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Focus and Scope

The African Journal of Tropical Medicine and Biomedical Research is a multidisciplinary and international journal published by the College of Health Sciences, Delta State University of Abraka, Nigeria. It provides a forum for Authors working in Africa to share their research findings on all aspects of Tropical Medicine and Biomedical Sciences and to disseminate innovative, relevant and useful information on tropical medicine and biomedical sciences throughout the continent. The journal will publish original research articles, reviews, editorials, commentaries, short reports, case reports and letters to the editor. Articles are welcome in all branches of medicine and dentistry including basic sciences (Anatomy, Biochemistry, Physiology, Pharmacology, Psychology, Nursing etc) and clinical sciences (Internal Medicine, Surgery, Obstetrics and Gynaecology, Dental surgery, Child Health, Laboratory Sciences, Radiology, Community Medicine, etc). Articles are also welcome from social science researchers that document the intermediating and background social factors influencing health in countries of Africa. Priority will be given to publication of articles that describe the application of the principles of primary health care in the prevention and treatment of diseases.

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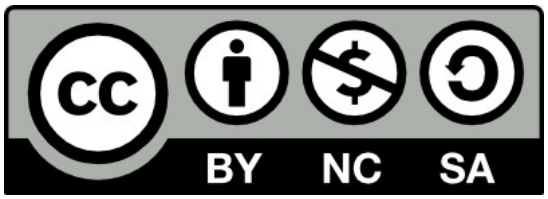

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Induced Abortion As A Method Of Contraception By Married Women With Unintended Pregnancy In Delta State, Nigeria: Prevalence, Predictors, And Reproductive Health Burden

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ABSTRACT

Introduction: Unsafe abortion is an important cause of maternal death, globally. Nigeria contributes about twenty percent to the global figure. Induced abortion by married women as a method of contraception may be associated with life threatening complications**.** The study determined the prevalence, predictors, and the reproductive health burden of induced abortion, as a method of contraception, among married women with unintended pregnancy in Delta State.

Materials and Method: This was a cross-sectional study conducted in three public health facilities in Delta State. Participants were recruited through census sampling. Interviewer assisted questionnaire was used to collect data, which was subsequently analysed Statistical Product and Service Solution version 23. The level of statistical analysis was set at $P<0.05$.

Results: The age range of participants was 18-49 years, with a mean age of 29.52 ± 5.78 years. Prevalence of unintended pregnancy was 58.0 %. A third (30.7%) had a history of contraceptive use, while 42.3% a history of termination of pregnancy. The major (38.8%) reason for unintended pregnancy was contraceptive failure. The main (8.8%) complication was abdominal pain. The number of living children and unplanned pregnancy were the predictors for induced abortion ($P< 0.001$; $P < 0.001$), respectively.

Conclusion: This study showed a high prevalence of induced abortion among multiparous married women with unintended pregnancy, in Delta State. However, there was minimal adverse reproductive health outcome among the participants.

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INTRODUCTION

Induced abortion is a medical or surgical procedure that allows artificial termination of unintended or unwanted pregnancies.[1] On a global scale, 25 million of unsafe abortion occur annually, with estimated 97% taking place in developing countries.[2] Unsafe abortion is among the leading causes of maternal mortality and morbidity in developing countries.[3,4]

In Nigeria, and most part of Sub-Saharan Africa, induced abortion is illegal and considered criminal offence, with resultant procurement of abortions by women in clandestine, unhygienic environments, and adverse outcome, such as haemorrhage, pelvic sepsis, genital tract trauma, uterine perforation among others.[3, 5, 6] The long-term reproductive health complication include chronic pelvic inflammatory disease, ectopic

pregnancy and infertility.[7]

A clinical study by Oye-Adeniran et al,[8] in the Western part of Nigeria, showed that 30.2% of women who presented for induced abortion were married women, and the aim of their study was to determine the use of pregnancy termination for birth spacing or limitation of births. This practice questions the adoption and practice of modern or even traditional methods of contraception in the study setting and at the time of study. Our study however, aimed to determine the prevalence, predictors, and the reproductive health burden of induced abortion by married women with unintended pregnancy in Delta State, South-South Nigeria. To the best knowledge of the authors, there are no studies on induced abortion by married women in Delta State. It is hoped that this multicentred-health-facility study, would give some insight into the behavioural pattern of married women with unintended pregnancy, contraceptive usage, and induced abortion in Delta State. Findings from this study may help in shaping policy formulation by the state Government on birth control.

