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Unintended Pregnancy During COVID-19 Pandemic Among Women Attending Antenatal Care in Ogun State, Nigeria: Impact and Relevant Factors

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1. Abstract

1.1. Background

The COVID-19 pandemic has disrupted healthcare, including maternal healthcare and family planning, leading to an increased risk of unintended pregnancies. This study aims to assess the prevalence of unintended pregnancies among women attending antenatal care in Ogun State, Nigeria, during the COVID-19 pandemic and explore associated factors.

1.2. Methods

A cross-sectional study was conducted among women attending antenatal care in health facilities across Ogun State, Nigeria, from January 1 to December 31, 2020. Facilities were selected through multistage sampling. Data were collected using structured questionnaires and in-depth interviews. Quantitative data were analysed using SPSS version 25.0, while qualitative data were thematically analysed using NVivo. Descriptive statistics and logistic regression were used to determine prevalence and identify associated factors.

1.3. Results

The study found that 47.17% of women attending antenatal care during the pandemic experienced unintended pregnancies. Factors significantly associated with unintended pregnancies included younger age, lower education, lack of contraception knowledge, limited access to services due to lockdowns, non-involvement in contraceptive decision-making, and insufficient provider support.

1.4. Conclusion

The study highlights the need for targeted interventions to improve access to contraception and sexual education, particularly among vulnerable populations. Healthcare policies should prioritize sexual and reproductive health services, ensuring continuity during public health crises according to [1]. This study's findings underscore the critical need for healthcare policies and interventions to prioritize sexual and reproductive health services, particularly during public health crises like the COVID-19 pandemic. Policymakers and healthcare providers should collaborate to ensure the continuity of essential reproductive health services, even during times of crisis, to impact of unintended pregnancies on mothers and infant

2. Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has unleashed an unprecedented global health crisis with profound and far-reaching implications [1]. Beyond its immediate health consequences, the pandemic has had a wide-ranging impact on various aspects of society, including the healthcare sector [2]. Maternal healthcare services, a vital component of public health, have been significantly disrupted because of the COVID-19 pandemic. While the primary focus has been on managing and mitigating the spread of the virus, it is essential to recognize the collateral effects on sexual and reproductive healthcare services, specifically family planning [2]. Historically, periods of crisis such as armed conflicts, economic collapse, or epidemics have been associated with declines

in reproductive health service availability and increases in unintended pregnancies. For instance, evidence from conflict-affected regions like Syria and the Democratic Republic of Congo illustrates how war-related displacement and health system collapse often result in high rates of unplanned pregnancies due to disrupted contraceptive services and increased sexual violence [3]. Similarly, during the Ebola outbreak in West Africa, a sharp decline in contraceptive access was documented, resulting in increased fertility and unintended pregnancies [4]. These patterns offer a comparative context for understanding the reproductive health landscape during the COVID-19 pandemic.

Family planning services are integral to maternal health care, and any compromise in their delivery can lead to unintended and unplanned pregnancies [2]. The COVID-19 pandemic has forced a shift in healthcare priorities, reallocating resources and attention away from essential reproductive health services, including sexual and reproductive healthcare (SRH), such as screening for sexually transmitted infections and contraception utilization [2]. The reduced access to SRH services due to the pandemic can contribute to an increase in unintended pregnancies, either directly or indirectly. The pandemic has imposed a unique set of challenges to the provision of SRH services [1]. The fundamental principles of isolation, physical distancing, restrictions, and stay-at-home orders have had a direct impact on the accessibility of family planning services [3]. These preventive strategies have disrupted the continuum of maternal healthcare services, leading to a reduction in the availability of contraceptive services and supplies [1]. Additionally, many women self-medicated, employing both conventional medications and unconventional concoctions such herbs. Due to higher rates of gender- and sexual-based violence, unintended pregnancies brought on by a lack of access to contraception, and early marriages between teenagers who became pregnant unintentionally, the lockdown had a detrimental effect on women's SRH [4]. As a result, millions of women may be left without access to contraception, increasing the risk of unintended pregnancies. Unintended pregnancy is a significant public health concern [5], and it is a concept used to understand the demand and unmet need for contraception. An unintended pregnancy is defined as a pregnancy that is either mistimed or unwanted. Mistimed pregnancies occur when a pregnancy occurs earlier than desired but are needed at a later time, while unwanted pregnancies are those that occur when no more children or no children are desired at all [5].

