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Research Article

Response Probability Assessment of Sexual Enjoyment among Nigerian Couples During COVID-19 Lockdown

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ABSTRACT

Regular pleasurable sex among couples is pivotal to nurturing a healthy marriage relationship, the lack of which has been associated with frequent misunderstandings, infidelity, gender-based violence and divorce in severe cases. The World Health Organization in January 2020 declared Coronavirus Disease (COVID-19) a global public health emergency. Countries all over the world declared lockdowns and formulated control measures to check the spread of the disease. Parents, children and relatives were locked down at home thereby eroding privacy among couples. This study assessed the response probability of sexual enjoyment/intimacy among Nigerian couples during COVID-19 lockdown. Convenience sampling using an online semi-structured questionnaire was employed to elicit information from 148 married Nigerian couples aged between 16 and 50+ years. Data was analyzed using SPSS version 23. Pearson Chi-Square (χ^2) was performed to determine associations between variables at 5% significance level (p -value ≤ 0.05). The assessment made use of response probabilities obtained by binary logistic regression modeling. Most respondents 81 (54.7%) were aged between 36-49 years; 75 (50.7%) were females, 73 (49.3%) were males. 109 (73.6%) were locked down in Nigeria. Majority 122 (82.4%) reported improvement in sexual intimacy; most 106 (71.6%) enjoyed sex, while 42 (28.4%) did not. Major barriers to sexual enjoyment were frequent misunderstandings 34 (80.9%, $p = 0.0001$); accommodation type (0.00001) and infidelity 29 (69.1%). The response probabilities showed that males (0.71 Nigeria, 0.73 abroad) enjoyed sex, compared to females (0.70 Nigeria, 0.72 abroad). Overall, this study showed significant improvement in sexual enjoyment/intimacy among respondents. However, misunderstanding and accommodation type were statistically significantly associated with sexual enjoyment. In the face of rising global uncertainties/economic downturn, regular pleasurable sex is advocated among married couples, particularly females, in order to maintain physical, mental and psychological wellbeing.

Keywords: *COVID-19, lockdown, sexual enjoyment, response probability, Nigeria.*

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INTRODUCTION

The world has not been the same in all ramifications since the outbreak of the novel coronavirus disease (COVID-19) which began in Wuhan, China on December 8, 2019. The news of COVID-19 disease especially on the social media mesmerized both young and old with severe panic, fear, anxiety, speculations, shock, and uncertainties. The first case of COVID-19 in Nigeria was confirmed by the Federal Ministry of Health in Lagos State, Nigeria on February 27, 2020. The Government of Nigeria, through the Federal Ministry of Health strengthened measures aimed at controlling and containing an outbreak in Nigeria as quickly as possible. The multi-sectoral Coronavirus Preparedness Group led by the Nigeria Centre for Disease Control (NCDC) immediately

swung into action and activated its National Emergency Operations Centre to implement firm control measures. However, two months after (March 27, 2020) Nigeria recorded 81 cases of COVID-19 (Nigerian Centre for Disease Control (Nigeria Centre for Disease Control (NCDC), 2020). The COVID-19 outbreak overburdened the healthcare delivery system of several nations, Nigeria inclusive. On January 30, 2020, the World Health Organization (WHO) declared the novel human coronavirus disease a Public Health Emergency of International Concern (PHEIC) (WHO, 2020).

Arising from this declaration, countries all over the world declared lockdowns and formulated control measures to check the spread of the disease. Nigeria introduced a lockdown on March 30, 2020. Only essential services were allowed to operate. Nationwide curfew was imposed, with restriction on interstate and international travels. Most couples and family

members were separated from each other; some couples who were on vacation to other countries were locked down away from their primary places of residence. Moreover, both private and public businesses, including government offices, social facilities, and schools at all levels were grounded in line with global directives. The closure of schools and work places also kept students, couples, relatives and other dependents at home, thereby eroding privacy in many homes. This initial lockdown was modified as phase II lockdown on June 2, 2020 in which some measures were relaxed. The nationwide curfew was changed to the time between 10:00pm and 4:00am daily. The banks and government office hours were also relaxed. As of June 4, 2021, there were 2,133,061 cases of COVID-19 and 2,117 deaths in Nigeria (NCDC, 2021).