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MATERIALS AND METHODS

This was a cross-sectional survey conducted in the following three health facilities in Delta State: The Delta State University Teaching Hospital (DELSUTH), Oghara. This is a tertiary health facility, sited in the semi-urban community of Oghara, in the Ethiope-West Local Government Area; Central Hospital Warri (CHW), is a tertiary Health facility located in the densely populated city of Warri, which is regarded as the commercial State Capital, and located in Warri South Local Government Area**;** Eku Baptist Government Hospital (EBGH), is a busy rural Secondary Health facility, located in the Ethiope East Local Government Area. While DELSUTH and EBGH are located in the Delta Central Senatorial zone, CHW is located in Delta South Senatorial zone. The study population were allocated proportionately according to the different monthly post- natal volume of married women between the age of 18 and 49 years. The CHW, had the largest population of respondents, followed by EBGH. The study was conducted in three months, from January 1, 2025 - March 31, 2025.

At each facility, eligible respondents were recruited consecutively in a census sampling technique until the allotted number for each facility was completed.

Inclusion criteria: Married women from the age of 18-49 years, with at least a living child who presented at the post- natal clinic of study facilities.

Exclusion criteria: Single mothers and acutely ill-married women who required emergency service Data was collected using a semi-structured interviewer administered questionnaire on sociodemographic characteristics, reproductive health history and knowledge. Information was obtained on unintended pregnancy and the induced abortion. The population in the study settings widely speak and understand the English Language, and where indicated interpreters were deployed. Information from the study questionnaires was transferred to a computer dataset, which was cleaned up by the lead researcher before data analysis.

Data processing and Analysis.

Data collected was analysed using SPSS version 25.0 software. The socio-demographic characteristics of respondents was summarized using frequency tables and percentages. The awareness of respondents about contraceptives; the use of contraceptives; desire to space and limit birth; proportion of married women with

unintended and induced abortion was, method of induced abortion, and complication from induced abortion was determined by using univariate analysis. Chi-square was used for test of association; a p-value of <0.05 was considered statistically significant. Multivariate binary logistic regression was used to assess the predictors of induced abortion.

RESULTS

A total of 390 eligible women were recruited for the study, out of which the questionnaires for 362(92.8%) was available for analysis. Information in the remaining 28 proformas was insufficient for inclusion in the analysis.

Table 1 shows the baseline sociodemographic parameters of the study population. Many (53.6%), of the participants were in the 21-30 age group, with a mean age of 29.52 ± 5.78 years. In addition, the majority (95.6%), of the participants were Christians, with secondary level of education (50.6%), traders (48.9%), and had 1 child (35.4%).

Table 1: Sociodemographic parameters of participants

		Frequency (n)	Percentage (%)
Age group (years)	*≤20*	21	5.8
	21-30	194	53.6
	31-40	138	38.1
	≥41	9	2.5
	Mean ± SD	29.52 ± 5.78	
Religion	*Christian*	349	95.6
	Islam	12	3.3
	Others	4	1.1
Level of Education	*No formal education*	6	1.6
	Primary	26	7.2
	Secondary	183	50.6
	Post-secondary	147	40.6
Occupation	*Unemployed*	57	15.7
	Unskilled	32	8.8
	Artisan	35	9.7
	Trader	177	48.9
	Farmer	12	3.3
	Professional	49	13.5
Number of children	*1*	128	35.4
	2	109	30.1
	3	68	18.8
	4	41	11.3
	5	16	4.5

The prevalence of unintended pregnancy and induced abortion is shown in Table 2. Only about a third of the participants (30.7%) had ever used any contraceptive, with more than half (58.0%) having unintended pregnancies. Furthermore, 42.3% of the participants had induced abortion, with 21.0% performing it once, while 15(6.9%) participants had a history of three or more induced abortions.