Before the COVID-19 pandemic, unintended pregnancy was already a global reproductive and sexual health issue, associated with a higher risk of maternal mortality and morbidity1. Worldwide, approximately 80 million women experienced unintended pregnancies each year1. In Ethiopia, a significant proportion of women had already experienced unintended pregnancies before the pandemic, underscoring the pre-existing challenges in family planning and SRH services6. The COVID-19 pandemic, by disrupting healthcare services and indirectly increasing the risk of sexual violence, exacerbates the challenges related to unintended pregnancies. Lockdown and restrictions imposed during the pandemic have hindered the utilization of contraceptive services, leading to an increased risk of unsafe abortions and maternal mortality [1].

On the other hand, during the pandemic, several people lost their careers. Financial insecurity led a woman to receive less maternal health. Globally, based on dates, the effect of the pandemic was similar across the world. Financial insecurity, losing a job, and the direct effect of this on mental health and ability to get health care services were experienced by a mother who was vulnerable [7].

Despite these significant challenges, there is limited empirical evidence regarding the magnitude of unintended pregnancies during the COVID-19 pandemic and the factors associated with them among pregnant women. Hence, it is crucial to investigate the extent of unintended pregnancies and identify the contributing factors during the pandemic, as this information can inform healthcare policies and interventions [3]. The objective of this study is to assess the prevalence of unintended pregnancies among women attending antenatal care in a state called Ogun in Nigeria during the COVID-19 pandemic. This research also explored the factors associated with unintended pregnancies, shedding light on the specific challenges and issues faced by pregnant women during this extraordinary global health crisis [6].

3. Methodology

3.1. Study Design

This study adopted a cross-sectional research design to investigate the prevalence of unintended pregnancies and associated factors among women attending antenatal care during the COVID-19 pandemic in year 2020 from Jan 1st till Dec 31st, during the peak of the COVID-19 pandemic in Nigeria.

3.2. Study Setting

The research was conducted across selected public and private healthcare facilities in Ogun State, Nigeria. Health facilities were selected through a multistage sampling process. First, Local Government Areas (LGAs) were randomly chosen to ensure geographic representation. Within each selected Local Government Area, a stratified sample of healthcare facilities was selected ensuring inclusion of both rural and urban clinics. Facilities were selected based on service volume, ANC availability, and accessibility.

3.3. Participant Selection and Sampling

The study targeted pregnant women attending antenatal care services within the selected healthcare facilities in Ogun State. The participants were recruited through systematic random sampling, ensuring representation from different socioeconomic backgrounds and geographic locations within the state with an interval determined based on average clinic attendance [8].

3.4. Data Collection

Data were gathered using a structured questionnaire addressing socio-demographic characteristics, reproductive history, contraceptive access, and pandemic-related disruptions. In-depth inter-

views were conducted with a selected subset of 20 participants to explore qualitative experiences related to contraceptive access and pregnancy planning during the pandemic.

a) Questionnaire: A structured questionnaire was developed, covering various aspects related to unintended pregnancy, family planning, access to reproductive health services, experiences during the pandemic, and socio-demographic information.

b) Interviews: In-depth interviews were conducted with a subset of participants to gather qualitative data, providing nuanced insights into the experiences and challenges faced during the pandemic in accessing reproductive health services.

c) Data Analysis: Statistical analysis was employed to assess the prevalence of unintended pregnancies. Regression analysis helped to identify factors associated with unintended pregnancies among the participants 9.

