

OCCURENCE OF INTRAUTERINE FETAL DEATH, AND ITS ASSOCIATED FACTORS IN WOMEN AGED 15-49YEARS IN ABA, ABIA STATE

BY

OSINACHI, C. N., IWUALA, C. C. & NWUFO, C. R.

Department of Public Health, School of Health Technology, Federal University of Technology, Owerri.

ABSTRACT

This study determined the prevalence of intrauterine fetal death, and its associated factors in women aged 15-49years in Aba, Abia state. Three specific objectives with corresponding research questions and two hypotheses guided the study. Descriptive retrospective survey design was used for the study. A simple random sampling technique was used to draw a samples 385 women aged 15-49 years in Aba, Abia State. A structured questionnaire was used for data collection after being validated and its reliability tested and also hospital records were used as secondary data. The data collected was analysed using Microsoft excel, frequencies, percentage and bar chart; the hypotheses were tested using Adjusted odd ratio and chi-square (X^2) statistics at ≤ 0.05 level of significance. The result revealed that the prevalence of IUD among women was 85.3% per 1000 deliveries in 2013, and in 2014 the prevalence of IUD was 81.9% per 1000 deliveries. In 2015 the prevalence of IUD was 76.8%, per 1000 deliveries, a total reduction of about 10%. In 2016, 79.8% prevalence pre 1000 delivers was recorded. In 2017 the prevalence of IUD was 94.1% per 1000 deliveries, giving a 20% increase of IUD. The prevalence of IUD in 2018 was 92.2% per 1000 deliveries. Fetal growth restriction was identified as the highest fetal factors that lead to IUD 46 (11.9%). Thirty-eight (9.9%) identified placental abruption as fetal factor that lead to IUD. Twenty-five (6.5%) identified placenta previa as fetal factor that lead to IUD. Twenty-four (6.2%) identified chord prolapse as fetal factor that lead to IUD. Thirty-two (8.3%) identified hydraminos pregnancy as fetal factor that lead to IUD while 22 (5.7%) identified other unexplained complications as fetal factor that lead to IUD. The result also showed that the Adjusted Odd Ratio of having IUD is 2 times more when fetal growth restriction is experienced and 1.380 times more when Placenta Abruption is experienced. Based on the findings, the researcher recommended that IUF D should be declared a health problem of major public health concern. Also, Support should be giving to Primary health care centers by providing more facilities and training for health works in other to boost their knowledge on Obstetric care.

INTRODUCTION

The common goal of modern obstetrics is to maximize the quality of maternal, fetal, newborn and infant life in such a manner as to give every individual who is conceived the greatest opportunity for optimal physical, mental, and emotional development. The nature of care a woman receives during pregnancy, labor and delivery greatly impacts on the outcome of her pregnancy, and is reflected in the perinatal and maternal morbidity and mortality rates. Intrauterine fetal death is defined as fetal death at 20 weeks gestation or a minimum 350 grams birth weight. The varieties of definitions make comparisons of stillbirth rates difficult. In the United Kingdom (UK), a stillbirth is defined as the delivery of a baby with no signs of life after 24 weeks of pregnancy (Kavoo, 1998. However, for the purpose of statistics for international comparison, the World Health Organization (WHO) noted that inclusion of the extremely low-birth weight group will disrupts the validity of comparison and is not recommended. Stillbirth is thus defined as the "death of a fetus before the complete expulsion or extraction from its mother at term, weighing at least 1000 g and occurring after 28 completed weeks of gestation or having at least 35cm body length, which is indicated by the fact that after such a separation, the fetus does not show any evidence of life (Ferguson and Myers, 1994).

The development of antenatal care services and intrapartum fetal surveillance has seen remarkable changes in perinatal and maternal mortality rates in developed countries, while in developing countries these rates are still very high. In the absence of adequate facilities, antenatal care may deteriorate to routine abdominal palpations without adequate investigative history. Laboratory work up such as hemoglobin, syphilis and HIV screening, blood grouping and rhesus factor, urine, blood pressure and weight measurements are ignored and health education neglected. These are part of quality antenatal care that promotes good fetal and maternal health. Factors influencing pregnancy outcome start from the preconception period. Maternal general health and nutrition are factors influenced by socio-economic status and other general health facility cares availed to the population.