Although the effect of the pandemic was mild in Nigeria as only an insignificant proportion of the population was infected by the virus and there were relatively fewer deaths compared to other countries, the lockdown however crippled businesses as all facets of the economy were grounded. Although people working in government establishments continued to receive full salaries during the lockdowns, many people in the private sector in Nigeria could not earn full salaries. The stress associated with the lockdown in Nigeria was further compounded by some other crises' situations like the nationwide strike by the Academic Staff Union of Universities (ASUU) which started in March 2020 and ended in October 2020. Salaries of lecturers who declined governments' new salary platform were stopped for several months and even when the restrictions were relaxed, only few workers' salaries were paid for only two months in the first instance, while several others were not paid at all. While some lecturers were owed salaries for up to six months consecutively, others were owed for even longer periods. This ugly development affected not only lecturers but their family members and other dependents as well. In addition to the COVID-19 lockdown and the protracted lecturers' strike with non-payment of salaries, came also the ENDSARS Protest against police brutality perpetrated by the Special Anti-Robbery Squad (SARS) a branch of the Nigeria Police Force under the State Criminal Investigation and Intelligent Department (SCIID). This national crisis which cut across the length and breadth of the nation started in October, 2020 and rendered the remaining part of the year restive. All these aggravated the stress experienced by Nigerians during the COVID-19 lockdown.

Sex or the need for love and belonging is a physiological need, as is the need for food and sleep. Pleasurable sex brings both emotional satisfaction and marital bliss to the couple. Conversely, prolonged abstinence or insufficient sex in marriage can negatively impact on sexual intimacy and wellbeing of couples, as insufficient food and lack of sleep is to health. Sexual satisfaction has been linked to marital satisfaction, which in turn is essential to building durability and strong family ties (Ashdown *et al.*, 2011). Although sex is designed to be enjoyed and consummated in marriage, several barriers exist in literature which adversely affect sexual enjoyment and sexual intimacy. For instance, Bodenmann *et al.* (2010) established that stressors and experienced stress are negatively correlated with sexuality among couples. Also, interpersonal conflicts, stress, lack of privacy and medical issues have been observed to adversely affect sexual life

(Arafat *et al.*, 2020). Studies have also shown that anxiety, stress and reduced finances impact negatively on mental health with associated consequence of low libido (Forbes *et al.*, 2019). Recessions have also been observed to impact detrimentally on health and subsequently on couples' sex lives (Margerison-Zilko *et al.*, 2016). A study on the effect of COVID-19 and its control measures on sexual satisfaction among married couples in Kenya revealed a decrease in sexual satisfaction during the pandemic among married couples aged 31-50 years. Precisely, 41.3% of the study participants reported that they were sexually dissatisfied during the lockdown (Osuri *et al.*, 2021). The authors attributed this to the falling quality of life during the pandemic. It is generally believed that sexual satisfaction and relationship confidence depend largely on the amount of time spent together by couples. However, the conclusion in that study and those of several other studies seem to differ from this belief. In their study on changes in sexuality and quality of couples' relation during the COVID-19 Lockdown in Italy, Panzeri *et al.* (2020) observed a decrease in sexual pleasure, satisfaction, desire and arousal among some females. Cocci *et al.* (2020) linked the ongoing pandemic of the Coronavirus disease and its restrictive measures to widespread fear, anxiety and panic, which in turn escalated into further negative psychological reactions including changes in sexual behaviour. The authors observed a significant decrease in sexual satisfaction during the lockdown, with more than half of respondents claiming a complete absence of sexual pleasure.