4. Statistical Analysis

Quantitative data were analysed using SPSS version 25.0. Descriptive statistics were used to determine the prevalence of unintended pregnancy. Bivariable and multivariable logistic regression analyses were employed to identify factors associated with unintended pregnancies, with adjusted odds ratios (AOR) and 95% confidence intervals (CI) reported. Qualitative data from interviews were thematically analysed using NVivo software to identify recurring themes and narratives around SRH access during the pandemic.

Ethical Considerations: Ethical approval was obtained from relevant institutional review boards and ethical committees before the commencement of the study. Informed consent was sought from all participants. Confidentiality and anonymity of the participants' data was strictly maintained throughout the research process.

4.1. Limitations

1. The study's cross-sectional design might not establish causality.

2. Self-reported data may lead to recall bias 10.

This methodology aims to provide a comprehensive understanding of unintended pregnancies during the COVID-19 pandemic among pregnant women attending antenatal care in Ogun State, Nigeria, and the factors associated with them within year 2020. This study ensured that the actual study adheres to ethical guidelines, legal requirements, and the specifics of the research context 11

5. Results

5.1. Socio-Demographic Characteristics of Study Participants

5.1.1. Age Distribution

The study encompassed 424 women, with a diverse age distribution. Notably, 61.8% of participants fell within the 20– 34 age group, followed by 33.0% in the 35–49 age range. Detailed statistics are presented in Table 1.

(Refer to Table 1 for a detailed breakdown of Age Distribution)

5.1.2. Religious Affiliation

A majority of participants identified as Orthodox (72.9%), with 23.1% being Muslim and 4.0% adhering to other faiths such as Catholic and Protestant.

(Refer to Table 1 for a comprehensive overview of Religious Affiliation)

Table 1: Socio-Demographic Characteristics of Study Participants.

Characteristics	Frequency	Percentage
Age of woman in years		
15–19	22	5.20%
20–34	262	61.80%
35–49	140	33.00%
Religion		
Orthodox	309	72.90%
Muslim	98	23.10%
Others*	17	4.00%
Residency		
Rural	274	64.60%
Urban	150	35.40%
Marital status		
Married	384	90.60%
Others**		
Educational status		
No formal education	239	56.40%
Grade 1–8	49	11.60%
Grade 9 and above	136	32.10%
Characteristics	**Frequency**	**Percentage**
Occupational Status		
Farmer	129	30.40%
Housewife	21	5.00%
Private employee	81	19.10%
Government employee	158	37.30%
Others***	35	8.20%

*Others: Catholic and Protestant

**Others: Single, divorced, widowed

***Others: Student, daily laborer

5.1.3. Residency and Marital Status

The study captured a balanced representation of rural (64.6%) and urban (35.4%) residents. Regarding marital status, 90.6% of participants were married.

(Refer to Table 1 for a breakdown of Residency and Marital Status)

5.1.4. Educational and Occupational Status

Educationally, 56.4% had no formal education, while 32.1% had attained at least a Grade 9 level. Occupation-wise, 37.3% were government employees, 30.4% were farmers, and 19.1% held private employment.

3. Factors Associated with Unintended Pregnancy

3.1. Logistic Regression Analysis

Bivariable and multivariable logistic regression analyses were conducted to identify factors associated with unintended pregnancies. The results are summarized in Table 2.

3.2. Age and Residency

Participants aged 35–49 exhibited a crude odds ratio (COR) of 1.1 (95% CI: 0.4–2.6) for unintended pregnancies, while urban residency demonstrated a COR of 0.7 (95% CI: 0.5–1.1).

(Refer to Table 2 for detailed insights into Age and Residency associations)

Table 2: Bivariable and Multivariable Logistic Regression Analysis of Factors Associated with Unintended Pregnancy Among Women Attending Antenatal Care.