There are many factors that can affect a successful pregnancy and fetal intrauterine death. In two thirds of IUFDs the causes of intrauterine death are unknown (Korteweg, 2008). The causes of fetal death are classified into three groups including; fetal, placental and maternal causes. The risk of intrauterine fetal death increases with decreasing gestational age (Rosenstein, 2012). Some risk factors of intrauterine fetal death includes; race, smoking, history of intrauterine fetal death, obesity, age. Also studies have found many factors that increase risk for intrauterine fetal death in high-income countries (Flenady, 2011).

Approximately 50% of perinatal deaths are intrauterine deaths of all the fetal deaths in the USA. Over two thirds occur before 32 weeks gestation, 22% occur between 36 and 40 weeks and approximately 10% occur beyond 41 weeks. Studies have been performed to identify any avoidable factors that contribute to antepartum fetal death. Failure of the medical team to respond appropriately to problems detected during pregnancy and labor, such as abnormal fetal growth assessments or intrapartum fetal monitoring results, significant maternal weight loss, or reported reduction in fetal movements constitute the largest group of avoidable factors. Antepartum fetal assessment can have a significant impact on the frequency and causes of antenatal deaths.

Studies have reported that Black and Asian women have a higher risk of intrauterine deaths compared to White women (Smeeton, 2004; Balchin, 2007). Some fetal abnormalities are responsible for 25 to 40 percent of intrauterine fetal deaths and the incidence of major congenital abnormalities which have been reported in intrauterine deaths are highly variable (Silver, 2007). South Asia and sub-Saharan Africa have the highest rates of intrauterine fetal deaths (Reeske, 2011). The incidence of intrauterine deaths in western countries has been reported as 4.7% to 12.0% (Farrant, 2016).

World Health Organization estimates that worldwide 3.3 million intrauterine fetal deaths occur each year, accounting for over half of all perinatal deaths. Reported incidence of stillbirths from Western Countries ranged between 2.0- 8.7/1000 deliveries, while the rates in South Africa and Nigeria were 38.4/1000 and 40.5/1000 respectively. Globally two-thirds to three-quarters of stillbirths may occur during the antenatal period before labor begins, which are often associated with insults that occur in-utero during the antenatal period

In comparison with other countries the rate of intrauterine fetal death in Nigeria is increasing and it is estimated as 2.2% of births per year (Jahanfar, 2005). Given that there is not yet a reliable incidence rate of intrauterine fetal death. This research study will focus on the variables- prevalence of intrauterine fetal death, maternal factors and medical factors associated with intrauterine fetal death among women aged 15 to 49 years.

Statement of the Problem

The goal of maternity care is to achieve a safe delivery of a healthy mother and baby. Intrauterine fetal death is a major source of depression to the mother, her relations and managing obstetrician. Intrauterine fetal death rate is a marker of the adequacy of obstetric care and an important source of medical litigation in Nigeria. However, in developing countries such as Nigeria, perinatal mortality is still very high with figures up to 2 to 4 times as high as those reported in developed countries intrauterine fetal death accounts for between 50 and 88 percent of overall perinatal mortality in the various regions of the world and it is a close reflection of the perinatal mortality rate of the community. intrauterine fetal deaths may occur due to variety of factors including bacterial infection, birth defects especially pulmonary hypoplasia, maternal diabetes, hypertensive diseases in pregnancy, maternal alcohol consumption, cigarette smoking, post term pregnancy, abruption placentae, radiation poison, physical trauma, rhesus disease, umbilical cord accidents and intra uterine growth restriction. Other associated factors are extreme of maternal age, low socio-economic status, poor maternal education, multi-parity or grand multi-parity and previous stillbirth. Intra partum stillbirths are usually the result of fetal distress and or obstructed labor and often reflect poor quality of clinical care during labor and at delivery. Intrauterine fetal death accounts for a major component of perinatal mortality in Nigeria and therefore needs to be attended to in order to prevent the occurrence especially in Aba Abia State where reports from the medical

facilities indicate high level of intrauterine fetal deaths (Esike, Chukwuemeka, Anozie, Eze, Aluka, Twomey, 2017). The re-occurrences of intrauterine fetal deaths in Aba Abia State aroused the interest of the researcher to determine the prevalence of intrauterine fetal deaths and its associated factors. The knowledge of these predisposing factors to these fetal deaths will help in designing preventive measures to reduce its incidence.