A systematic review of literature on women's sexual health during the COVID-19 pandemic in 18 countries revealed a deterioration of women's sexual functions (de Oliveira *et al.*, 2021). The authors noted that several studies had documented decreases in the frequency of sexual intercourse during the pandemic, and that women's sexual functions in particular, decreased during the period, while many women also experienced declines in sexual satisfaction and relationship satisfaction. WHO (2008) also observed that depression and anxiety were found to be the leading problems associated with sexual dysfunction in both genders. Sexual dysfunction, with all its components like loss of sexual desire, sexual aversion, failure of genital responses, orgasmic dysfunction, etc., have been linked to psychological conditions of anxiety, fear and depression (Rokach, 2019). In an attempt to assess the ideas about poor communication practices that lead to the breakdown of relationships such as criticism, contempt, defensiveness, stonewalling, Yoo *et al.* (2014) observed that husbands' and wives' emotional intimacy and sexual satisfaction were found to play an intervening role in the association between communication and relationship satisfaction. These authors found that spouses were more likely to feel emotionally and sexually intimate with their partners when they perceived that their partners' communication style was more positive, and their increased intimacy in turn, increased their relationship satisfaction.

The limitation of space and the obligation to share every moment of the day have been reported to impact negatively on sexual satisfaction among couples. Ibarra *et al.* (2020) observed that limited space and the obligation to share every moment together exacerbated the quarrels and differences in pinions within cohabiting couples, thus weakening the

couples' bond, which in turn affected sexual intercourse negatively. In their study, Dewitte *et al.* (2020) also observed that living conditions like less-lone-time, and more time with children negatively affect sexual intimacy among couples. Costantini, *et al.* (2021) noted that although the COVID-19 lockdown led to an improvement in couple's sex lives in Italy among couples who had been in stable relationships for more than five years, 29% of the participants reported a worsened sex life. The authors opined that the improvement in couple's sex lives could have been made possible by the relieve from normal daily routines during the lockdown.

The COVID-19 lockdown in Nigeria provided a compulsory holiday for many couples. The lockdown was further made easy as there was no work – from – home policy, while the monthly salaries of government employees continued to run, thus cushioning the effect of the lockdown on couples and families. This study, therefore, was designed to assess the response probability of sexual intimacy and sexual enjoyment among Nigerian couples during the COVID-19 lockdown.

MATERIALS AND METHODS

Study population, design and sample size: The study population comprised married Nigerian couples aged between 16 and 50 years and above who resided in Nigeria or in diaspora during the COVID-19 lockdown between June and August 2020. Convenience sampling was adopted in which a sample 148 respondents (73 Males and 75 females) participated in the online survey. Participants who were locked down in Nigeria were 109, while 39 were abroad. The participants were thus cross-tabulated into four sub-groups: males who were locked down in Nigeria; males who were locked down abroad; females who were locked down in Nigeria and females who were locked down abroad.

Ethical consideration: An introductory information to the participants provided the conditions of confidentiality and anonymity. Respondents' participation in the study was voluntarily and out of a personal volition and conviction. Participants were informed that they were at liberty to discontinue with the survey if they no longer felt comfortable with the study questions.

Method of data collection: The survey made use of google forms which were completed online by the respondents. Data collection was made possible through an online questionnaire link circulated on the social media (WhatsApp and E-mail). Respondents were equally requested to post the link to their contact groups. A semi-structured questionnaire comprising 16 questions subdivided into three sections was prepared by the researchers for data collection. The questions which were simple and straight forward extracted information from couples on sexual enjoyment and sexual intimacy during the COVID-19 lockdown. Section A comprising six questions elicited information on the demographic characteristics of the respondents; Section B consisted of six questions which elicited information about respondents' sexual intimacy and sexual enjoyment during the COVID-19 lockdown; and Section C had five sub-groups of questions which requested information on barriers to sexual enjoyment among couples. An introductory information to the participants provided the conditions of confidentiality and anonymity, and encouraged

respondents to participate out of personal volition and conviction. Thus, participants provided information about their sex lives voluntarily.