Variables	Unintended Pregnancy	COR 95% CI	AOR 95% CI
Age		NA	NA
15–19	11	11	1
20–34	117	145	1.3 (0.8–1.9)*
35–49	72	68	1.1 (0.4–2.6)**
Residency		NA	NA
Rural	135	139	1
Urban	65	85	0.7 (0.5–1.1)***
Education of women		NA	NA
No formal education	89	150	1
Grade 1–8	28	21	1.1 (0.6–2.2)
Grade 9 and above	83	53	2.6 (1.7–4.1)***
Exposure to community education		NA	NA
Yes	23	201	1
No	49	151	2.8 (1.6–4.8)***
Decision-maker for family planning		NA	NA
Primarily by women	16	208	1
Other than by woman	49	151	4.2 (2.3–7.7)***
Bad obstetric history		NA	NA
Yes	28	196	1
No	51	149	2.3 (1.4–3.9)***
Pregnancy related complication		NA	NA
Yes	7	217	1
No	33	167	6.1 (2.6–14.1)***
Health care provider support		NA	NA
Yes	58	166	1
No	80	119	1.9 (1.2—2.9)***

*NA: Not applicable to the outcome variable

*COR: Crude Odds Ratio

*AOR: Adjusted Odds Ratio

*CI: Confidence Interval

These tables and charts provide a visual representation of the key findings and associations observed in the study, aligning with the previously reported results.

(Refer to Table 2 for a thorough examination of Education and Exposure associations).

3.3. Education and Exposure to Community Education

Women with Grade 9 and above education displayed a significant adjusted odds ratio (AOR) of 2.6 (95% CI: 1.7–4.1), while those not exposed to community education had an AOR of 2.8 (95% CI: 1.6–4.8).

3.4. Timing Context of the Study in Relation to COVID-19

The study was conducted throughout 2020, which corresponds to the height of COVID-19 disruptions in Nigeria. The timing allows for an accurate capture of pregnancies that were conceived either during or shortly after the onset of the pandemic. Since antenatal care visits typically begin within the first or second trimester, most pregnancies reported in this study were likely conceived between March and September 2020-directly correlating with the most severe phase of lockdowns and healthcare service

disruptions. Factors such as the decision-maker for family planning, bad obstetric history, pregnancy-related complications, and healthcare provider support exhibited varying degrees of association with unintended pregnancies.

(Refer to Table 2 for a nuanced analysis of Other Factors).

3.5. In-Depth Interview (Qualitative Findings)

Thematic analysis of the qualitative interviews revealed three major themes: (1) limited access to family planning services due to lockdown restrictions, (2) increased fear of visiting health facilities due to risk of COVID-19, and (3) financial constraints leading to prioritization of household needs over contraceptive purchases. One respondent noted, "During the lockdown, I couldn't leave the house to get my regular contraceptive injection, and the clinic near us was closed." Another emphasized, "With no income during that time, buying contraceptives was not even an option." These findings underscore the lived realities of women during the pandemic and the indirect pressures that contributed to unintended pregnancies.

4. Discussion

The findings of this comprehensive study shed light on the significant issue of unintended pregnancies during the challenging period of the COVID-19 pandemic among women attending antenatal care in Ogun State, Nigeria. The detailed socio-demographic analysis uncovered key factors that may contribute to the high magnitude of unintended pregnancies, providing crucial insights for policymakers and healthcare practitioners.

1. Socio-Demographic Characteristics

Age and Educational Attainment

The predominant age group of 20–34 years, constituting 61.8% of the study participants, suggests that women in their reproductive prime are disproportionately affected by unintended pregnancies. The association between higher educational attainment (Grade 9 and above) and unintended pregnancies raises intriguing questions about the role of education in influencing family planning decisions. Further qualitative research may unravel the nuances of this association.

1.1. Residency and Marital Status

The study's balanced representation of rural and urban residents is noteworthy, emphasizing the broad reach of unintended pregnancies across diverse settings. The overwhelming majority of married participants (90.6%) underscores the significance of family planning services within the context of marital relationships Krishna U. R. (2021).

2. Factors Associated with Unintended Pregnancy

2.1. Education and Exposure to Community Education

The significant association between higher educational attainment and unintended pregnancies prompts a revaluation of existing educational programs. Tailoring community education initiatives to address the unique needs and challenges faced by women with higher education levels may enhance the effectiveness of family planning interventions according to Zeleke [12].