Objectives of the Study

The aim of this study is to determine the occurrence of intrauterine fetal death, and its associated factors in women aged 15-49years in Aba, Abia state. The specific objectives include:

1. To determine the occurrence of intrauterine deaths among women aged 15-49years old in Aba Abia State
2. To determine the relationship between fetal factors and intrauterine fetal death among women aged 15-49 years in Aba Abia State
3. To determine the relationship between maternal factors and intrauterine fetal deaths among women aged between 15-49years old in Aba, Abia State.

Research Questions

1. What is the occurrence of intrauterine fetal death among women 15-49 years in Abia State?
2. What is the relationship between fetal factors and intrauterine fetal deaths among women aged 15-49 years in Abia state?
3. What is relationship between maternal factors and intrauterine fetal death among women aged 15-49 years in Abia state?

Research Hypothesis

H₀: There is no significant relationship between fetal factors and intrauterine fetal death among women 15-49 years in Abia State.

H₀: There is no significant relationship between maternal factors and intrauterine fetal death among women 15-49 years in Abia State.

MATERIALS AND METHODS

Cross sectional study design was employed in this study. Cross sectional study design is aimed at determining presence or absence of disease or other health-related variables are in each member of a population at one particular time (Ali, 1996). Cross sectional study was employed in this study because it provided data on the occurrence of the entire population under study, it's also useful in describing the characteristics of women of reproductive age. The area of study for this research was Aba in Abia State Nigeria. This study focused on women aged 15-49years in Aba, Abia State, who experienced intrauterine fetal death. The sample size for this study is 385. The Cochran's sample size formula was used in estimating the sample size for this study. Multi stage sampling method was used for this study. A self-structured questionnaire with the title "Occurrence of Intrauterine Fetal Death Nigeria and Its Associated Factors among Women in Aba, Abia State", containing 33-items and divided into 3 sections was used for data collection. The first section asked question on socio-demographic data of the respondents. The second section asked questions on maternal characteristics while the third section asked questions on fetal characteristics. The instrument was validated for content relevance and appropriateness of language. The questionnaire was administered to twenty women aged 15-49 years with IUFD in Imo State Teaching Hospital outside the sample area of study. This was done to identify ambiguity and likely duration of administering survey instruments. The result was scaled for consistency via Crombach Alpha and the reliability coefficient gave $r = 0.70$. The researcher trained two research assistants who assisted in the data collection process. After data cleansing was done, data was entered into SPSS Statistical Package Version 22. Chi- square test was used to test for statistical significance at 95% confidence interval. Frequency and percentage was used to show the distribution of social demographic. An occurrence Chart was also used to show the trend of intrauterine fetal deaths among women aged 15-49 years old in Aba Abia State from 2013 to 2018.

RESULTS

Socio-demographic Characteristics of women aged 15-49 years old in Aba Abia state

Presented in table 1 below is the demographic characteristic of women aged 15-49 years in Aba Abia state. One Hundred and Three (26.7%) of the women were aged 15-26 years, 135 (36%) were aged 27-38years, while 147(38%) were aged 39-4 years. Information on their marital status showed that 7(1.8%) were single, 361(93.8%) married, 4(1.0%) were widowed while 13(3.4%) were divorced/separated. Information on level of education showed