Methods of data analysis: The number of responses and their percentages were obtained by descriptive statistics. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 23 and results descriptively presented by frequencies and percentages. Pearson Chi-Square (χ^2) was used to determine associations between respondents' characteristics (age, gender, lockdown location, type of accommodation, employment status, and level of misunderstanding) and sexual enjoyment at 5% significance level. p -value of $< 0.05\%$ was considered as statistically significant.

To assess the level of sexual enjoyment and improvement in sexual intimacy during the lockdown, response probabilities were computed using the bivariate logistic regression models to evaluate response probabilities associated with the various subgroups. This is because the response variable is dichotomous and the explanatory variables are categorical. The assessment is to show the probability that a person selected at random from a specified sub-group experienced improvement in sexual intimacy and enjoyed sex.

The response probability is mathematically expressed as follows:

$$P_i = P(\text{favourable response in the } i\text{th row}) = \frac{\exp(\eta)}{1 + \exp(\eta)}$$

where $\eta = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_kX_k$

In this study, the researchers made use of two sets of response probabilities. One set is based on enjoyment of sex as a response variable, while the other is based on improvement in sexual intimacy. The first is the probability that a person selected from a particular subgroup enjoyed sex during the lockdown. The response probabilities for the 4 sub-group are as follows:

P_1 = Probability that a male resident in Nigeria enjoyed sex

P_2 = Probability that a male resident abroad enjoyed sex

P_3 = Probability that a female resident in Nigeria enjoyed sex

P_4 = Probability that a female resident abroad enjoyed sex

The second is the probability that a person selected from a specified subgroup experienced improvement in sexual intimacy. In this case, the 4 response probabilities are:

μ_1 = Probability that a male resident in Nigeria experienced improvement in sexual intimacy

μ_2 = Probability that a male resident abroad experienced improvement in sexual intimacy

μ_3 = Probability that a female resident in Nigeria experienced improvement in sexual intimacy

μ_4 = Probability that a female resident abroad experienced improvement in sexual intimacy

The logistic regression model is stated as follows:

$$\text{Log} \left(\frac{p}{1-p} \right) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_kX_k$$

where p is the response probability which has already been defined, the β 's are parameters to be estimated, the x_i 's are explanatory variables. In this study, it reduces to:

$$\text{Log} \left(\frac{P}{1-P} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

where x1 is the explanatory variable gender and x2 is the variable location.

The logistic regression model whose response variable is “improvement in sexual intimacy” was obtained as follows:

$$\text{logit}(p) = 2.118 - 0.069 \text{ gender} - 0.676 \text{ location}$$

The logistic regression model with the response variable as “sexual enjoyment” was obtained as follows:

$$\text{logit}(p) = 0.906 - 0.037 \text{ gender} + 0.075 \text{ location.}$$

RESULTS

Descriptive data analysis:: More than half of the 148 respondents 81 (54.7%) were aged between 36-49years; 75 (50.7%) were females while 73(49.3%) were males. Majority 127 (85.8%) were Christians. Only 39 (26.4%) experienced the lockdown abroad, of which 20 (51.3%) were males, and 19 (48.7%) females. Majority 109 (73.6%) were locked down in Nigeria with 56 (51.4%) females and 53 (48.6%) males. The greater proportion 138 (93.2%) were government employees and most 89 (60.1%) lived in a 2-4-bedroom apartment, 23 (15.5%) lived in a duplex (Table 1).