Table 2: Prevalence of unintended pregnancy and induced abortion among participants

		Frequency (n)	Percentage (%)
Contraceptive ever used	*Yes*	111	30.7
	No	251	69.3
Unintended pregnancies	*Yes*	210	58.0
	No	152	42.0
Number of Unintended Pregnancies	*None*	152	42.0
	1	68	18.8
	2	75	20.7
	3	34	9.4
	≥4	33	9.2
History of Induced abortion	*Yes*	153	42.3
	No	209	57.7
History of Number of induced abortions (n=153; 42.3%)	*1*	76	21.0
	2	52	14.4
	≥3	25	6.9

Table 3 shows the reasons for unintended pregnancy and actions taken by participants. The commonest reason for unintended pregnancy was Contraceptive failure (38.8%) and of this group of participants, Emergency contraceptives failure was the leading (25.7%) cause. The commonest method of induced abortion was the use of drugs (34.3%). Other methods of induced abortion by participants, included MVA (8. %) and D&C (11.3%),

In addition, of the 53.6% participants who had induced abortions, 17.4% (63/362) were successful, while 36.2% (31/362) were unsuccessful in the attempts at the termination. Sixteen (4.4%), participants did nothing about the unplanned pregnancies

Table 3: Reasons for unintended pregnancy, method of contraception, actions taken by respondents and method of termination

		Frequency (n)	Percentage (%)
Reasons for unintended pregnancy (n=210; 58.0%)	No contraceptive use	40	19.2
	Contraceptive failure	170	38.8
Methods of contraceptive that failed (n=170; 47.0%)	Implant	11	3.0
	Daily pills	27	7.5
	IUCD	2	0.6
	Natural method	21	5.8
	Injectables	16	4.4
	Emergency contraceptives	93	25.7
Actions taken concerning the unplanned pregnancy (n=210; 58.0%)	Unsuccessful attempt at termination **	63	17.4
	Successful attempt of the unplanned pregnancy **	131	36.2
	Did nothing	16	4.4
Methods of induced abortions	*Drugs*	124	34.3
	MVA	29	8.0
	D & C	41	11.3

** Total number of induced abortions = 194 (53.6%) participants

Table 4 shows the personnel responsible for the induced abortion, and pattern of post- abortion complications. The majority 27.3% of study participants who carried out induced abortion was by Misoprostol purchased at patent medicine (Chemist) stores, and 16% of respondents with history of induced abortion suffered post -abortion complications, with the commonest complication being abdominal pain. The complications were mostly (27/362), treated in hospitals/clinic

Table 4: Personnel responsible for termination, pattern of post-abortion complications and treatment of the complication.

		Frequency (n)	Percentage (%)
Who performed the abortion (n=194; 53.6%)	Doctors	9	2.5
	Nurse	34	9.4
	Pharmacist	18	5.0
	Self-administered Misoprostol from Chemist stores	99	27.3
	Trad. Birth Attendants	34	9.4
Place where the termination took place (n=194; 53.6%)	*Private Health Facility*	47	12.9
	Chemist	69	19.1
	Trad. Birth Attendants	34	9.4
	Others	44	12.2
Post abortion complication	*Yes*	58	16.0
	No	136	37.6
Type of Complication (n=58; 16.0%)	*Abdominal pain*	32	8.8
	Excessive Bleeding	26	7.2
Treatment of Post abortion complications (n=58; 16.0%)	*Hospital/ clinic*	27	7.5
	Chemist	16	4.4
	Self-medication	15	4.1

Table 5 highlighted the association between the sociodemographic and induced abortion. A comparison between the sociodemographic parameters with induced abortion showed that there was a statistically significant association when comparing the age groups, religion, occupation and number of children with the study outcome ($p < 0.050$). Comparing the age groups, religion, occupation and number of children between those with induced abortion and those without, revealed that more participants in the former group were between 31-40 years (42.8% vs. 32.1%), were Christians (94.8% vs. 96.4%) and traders (51.0% vs. 46.4%).