that 4(1.0%), of the women had no formal education, 14(3.6%) had primary education, 146(37.9%) had secondary education while 221(57.4%) attained tertiary education. Information on their occupation showed that 25(6.5%) of the women were unemployed, 284(73.8%) were self-employed while 76(19.7%) had formal employment. Information on their parity (Number of live birth) showed that 29(7.5%) had 1-2 live birth, 333(86.5%) had 3-5 live birth, while 23(6.0%) had more than 5 live births. Information provided on their place of delivery showed that 263(68.3%) of the women delivered in the hospital, 101(26.2%) delivered at the Health center while 6(1.6%) delivered at the traditional birth attendant, while delivered at home 15(3.9%). Information on their mode of delivery revealed that 314(81.6%) of the women delivered through vaginal delivery while 71(18.4%) of the women delivered through C/section. Information on the outcome of their last pregnancy showed that 11(2.9%) had no previous pregnancy, 26(6.8%) of the women said their pregnancy was aborted, 9(2.3%) said their pregnancy was live preterm baby, 86(22.3%) said their last pregnancy was still born premature, 117(30.4%) was still born term baby while 136(35.3%) was live term baby.

Table 1: Frequency/distribution of Socio-demographic characteristics of Women Aged 15-49 Years In Abia State

S/N	Socio-demographic characteristics	Frequency	Percentage
1	Age (years)		
	15-26	24	6.2
	27-38	246	63.9
	39- 49	115	29.9
2	Marital status		
	Single	7	1.8
	Married	361	93.8
	Widowed	4	1.0
	Divorced/separated	13	3.4
3	Level of education		
	None	4	1.0
	Primary	14	3.6
	Secondary	146	37.9
	Tertiary	221	57.4
4	Occupation		
	Unemployed	25	6.5
	Self employed	284	73.8
	formal employment	76	19.7
5	Parity		
	1-2	29	7.5
	3-5	333	86.5

	more than 5	23	6.0
6	Place of delivery		
	Hospital	263	68.3
	Health Centre	101	26.2
	Traditional Birth Attendant	6	1.6
	Others	15	3.9
7	Mode of delivery		
	Vaginal delivery	314	81.6
	c/section	71	18.4
8	Outcome of last pregnancy		
	no previous pregnancy	11	2.9
	Abortion	26	6.8
	live preterm baby	9	2.3
	still born premature	86	22.3
	still born term baby	117	30.4
	live term baby	136	35.3

Occurrence of intrauterine deaths among women aged 15-49years old in Aba Abia State presented in Chart 1 below is analysis of data generated from six hospitals on occurrence of intrauterine death (IUD) among women aged 15-49years in Aba Abia state from 2013 to 2018. The result showed that the occurrence of IUD among women was 85.3% per 1000 deliveries in 2013, and in 2014 the occurrence of IUD was 81.9% per 1000 deliveries. In 2015 the occurrence of IUD was 76.8%, per 1000 deliveries, a total reduction of about 10%. In 2016, 79.8% occurrence per 1000 deliveries was recorded. In 2017 the occurrence of IUD was 94.1% per 1000 deliveries, giving a 20% increase of IUD. The occurrence of IUD in 2018 was 92.2% per 1000 deliveries.