Table 1:
Respondents’ characteristics during COVID-19 lockdown

Respondents’ characteristics	Frequency (n= 148)	Percentage (%)
Age (in years)		
16-25	6	4.1
26-35	32	21.6
36-49	81	54.7
50+	29	19.6
Gender		
Male	73	49.3
Female	75	50.7
Religion		
Christianity	127	85.8
Islam	9	6.1
Others	12	8.1
Place of residence during lockdown		
Nigeria	109	73.6
Diaspora	39	26.4
Gender at place of residence during lockdown		
Males during lockdown in Nigeria	53	48.6
Females during lockdown in Nigeria	56	51.4
Males during lockdown abroad	20	51.3
Females during lockdown abroad	19	48.7
Accommodation type during the lockdown		
Single room apartment	5	3.4
1-bedroom apartment	18	12.1
2-4-bedroom apartment	89	60.1
Duplex	23	15.5
Shared apartment	13	8.8
Employment status		
Government employment	138	93.2
Private employment	10	6.8

Sexual intimacy among respondents during the lockdown:

Majority 122 (82.4%) reported improvement in spousal love and affection with 40 (27.1%) who had sex 1-2 times a week; 10 (6.8%) had sex up to 7 times a week, and 15 (10.1%) had sex only once a month. The greater proportion 139 (93.9%) were heterosexual couples, however, 65 (43.9%) and 17 (11.5%) indulged in oral and anal sex respectively. Most respondents 106 (71.6%) enjoyed sex generally, while 42 (28.4%) did not (Table 2). As shown in Figure 1, 53.3% of the respondents had a high level of misunderstanding during the lockdown.

Table 2:
Sexual intimacy among respondents during COVID-19 lockdown

Respondents’ variables	Frequency (n= 148)	Percentage (%)
Improvement sexual intimacy		
Improved	122	82.4
Not improved	26	17.6
Sexual enjoyment		
Enjoyed sex	106	71.6
Did not enjoy sex	42	28.4
Frequency of sex		
2 times a month	9	6.1
1 time a month	15	10.1
7 times a week	10	6.8
3-4 times a week	38	25.6
1-2 times a week	40	27.1
I choose not to say	36	24.3
Sexual Status		
Homosexual	3	2.0
Heterosexual	139	93.9
Bisexual	6	4.1
Indulgence in oral sex		
Indulged	65	43.9
Did not	83	56.1
Indulgence in anal sex		
Indulged	17	11.5
Did not	131	88.5

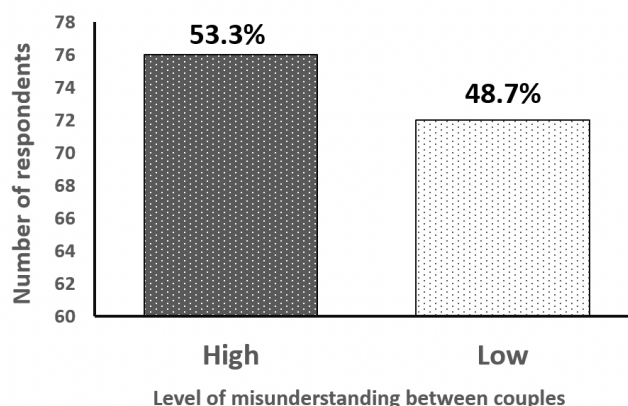


Figure 1
Level of misunderstanding among couples during Covid-19 lockdown

Barriers to sexual enjoyment among respondents during the lockdown: Sexual satisfaction during the lockdown was reported among most respondents 106 (71.6%), while 42 (28.4%) said they did not enjoy sex (Table 2). Barriers to

sexual enjoyment among respondents who did not enjoy sex were categorized under five groups: physical, communication, infidelity, accommodation type, and others. Among the physical barriers associated with lack of sexual enjoyment were non-romantic partners 12 (28.6%), lack of foreplay 11 (26.2%) and impotence/weak erection 9 (21.5%). For communication barriers, high level of misunderstandings was reported by majority 34 (80.9%); some respondents rated their communication flow as fair 16 (38.1%) while 14 (33.3%) rated as poor. For infidelity in marriage, most respondents 29 (69.1%) reported that their partners cheat in their relationships. Half of the respondents 21 (50.0%) lived in a 2-4-bedroom apartment, 8 (19.1%) lived in a 1-room apartment, and shared apartment respectively. Other barriers to sexual enjoyment were sexual starvation 13 (30.9%), lack of finance 12 (28.6%) and presence of in-laws during the lockdown 9 (21.4%) (Table 3).