Table 5: Association between socio-demographic and induced abortion

		Induced abortion N (%)	No abortion N (%)	χ^2	p-value
Age group (years)	*≤20*	10 (5.2)	11 (6.5)	9.686	*0.021
	21-30	93 (47.9)	101 (60.1)		
	31-40	83 (42.8)	55 (32.7)		
	≥41	8 (4.1)	1 (0.6)		
Religion	*Christian*	184 (94.8)	162 (96.4)	8.911	*0.012
	Islam	10 (5.2)	2 (1.2)		
	Others	0 (0.0)	4 (2.4)		
Level of Education	*None*	3 (1.5)	3 (1.8)	0.200	0.978
	Primary	14 (7.2)	12 (7.1)		
	Secondary	100 (51.5)	83 (49.4)		
	Post-secondary	77 (39.7)	70 (41.7)		
Occupation	*Unemployed*	35 (18.0)	22 (13.1)	7.486	0.187
	Unskilled	13 (6.7)	19 (11.3)		
	Artisan	21 (10.8)	14 (8.3)		
	Trader	99 (51.0)	78 (46.4)		
	Farmer	5 (2.6)	7 (4.2)		
	Professional	21 (10.8)	28 (16.7)		
Number of living children	*1*	23 (11.9)	105 (62.5)	102.382	*<0.001
	2	77 (39.7)	32 (19.0)		
	3	53 (27.3)	15 (8.9)		
	4	30 (15.5)	11 (6.5)		
	5	11 (5.7)	5 (3.0)		

Table 6 shows that the number of living children and history of unplanned pregnancies were predictors of induced abortion by married women, P < 0.001 and P < 0.005, respectively.

Table 6: Regression analysis to show the predictors of induced abortion.

Categories		B	S.E.	OR	95% C.I. for OR		p-value
					Lower	Upper	
Age Group	*≤20*			1.000			0.690
	21-30	0.361	0.544	1.435	0.494	4.168	0.507
	31-40	0.123	0.572	1.130	0.369	3.466	0.830
	≥41	-0.501	1.253	0.606	0.052	7.067	0.689
Religion	*Christian*			1.000			0.699
	Islam	-1.105	1.260	0.471	0.032	4.307	0.999
	Others	-1.246	1.733	0.398	0.021	8.974	0.999
Number of living children		-0.729	0.129	0.482	0.375	0.621	***<0.001**
History of contraceptive use		0.351	0.279	1.420	0.821	2.455	0.210
History of unplanned pregnancy		1.503	0.265	4.493	2.674	7.551	***<0.001**

Discussion.

This study examined the prevalence, predictors, and reproductive health burden of induced abortion by married women with unintended pregnancy, as a method of contraception.

There was a very high (58%) rate of unintended pregnancies, and a prevalence rate of 42.3% of induced abortion by married women in the study. There was 30.7% contraceptive uptake by the participants. Contraceptive failure (38.8%) was the main reason for the unplanned pregnancies. The use of drugs was the popular (34.3%) method of termination, while abdominal pains (8.8%) was the leading complication. The number of living children and history of unplanned pregnancies were predictors of induced abortion by participants.