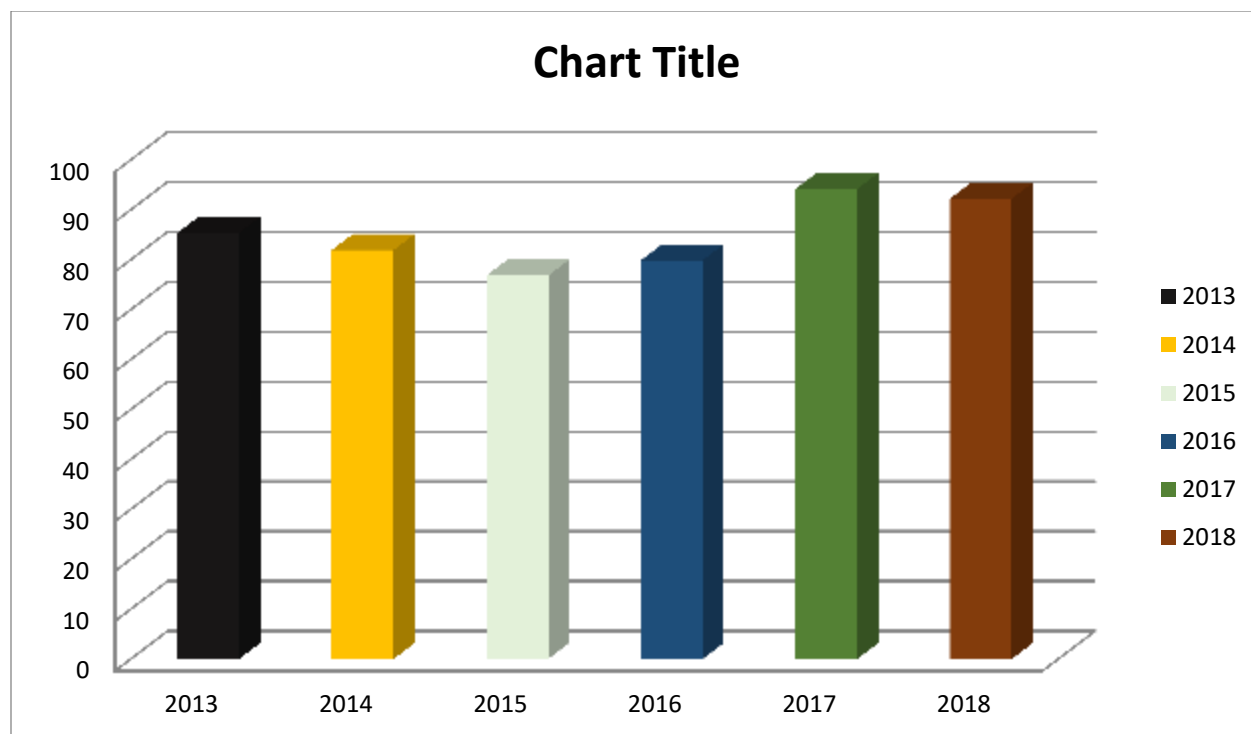


Fig 1: Occurrence of intrauterine death among women aged 15-49years old in Aba Abia state from 2013 to 2018.

Fetal Factors Associated With Intrauterine Fetal Deaths Among Women Aged 15-49 Years In Abia State

Presented in table 2 below is the fetal factors associated with intrauterine fetal death among women aged 15-49 years. Forty-six (11.9%) of the women identified fetal growth restriction as a fetal factors that lead to IUFD. Thirty eight (9.9%) identified placental abruption as fetal factor that lead to IUFD. Twenty five (6.5%) identified placenta previa as fetal factor that lead to IUFD. Twenty four (6.2%) identified chord prolapse as fetal factor that lead to IUFD. Thirty two (8.3%) identified hydraminos pregnancy as fetal factor that lead to IUFD while 22 (5.7%) identified other unexplained complications as fetal factor that lead to IUFD.

Table 2: Frequency Of Fetal Factors Associated With Intrauterine Fetal Deaths Among Women Aged 15-49 Years In Abia State.

S/N	Fetal Factors	Percentage	Frequency
1	Fetal growth restriction	46	11.9
2	Placental Abruption	38	9.9
3	Placenta Previa	25	6.5
4	Chord Prolapse	24	6.2
5	Hydraminos Pregnancy	32	8.3
6	Unexplained complications	22	5.7

Maternal Factors Associated With Intrauterine Fetal Deaths Among Women Aged 15-49 Years In Abia State

Presented in table 3 below is the maternal factors associated with intrauterine fetal death among women aged 15-49 years. Thirty one (8.1%) of the women identified history of vaginal bleeding as a maternal factors that lead to IUFD. Twelve (3.1%) identified history of anaemia as maternal factor that lead to IUFD. Forty five (11.7%) identified Preeclampsia/eclampsia as maternal factor that lead to IUFD. Eight (2.1%) identified gestational diabetes mellitus as maternal factor that lead to IUFD. Thirty six (9.4%) identified ruptured uterus as maternal factor that lead to IUFD, 32 (8.3%) identified Hydraminos pregnancy as maternal factor that lead to IUFD, while 36(9.4%) identified antepartum haemorrhage as a maternal factor that lead to IUFD.