Table 3:
Barriers to sexual enjoyment during COVID-19 lockdown

Categories	Barriers	Frequency (n= 42)	Percentage (%)
Physical barriers	Non-romantic partner	12	28.6
	Premature ejaculation	4	9.5
	Frigidity	3	7.1
	Impotence (weak erection)	9	21.5
	Dirty spouse	3	7.1
	Lack of foreplay	11	26.2
Communication barriers	Misunderstanding		
	High	34	80.9
	Low	8	19.1
	Communication flow		
	Excellent (5)	0	0
	Very good (4)	4	9.5
	Good (3)	8	19.1
	Fair (2)	16	38.1
Poor (1)	14	33.3	
Infidelity in marriage	My partner cheats	29	69.1
	I cheat	13	30.9
Accommodation type during the lockdown	Single room apartment	4	9.5
	1-bedroom apartment	8	19.1
	2 – 4- bedroom apartment	21	50.0
	Duplex	1	2.3
	Shared apartment	8	19.1
Other factors	Lack of finance	12	28.6
	Presence of in-laws	9	21.4
	Sexual starvation	13	30.9
	Lack of love spousal love and affection	8	19.1

Associations between respondents' characteristics and sexual enjoyment: Table 4 shows the associations between respondents' characteristics (age, gender, place of residence during the lockdown, type of accommodation, employment status, level of misunderstanding), and sexual enjoyment during the lockdown. The Chi-square tests of independence

shows significant associations between frequent misunderstandings and sexual enjoyment ($p = 0.0001$) as well as accommodation type and sexual enjoyment (0.00001). Conversely, respondents' age ($p = 0.3577$), gender (0.9175), place of residence during the lockdown ($p = 0.6995$), and employment status (0.1163) were not statistically significantly associated with sexual enjoyment.

Logistic regression modeling: To assess the level of sexual enjoyment and improvement in sexual intimacy during the lockdown, response probabilities were computed using the bivariate logistic regression model. The study groups were cross-tabulated into 4 sub-groups, namely: males who were resident in Nigeria, males who were resident abroad, females who were resident in Nigeria and females who were resident abroad. The response probabilities showed that male respondents in Nigeria (0.71) and those in diaspora (0.73) enjoyed sex, compared to female respondents in Nigeria (0.70) and those in diaspora (0.72). Also, the probability that a male respondent resident in Nigeria experienced improvement in sexual intimacy was obtained as 0.85, while a male respondent resident abroad yielded 0.73. The probability that a female respondent resident in Nigeria experienced improvement in sexual intimacy was obtained as 0.73 compared to that of a female respondent resident abroad which equally yielded 0.73. From these probabilities, there was no significant difference in sexual enjoyment and improvement in intimacy between Nigerian couples who were resident in Nigeria and those who were resident abroad during the lockdown. However, the probability of respondents' opinion regarding sexual intimacy was slightly higher for males than the females both at home and abroad (Table 5a). The logistic regressions which yielded the response probabilities for sexual enjoyment and improvement in sexual intimacy were based on the results on Tables 5b and 5c respectively