The high rate of unintended pregnancy in this study higher than rates in similar studies in the western part of Nigeria.[9] The rate was also higher than the 41.4%,[10] in a study in Ethiopia. The differences may be related to the heterogeneity in contraceptive awareness and uptake in the various settings. Unplanned pregnancies are frequently associated with induced abortions.[11,12]

Contraceptive failures were the leading cause of unplanned pregnancy in this study. The contraceptive failure rate observed in this was considerably higher than that reported in a survey conducted across 8 Nigerian states,[13] where 16% of women using modern contraceptive methods, mainly daily oral pills, reported unintended pregnancies. In contrast, emergency contraceptive use was the predominant contributor to contraceptive failure in the present study. While, Emergency contraceptive pills may be considered a useful backup method of pregnancy prevention, its use as a primary method of birth control may result in unplanned pregnancies as shown in this study.

The prevalence rate of induced abortion in this study was considerably higher than the rate by Ojo, et al,and Okonofua, et al.[9, 14]. In the study by Okonofua, the participants were made up of both single and married women, while Ojo, et al used the same denominator in this study, used a combination of quantitative and qualitative methods. The differences in prevalence rates may be a reflection of the study designs, settings and social behaviour spanning different timelines.

The patronage of patent medicine dealers in this study for the conduct of pregnancy termination by a high number of participants was an unusual observation. This finding contrasted with the 82% documented by Ojo, et al,[9] in the western part of Nigeria, and 45.6%,[15] in India, in which majority of induced abortions were carried out in private health facilities**.** The widespread distribution of chemist stores in part of Nigeria where this study was conducted and, across the counter sale of Misoprostol for medical termination of pregnancy may have been responsible for this observation, and likely explain the difference between the result of this study and that by Ojo et al.[9] Nigeria, like many other countries in the Sub-Saharan region of Africa have restrictive abortion laws.[3 16] Because of the legal consequences of pregnancy termination in public health facilities in Nigeria and other parts of Sub-Saharan African countries, most women in need of abortion services go about it in clandestine manner, including patronising Chemist stores for drugs.[3] The use of Misoprostol obtained from medicine stores appears to be one of the ways to circumvent the restrictive abortion laws. The complications of abdominal pains and bleeding observed among the participants who had induced abortion is similar to previous studies.[9, 14, 17] Treatment of complications were mostly in private or public health facilities. None of the participants suffered any serious adverse outcome from the induced abortion. While the study did not include the gestational age at which the pregnancies were terminated, the possibilities of early pregnancy in most of the participants could not be excluded.

There was a significant association between the older (≥31years) married women and induced abortion. A previous study,[9] documented that married women who are 40 years and beyond had three-fold likely to terminate their pregnancy, compared to the younger age groups. It could be argued that the need to limit family size, the need to reduce social -economic burden in raising a large family, among others, may be an explanation for induced abortions in the older women, who are also of higher parity. Association between increasing parity and induced abortion in this study was also demonstrated in other studies in Nigeria, Kenya, and in India.[9,18,19,20]

Unplanned pregnancies, especially, among women who are multiparous were predictive of induced abortion in this study. For several women with unintended pregnancies, there may be other undisclosed reasons underpinning their decisions to terminate another pregnancy that was not desired.

Conclusion

This study showed a high prevalence of induced abortion among multiparous married women with unintended pregnancy, in Delta State. However, there was minimal adverse reproductive health outcome among the participants that had induced abortion. The need for more effective education of women during prenatal and post-natal clinic on contraceptive effectiveness and provision is suggested by this study.

Study limitations

This study has some limitations, which included the small sample size; the exclusion of 28 (7.2%) questionnaires may have affected the completeness of the data that was analyzed. Considering the illegal status of abortion in Nigeria, it is impossible to exclude some level of under-disclosure of induced abortion among participants. It is hoped that the confidentiality and the anonymity assurance, would have addressed the fear of participants' prosecution. Another study limitation was the fact that the study took place in two out of the three senatorial zones in Delta State, thus making the generalisation of study findings difficult. These two zones are largely populated by the Urhobos, Itsekiris, and the Ijaw ethnic groups. Married women in the Delta North senatorial zone, inhabited by the Ibo speaking ethnic group, were not included in this study. Further study studies may be required, that is more inclusive, that should include qualitative components that may capture some socio-cultural nuances that could contribute to induced abortion by married in Delta State.

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