Table 3: Frequency of Maternal Factors Associated With Intrauterine Fetal Deaths Among Women Aged 15-49 Years In Abia State

S/N	Fetal Factors	Percentage	Frequency
1	History of vaginal bleeding	31	8.1
2	History of anaemia	12	3.1
3	Preeclampsia/eclampsia	45	11.7
4	Gestational Diabetes Mellitus	8	2.1
6	Ruptured uterus	36	9.4
7	Hydraminos pregnancy	32	8.3
8	Antepartum Haemorrhage	36	9.4

Relationship between Fetal Factors and Intrauterine Fetal Death among Women 15-49 Years in Abia State

Presented in table 4 below is the relationship between the identified fetal factors and intrauterine fetal death. Out of 46(100%) of the women who experienced fetal growth restriction 39(76.1%) had Intrauterine fetal death while 11(23.9%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 2 times more when fetal growth restriction is experienced, this also showed an association with IUFD ($X^2 = 4.506$, AOD = 2.132; 95% (1.047- 4.3422)). Out of 38(100%) of the women who experienced Placenta Abruption 26(28.4%) had Intrauterine fetal death while 12(31.6%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.380 times more when Placenta Abruption is experienced, although this showed no association with IUFD ($X^2 = 0.777$, AOD = 1.380; 95% (0.673-2.828)). Out of 24(100%) of the women who experienced Cord Prolapse 16(66.7%) had Intrauterine fetal death while 8(33.3%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.252 times more when Cord Prolapse is experienced, however, this showed an association with IUFD ($X^2 = 0.255$, AOD = 1.252; 95% (0.522-3.003)). Out of 25(100%) of the women who experienced Placenta previa 16(64.0%) had Intrauterine fetal death while 9(36.0%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.105 times more when Placenta previa is experienced, although this showed no association with Intrauterine fetal death (IUFD) ($X^2 = 0.054$, AOD = 1.105; 95% (0.475 – 2.570)

Table 4: Relationship Between Fetal Factors And Intrauterine Fetal Death Among Women 15-49 Years In Abia State

S/N	Fetal Factors	Intrauterine Fetal Death		Total	X^2 (P-value)
		Yes	No		
1	Fetal growth restriction				
	Yes	35(76.1%)	11(23.9%)	46(100%)	0.034

2	Placenta Abruption				
	Yes	26(28.4%)	12(31.6%)	38(100%)	0.378
3	Cord Prolapse				
	Yes	16(66.7%)	8(33.3%)	24(100%)	0.0514
4	Placenta previa				
	Yes	16(64.0%)	9(36.0%)	25(100%)	0.816
5	Unexplained complications				
	Yes	12(54.5%)	10(45.5%)	22(100%)	0.470

Relationship Between Maternal Factors And Intrauterine Fetal Death Among Women 15-49 Years In Abia State

Presented in table 5 below is the relationship between the identified maternal factors and intrauterine fetal death (IUFD). Out of 31(100%) of the women who had history of vaginal bleeding 22(71.0%) had Intrauterine fetal death while 9(29.0) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.562 times more when there is history of vaginal bleeding, this also showed no association with IUFD ($X^2=0.325$, AOD=1.562; 95% (0.500 -1.464).). Out of 12(100%) of the women who had history of anaemia 8(66.7%) had Intrauterine fetal death while 4(33.3%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.243 times more when there is history of anaemia, this also showed no association with IUFD ($X^2 = 0.123$), AOD = 1.243; 95%(0.368 - 4.204). Out of 45(100%) of the women who experienced Preeclampsia/eclampsia 25(55.6%) had Intrauterine fetal death while 20(44.4%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 2.000 times more when there Preeclampsia/eclampsia, this also showed an association with IUFD ($X^2=.847$, (AOD = 2.000; 95% (0.398- 1.396). Out of 8(100%) of the women who experienced gestational diabetes mellitus 6(75.0%) had Intrauterine fetal death while 2(25.0%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.875 times more when there gestational diabetes mellitus, this also showed no association with IUFD ($X^2=0.601$, (AOD=1.875; 95%(0.373- 9.415).