DISCUSSION

Pleasurable sex can bring about emotional satisfaction, improved sexual intimacy, and marital bliss among couples. Conversely, prolonged sexual abstinence can negatively impact family harmony and the wellbeing of couples. Although pleasurable sex is designed to be enjoyed and consummated in marriage, several barriers exist which adversely affect sexual enjoyment and intimacy. In this study, misunderstanding among couples was a major barrier to sexual enjoyment. There was a statistically significant association between misunderstanding and sexual enjoyment ($p = 0.00001$), implying that the higher the level of misunderstanding, the lower the level of sexual enjoyment and intimacy. Misunderstanding can hamper sexual intimacy and sexual enjoyment among couples. This conclusion is in harmony with previous studies (Forbes *et al.*, 2019; Costantini *et al.*, 2021; Ibarra, 2020; and Ashdown, 2011). This notwithstanding, the situation in Nigeria is somewhat different because of the COVID-19 lockdown which provided a vacation environment for Nigerian couples. Although 51.3% of the study participants reported high level of misunderstanding, 71.6% still enjoyed sex.

Table 4:

Associations between respondents' characteristics and sexual enjoyment during COVID-19 lockdown

Respondents' characteristics	Sexual enjoyment		Total	Test statistic	P-value
Age (in years)	Enjoyed sex	Did not enjoy		χ^2 Cal.= 3.2289 df = 3	P = 0.3577 p-value = > 0.05
16-25	5	1	6		
26-35	26	6	32		
36-49	57	24	81		
50 and above	18	11	29		
Total	106	42	148		
Gender	Enjoyed sex	Did not enjoy	Total	χ^2 Cal.= 0.0107 df = 1	P = 0.9175 p-value = > 0.05
Males	52	21	73		
Females	54	21	65		
Total	106	42	148		
Place of residence during lockdown	Enjoyed sex	Did not enjoy	Total	χ^2 Cal.= 0.1489 df = 1	P = 0.6995 p-value = > 0.05
Nigeria	79	30	109		
Abroad	27	12	39		
Total	106	42	148		
Type of Accommodation	Enjoyed sex	Did not enjoy	Total	χ^2 Cal.= 23.4108 df = 4	P = 0.000105 p-value = < 0.05
Single room	1	4	5		
1-bedroom	10	8	18		
2-4 bedroom	68	21	89		
Duplex	22	1	23		
Shared apartment	5	8	13		
Total	106	42	148		
Employment status	Enjoyed sex	Did not enjoy	Total	χ^2 Cal.= 2.4668 df = 1	P = 0.1163 p-value = > 0.05
Government employees	101	37	138		
Private employees	5	5	10		
Total	106	42	148		
Misunderstanding between couples	Enjoyed sex	Did not enjoy	Total	χ^2 Cal.= 20.5682 df = 1	P = 0.00001 p-value = < 0.05
Higher level	42	34	76		
Low level	64	8	72		
Total	106	42	148		

Table 5a:

Response probability assessment for sexual enjoyment and improvement in sexual intimacy

Lockdown location	Response probabilities	
	P (Sexual enjoyment)	P (Improvement in sexual intimacy)
Males resident in Nigeria	0.71	0.85
Males resident in Abroad	0.73	0.73
Females resident in Nigeria	0.70	0.73
Females resident in Abroad	0.72	0.73

Table 5b:

Response probability assessment for gender, location and sexual enjoyment

Gender	Lockdown location	Sexual enjoyment		Total
		Enjoyed Sex	Did not	
Male	Nigeria	27	10	37
Male	Abroad	25	11	36
Female	Nigeria	28	11	39
Female	Abroad	26	10	36
Total	4 Categories	106	42	148

Table 5c:

Response probability assessment for gender, location and improvement in sexual intimacy

Gender	Lockdown location	Improvement in sexual intimacy		Total
		Improvement	No improvement	
Male	Nigeria	44	9	53
Male	Abroad	16	4	20
Female	Nigeria	46	10	56
Female	Abroad	16	3	19
Total	4 Categories	122	26	148

