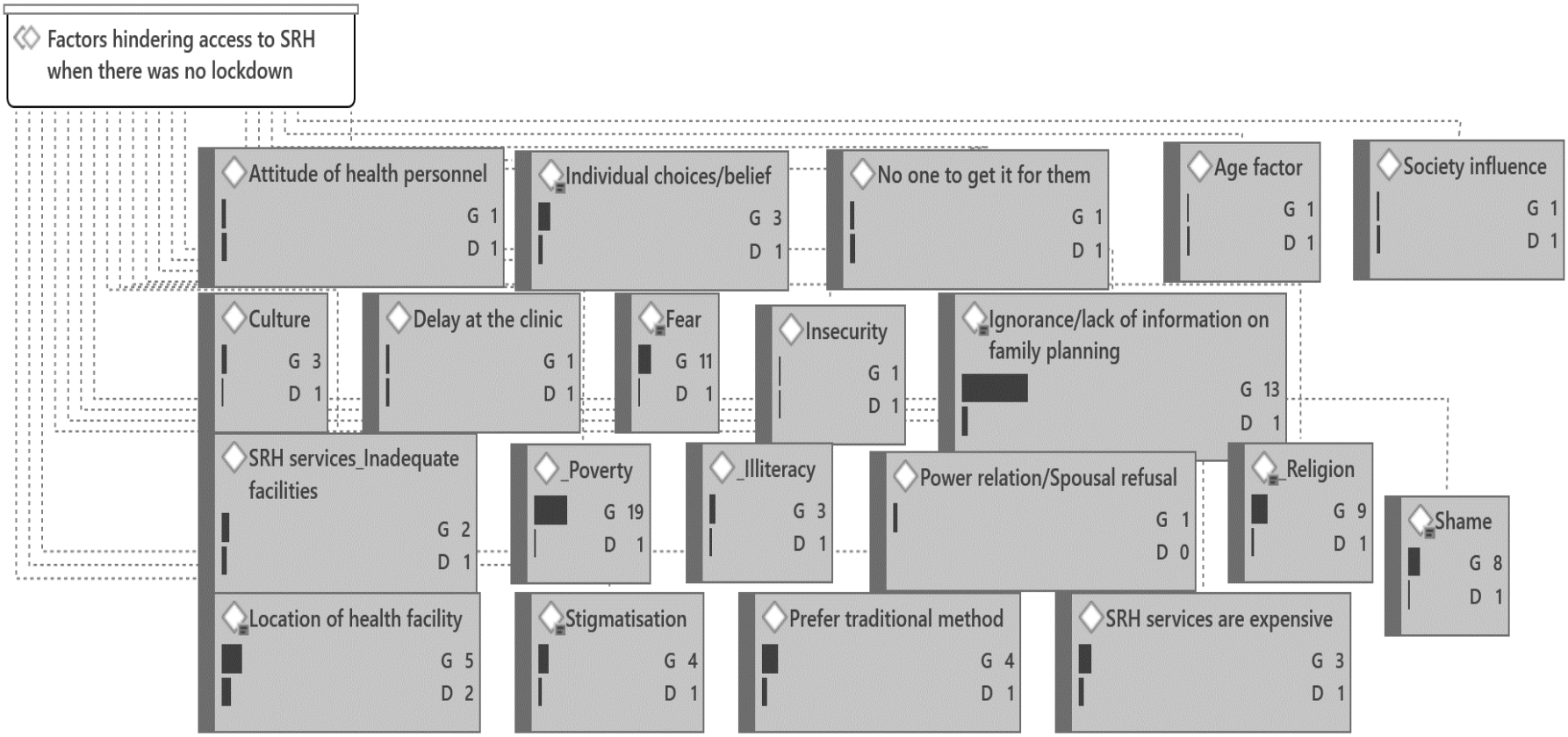

Figure 6*:* Network View Showing Factors Hindering Access to SRH Services when there was no lockdown

Conclusion

These findings are important for health policy review and implementation, particularly during an unprecedented crisis. The findings are in tandem with related studies which have recommended that government should gear up efforts and actions to reduce further incidences of gender inequality in health and access to healthcare. 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 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 be given to women seeking medical services, particularly sexual reproductive health care services. Moreover, women's empowerment, promotion of gender-friendly policy, and increased participation in the labour market should top the list of the economic agenda in most States regions of the country.