Out of 40(100%) of the women who experienced Prolonged labour 32(80.0%) had Intrauterine fetal death while 8(20.0%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 2.699 times more when there Prolonged labour, this also showed an association with IUFD ($X^2 = 6.252$, (AOD = 2.699; 95%(1.208-60.31). Out of 32(100%) of the women who experienced Hydraminos pregnancy 14(43.8%) had Intrauterine fetal death while 18(56.3%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 44% lower when there Hydraminos pregnancy, this also showed an association with IUFD ($X^2 = 4.827$, (AOD = 0.448; 95%(0.216 – 0.931). Out of 36(100%) of the women who experienced Antepartum Haemorrhage 23(63.9%) had Intrauterine fetal death while 13(36.1%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.103 times more when there Antepartum Haemorrhage, this also showed no association with IUFD ($X^2 = 0.72$, (AOD = 1.103; 95%(0.540-2.259). Out of 36(100%) of the women who experienced Ruptured uterus 23(63.9%) had Intrauterine fetal death while 13(36.1%) had no IUFD, the Adjusted Odd Ratio of having IUFD is 1.103 times more when there Ruptured uterus , this also showed no association with IUFD ($X^2 = 0.72$, (AOD = 1.103; 95%(0.540 – 2.259).

Table 5: Relationship Between Maternal Factors And Intrauterine Fetal Death Among Women 15-49 Years In Abia State

S/N	Maternal Factors	Intrauterine Fetal Death		Total	X^2 (P-value)
		Yes	No		
1	History of vaginal bleeding				
	Yes	22(71.0%)	9(29.0)	31(100%)	0.568

2	History of anaemia				
	Yes	8(66.7%)	4(33.3%)	12(100%)	0.725
3	Preeclampsia/eclampsia				
	Yes	25(55.6%)	20(44.4%)	45(100%)	0.223
4	Gestational Diabetes Mellitus				
	Yes	6(75.0%)	2(25.0%)	8(100%)	0.438
6	Prolonged labour				
	Yes	32(80.0%)	8(20.0%)	40(100%)	0.012
7	Hydraminos pregnancy				
	Yes	14(43.8%)	18(56.3%)	32(100%)	0.028
8	Antepartum Haemorrhage				
	Yes	23(63.9%)	13(36.1%)	36(100%)	0.788
9	Ruptured uterus				
	Yes	23(63.9%)	13(36.1%)	36(100%)	0.788

DISCUSSION

Occurrence of intrauterine deaths among women aged 15-49years old in Aba Abia State.

Based on the data analyzed on the occurrence of intrauterine death among women aged 15-49 years in Aba Abia State, increase in occurrence of intrauterine death was observed from, 85.3% per 1000 deliveries in 2013 to 92.2% per 1000 deliveries in 2018. This finding supported the report of Center for Disease Control and Prevention that fetal death occurs in roughly six of every 1,000 births. This however, calls for urgent action and Intrauterine fetal death should be declared a health problem of major Public Health concern.

Fetal factors and intrauterine fetal death among women 15-49 years in Abia State.

Findings from this study revealed that some fetal factors showed higher risk for intrauterine fetal death. In this study women aged 15-49 years in Aba Abia State was 2 times more likely to experience IUFD when fetal growth restriction occurs, this also showed an association with IUFD. This findings is in correspondence with Fretts, Boyd, Usher and Usher (1992) IN Rosenstein, Cheng, Snowden, Nicholson, Caughey (2012) which stated that IUGR existed among 52% of all unexplained stillbirths compared to 13% of singleton live born controls (OR 7.0; 95% CI 3.3-15.1), and they also found the distribution of risk factors in the group with IUGR to be different from the group without IUGR. Placenta Abruption also showed high risk for IUFD as women in Aba Abia State was 1times and more likely to experience IUFD when placenta abruption occurs. This fetal factor is also in correspondence with Boisramé et al (2014) that placental abruption was a contributory risk factor for IUFD.