Economic recessions, financial difficulties, lockdowns and daily stress have been shown to have negative impacts on mental health and sexual intimacy among couples (Margerison-Ziilko *et al.*, 2016; Forbes *et al.*, 2019; Costantini *et al.*, 2021; De Rose *et al.*, 2021). Studies in Italy (Cocci *et al.*, 2020) and Kenya (Osuri *et al.*, 2021) observed a significant decrease in sexual satisfaction during the lockdown, with more than half of respondents claiming a complete absence of

sexual pleasure. The findings in this present study show the reverse. Although the COVID-19 pandemic and lockdowns were associated with fear, anxiety, panic and emotional stress, the descriptive statistics for improvement in sexual intimacy (82.4%) and the response probability for improvement in sexual intimacy 0.76 (76.0%) both indicate a significant improvement in sexual intimacy among Nigerian couples. The lockdown in Nigeria and restriction in movement was responsible for this improvement in sexual intimacy. Majority of the respondents were government employees who received regular monthly salaries during the stay at home order. Throughout the period, Nigerian couples had job security, there was no work-from-home policy. There was less financial stress associated with school fees, expenses on weekly transportation, expenditure on inter-state and inter-country travels, cost of vehicular maintenance, preparation of children for school, and other daily routines at work and in schools. Nigerian couples therefore maximized the benefits of the COVID-19 lockdown which was evident in the improvement in sexual intimacy and sexual enjoyment.

This study found no statistically significant association between age and sexual enjoyment. This is because most of the study participants were sexually active. Also, gender was not statistically associated with sexual enjoyment, implying that both sexes enjoyed sex during the lockdown. However, the response probabilities revealed that male respondents enjoyed sex (males in Nigeria 0.71; males abroad 0.73) compared to their female partners (females in Nigeria 0.70; females abroad 0.72). Our findings are in tandem with the studies by Panzeri *et al.* (2020); WHO (2008); Rokach (2019); and de Oliveira *et al.* (2021). The decrease in sexual enjoyment by female participants in this present study can be attributed to the fear, anxiety and panic associated with the breaking news about the coronavirus disease and lockdown. There is substantial evidence in the literature showing significant associations between stress and sexual enjoyment. The sudden closure of schools at all levels occasioned by the lockdown kept the children, both young and old at home. The responsibilities of child upbringing with associated increased workload from house chores, may have further contributed to low sexual enjoyment experienced by the females in this study.

Sexual enjoyment and privacy are positively correlated; lack of privacy in a home is a barrier to sexual pleasure among couples. In their study, Dewitte *et al.* (2020) found that living conditions like less-lone-time, and more time with children were observed to negatively affect sexual intimacy among couples. Our study found a statistically significant association between accommodation type and sexual enjoyment ($p = 0.00001$). This means that sexual enjoyment or sexual intimacy depends on the nature of accommodation couples live in. Although the COVID-19 lockdown imposed on Nigerians by the Federal Government led to the closure of schools at all levels, and students remained at home for longer periods with the parents thereby eroding privacy in many homes, more than half of our study participants (60.1%) lived in apartments that can be classified as private, with 45.9% who reported sexual enjoyment during the lockdown. Nigerian couples were therefore less concerned with privacy

challenges, while focusing on improvement in their sexual intimacy and sexual enjoyment while the lockdown lasted.

In conclusion, this study revealed that COVID-19 lockdown improved sexual intimacy among Nigerian couples, both among respondents who resided in Nigeria and those in diaspora. Although frequent misunderstandings and accommodation type (privacy) were strongly associated with sexual enjoyment and intimacy, participants reported improvement in sexual intimacy and sexual enjoyment. The lockdown provided a compulsory holiday for Nigerian couples, most of whom were government employees who received their monthly salaries, thus cushioning the effect of the lockdown on families. The response probability assessment for sexual enjoyment showed that men enjoyed sex and intimacy more than women. In the face of rising global uncertainties and economic downturn, regular pleasurable sex among married couples is strongly advocated to enhance the physical, mental and psychological wellbeing.

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