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References

1. Pan American Health Organisation. Epidemiological update: Coronavirus disease (COVID-19). 9 February, 2021. Available from: https://iris.paho.org/handle/10665.2/53378
2. Presidential Task Force on COVID-19. Implementation of guidance for lockdown policy, 2020. Available from: https://doi.org/10.1016/j.solener.2019.02.027
3. Ibrahim RL, Ajide KB and Olatunde OE. Easing of lockdown measures in Nigeria: Implications for the healthcare system. Health Policy Technol 2020;9(4):399–404. doi:10.1016/j.hlpt.2020.09.004
4. Akande-Sholabi W. The impact of COVID-19 pandemic on medicine security in Africa: Nigeria as a case study. Pan Afr Med J 2020;35:73.
5. Ahmed SAKS, Ajisola M, Azeem K, Bakibinga P, Chen YF, Choudhury NN, Fayehun O, Griffiths F, Harris B, Kibe P, Lilford RJ, Omigbodun A, Rizvi N, Sartori J, Smith S, Watson SI, Wilson R, Yeboah G, Aujla N, Azam SI, Diggle PJ, Gill P, Iqbal R, Kabaria C, Kisia L, Kyobutungi C, Madan JJ, Mberu B, Mohamed SF, Nazish A, Odubanjo O, Osuh ME, Owoaje E, Oyebode O, Porto de Albuquerque J, Rahman O, Tabani K, Taiwo OJ, Tregonning G, Uthman OA and Yusuf R. Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slcommunities of Bangladesh, Kenya, Nigeria, and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements. BMJ Glob Health 2020;5:e003042. doi:10.1136/bmjgh-2020-003042
6. Riley T, Sully E, Ahmed Z and Biddlecom A. Estimates of the Potential Impact of the COVID-19 Pandemic on Sexual and Reproductive Health In Low- and Middle-Income Countries. Int Perspect Sex Reprod Health 2020;46:73–76. doi:10.1363/46e9020
7. Stein D, Ward K and Cantelmo C. Estimating the Potential Impact of COVID-19 on Mothers and Newborns in Low- and Middle-Income Countries. Health Policy Plus, 2020.
8. Krubiner C, Keller JM and Kaufman J. Balancing the COVID-19 Response with Wider Health Needs Key Decision-Making Considerations for Low- and Middle-Income Countries. CGD Note May 2020.
9. Purdy C. Opinion: How will COVID-19 affect global access to contraceptives- and what can we do about it? Devex 2020.
10. International Planned Parenthood Federation. COVID-19 pandemic cuts access to sexual and reproductive healthcare for women around the world. IPPF, 2020.
11. Endler M, Al-Haidari T, Benedetto C, Chowdhury S, Christilaw J, El Kak F, Galimberti D, Garcia-Moreno C, Gutierrez M, Ibrahim S, Kumari S, McNicholas C, Mostajo Flores D, Muganda J, amirez-Negrin A, Senanayake H, Sohail R, Temmerman M and Gemzell-Danielsson K. How the coronavirus disease 2019 pandemic impacts sexual and reproductive health and rights and response: Results from a global survey of providers, researchers, and policy-makers. Acta Obstet Gynecol Scand 2021;100(4). doi:10.1111/aogs.14043

12. National Population Commission (NPC) [Nigeria] and ICF. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA; 2019. Available from: https://www.dhsprogram.com/pubs/pdf/FR359/FR359.pdf
13. USAID/SHOPS Plus. Sources of Family Planning: Nigeria [Internet]. Abt Associates; 2019. Available from: https://www.shopsplusproject.org/sites/default/files/resources/Sourcesof Family Planning in Nigeria.pdf
14. Omolase C, Faturoti S and Omolase B. Awareness of family planning amongst antenatal patients in a Nigerian community: an exploratory study. Ann Ibadan Postgrad Med 2011;7(1):2–5.
15. Lanka S. Periodic abstinence and calendar method use in Hungary, Peru, the Research Group on Methods for the Natural Regulation of Fertility, 2001;64:209–15.
16. Oxfam International (OXFAM). Inequality in Nigeria—Exploring the Drivers, 2017. Available from: https://www-cdn.oxfam.org/s3fs-public/file_attachments/cr-inequality-in-nigeria-170517-en.pdf
17. Dunlop DD, Manheim LM, Song J, Chang RW. Gender and ethnic/racial disparities in health care utilisation among older adults. J Gerontol B Psychol Sci Soc Sci 2002;57(4). doi:10.1093/geronb/57.4.S221
18. Manuel JI. Racial/Ethnic and Gender Disparities in Health Care Use and Access. Health Serv Res 2018;53(3). doi:10.1111/1475-6773.12705
19. Price NL and Hawkins K. A Conceptual Framework for the Social Analysis of Reproductive Health. 2007.
20. World Health Organization. Measuring access to reproductive health services: Report of a WHO meeting. Geneva: World Health Organization, 2004. (WHO/RHR/04.11).
21. Bertrand JT, Magnani RJ and Rutenberg N. Evaluating family planning programs: with adaptations for reproductive health. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill, 1996.
22. Blinder A. Wage discrimination: Reduced form and structural estimates. J Hum Resource 1973;8(4):436–55.
23. Oaxaca R. Male-female wage differentials in urban labour markets. Int Econ Rev 1973;14(3):693–709.
24. Oaxaca RL and Ransom MR. On discrimination and the decomposition of wage differentials. J Econom 1994;61(1):5–21.
25. Neumark D. Employers' discriminatory behaviour and the estimation of wage differentials. J Hum Resource 1988;23(3):279 95.
26. Fortin NM. The gender wage gap among young adults in the United States: The importance of money versus people. J Hum Resource 2008;43(4):884–918. doi:10.1111/aogs.14043
27. Jann B. The Blinder–Oaxaca decomposition for linear regression models. Stata J 2008;8(4):453–79.
28. Kassenboehmer SC, Sinning MG. Distributional changes in the gender wage gap. Ind Labor Relat Rev 2014;67(2):335–61.
29. Nonyelu AuN and Nwankwo IU. Social Determinants of Differential Access to Health Services across Five States of Southeast Nigeria. Eur Sci J 2014; Special Edition 3:286–96.