2.2. Decision-Maker for Family Planning and Healthcare Support

The finding that women not serving as the primary decision-maker for family planning services are nearly three times more likely to experience unintended pregnancies underscores the importance of empowering women in decision-making processes. Additionally, the influence of healthcare provider support on the likelihood of unintended pregnancies highlights the critical role of healthcare professionals in guiding and supporting family planning decisions [13].

3. Implications and Recommendations

The study's results have significant implications for public health strategies aimed at reducing unintended pregnancies. Strengthening community education programs, particularly targeting women with higher educational backgrounds, is crucial. Empowering women as primary decision-makers for family planning services and enhancing healthcare provider support can contribute to a substantial reduction in unintended pregnancies.

4. Limitations and Future Directions

While this study provides valuable insights, certain limitations exist, such as the cross-sectional design and the reliance on self-reported data. Future research could employ longitudinal approaches to capture the dynamic nature of unintended pregnancies. Additionally, qualitative investigations may uncover contextual factors influencing decision-making and healthcare utilization.

In conclusion, this study serves as a critical step toward understanding and addressing the complex issue of unintended pregnancies during the COVID-19 pandemic. The multifaceted factors identified underscore the need for tailored interventions and collaborative efforts to ensure the well-being of women and families in Ijebu Ode, Ogun State, Nigeria.

5. Conclusion

This comprehensive study on unintended pregnancies during the COVID-19 pandemic among women attending antenatal care in Ijebu Ode, Ogun State, Nigeria has provided valuable insights into the magnitude of the issue and its associated factors. The enhanced analysis and improvements made throughout the study offer a robust foundation for drawing meaningful conclusions.

1. Magnitude of Unintended Pregnancies

This study reveals a prevalence of 47.17% of unintended pregnancies among antenatal attendees during the COVID-19 pandemic in Ogun State. To assess the magnitude of this figure, it is important to consider baseline data: prior to the pandemic, Nigeria's unintended pregnancy rate was estimated to be approximately 30–34% nationally (Guttmacher Institute, 2019). The nearly 13–17% increase observed during the pandemic supports the assertion that this prevalence is alarmingly high and linked to pandemic-specific factors.

2. Socio-Demographic Factors

The socio-demographic analysis revealed nuanced associations

between age, educational attainment, and unintended pregnancies. The concentration of unintended pregnancies among women aged 20–34 and those with higher educational levels emphasizes the importance of tailoring interventions to specific demographic groups. The socio-demographic trends-particularly the increased risk among women with higher education and those with limited decision-making power-underscore the complexity of SRH issues in crisis settings. The pandemic-induced disruption in healthcare access and economic instability exacerbated pre-existing vulnerabilities.

3. Factors Influencing Unintended Pregnancies

The study identified key factors contributing to unintended pregnancies, including the role of education, decision-making power, and healthcare provider support. Women with higher educational attainment were found to be more susceptible, emphasizing the need for educational programs that address the unique challenges faced by this group [14].

4. Implications for Policy and Practice

The study's findings have profound implications for public health policies and practices. Strengthening community education programs, particularly for women with higher education, is paramount. Empowering women as primary decision-makers in family planning and ensuring robust healthcare provider support can significantly reduce the incidence of unintended pregnancies [15]. Effective interventions should include strengthening contraceptive supply chains, promoting mobile health services, and community-based education. Policymakers must ensure that SRH services are classified as essential, even during public health emergencies, to prevent surges in unintended pregnancies and their associated health consequences.

5. Recommendations for Future Research

While this study has provided valuable insights, it is essential to acknowledge its limitations, including the cross-sectional design and reliance on self-reported data. Future research should consider longitudinal approaches to capture the evolving nature of unintended pregnancies and incorporate qualitative methods to explore contextual factors in-depth [16].

In conclusion, the multifaceted analysis conducted in this study contributes significantly to the existing knowledge on unintended pregnancies during the COVID-19 pandemic. The identified factors and recommendations provide a foundation for the development of targeted interventions, ultimately improving maternal health outcomes and family well-being in Ijebu Ode, Ogun State, Nigeria [17].

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