Maternal Factors And Intrauterine Fetal Death Among Women 15-49 Years In Abia State

Findings from this study indicated that Prolonged labour is a high risk factor for intrauterine fetal death as women were 2.699 time likely to experience IUFD when prolonged labour occurs. However, this may have occurred as a result of geographical variation and delays mainly experienced in some health care facilities in low and middle income countries, because findings from other studies either excluded it as a major risk factor while some studies showed it was not a strong risk factor for IUFD. Findings from this study revealed that Preeclampsia/eclampsia is also strong risk factor for IUFD, although this showed no association with IUFD, the risk is 2 times more when preeclampsia/eclampsia is experienced. These findings support the report of Warland, McCutcheon, and Baghurst

(2008), which posited that preeclampsia complicates approximately 3% of all pregnancies and can induce serious complications for both mother and fetus. The consequences for mother and child depend on gestational age at onset, severity, and timing of diagnosis. Early onset (before gestational week 32) occurs among approximately 10% of the cases and is usually a sign of a more severe disease, with greater risk of complications (Preeclampsia is associated with both IUGR and placental abruption).

CONCLUSION

Intrauterine fetal death accounts for a major component of perinatal mortality in Nigeria and therefore needs to be attended to in order to prevent the occurrence especially in Aba Abia State is of significant necessity. This study however, has revealed the occurrence of IUFD in Aba Abia State. It has also identified the risk factors with the strongest possible strength to cause IUFD when other factors are adjusted.

RECOMMENDATIONS

Based on the findings from this study the following recommendations are made.

- 1) Due to the increased occurrence of IUFD observed among women aged 15-49 years in Aba Abia State, IUFD should be declared a health problem of major public health concern.
- 2) Further study, should be conducted in this same population using more rigorous methodology to determine the risk of IUFD among women in Aba Abia State.
- 3) Support should be giving to Primary health care centers by providing more facilities and training for health works in other to boost their knowledge on Obstetric care.
- 4) There is a need for awareness on the, causes and prevention IUFD among Women aged 15-49 years in Aba Abia State.
- 5) Since these event occur more frequently measures should be put in-place to prevent the death of the mother.

REFERENCES

- Ananth, C.V., Liu, S., Joseph, K.S., Kramer, M.S. (2009). Fetal and Infant Health Study Group of the Canadian Perinatal Surveillance System. A comparison of Fetal and Infant Mortality in the United States and Canada. *International Journal of Epidemiology* 38:480-9.
- Ahlsten, G., Ewald, U., Tuvemo, T., (1986). Maternal Smoking Reduces Prostacyclin Formation In Human Umbilical Arteries. A Study on Strictly Selected Pregnancies. *Acta Obstet Gynecol Scand*; 65:645-9.
- Balchin I., Whittaker J., Patel R., Lamont R., and Steer P., Racial (2007). Variation in The Association Between Gestational Age and Perinatal Mortality: Prospective Study. *British Medical Journal*, 334(7598): 833.
- Boisramé, N. Sananès^c, G., .Fritz, E., Boudie, G., Aissi, R., Favre, B., Langer. (2014). Placental Abruption: Risk Factors, Management and Maternal–Fetal Prognosis. *Cohort Study Over 10 Years*
- Cnattingius, S., Forman, M.R., Berendes, H.W., Isotalo, L. (1992). Delayed Child bearing and Risk of Adverse Perinatal Outcome. A Population-Based Study. *Journal of American Medical Association*; 268: 886-90.
- Cousens, S., Blencowe, H., Stanton, C., Chou, D., Ahmed, S., Steinhardt, L., Creanga, A.A.,Lawn, J.E. (2011). National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. *Lancet*; 377: 1319-30.
- Copper, R.L., Goldenberg, R.L., Dubard, M.B., Davis, R.O., (1994). Risk Factors for Fetal Death in White, Black, and Hispanic Women. Collaborative Group on Preterm Birth Prevention. *Obstetrics Gynecology* 84:490-5.
- Cunningham, F., Williams, J., Williams, (2010) *Obstetrics, 1st Edition, New York, Mcgraw-Hill Medical*,
- Esike COU, Chukwuemeka UI, Anozie OB, Eze JN, Aluka OC, Twomey DE. Eclampsia in rural Nigeria: The unmitigating catastrophe. *Ann Afr Med*. 2017 Oct-Dec; 16(4):175-180. doi: 10.4103/aam.aam_46_16. PMID: 29063901; PMCID: PMC5676407.

- Falola, Toyin, Heaton, Matthew, M. (2008). *A History of Nigeria* Cambridge, UK: Cambridge University Press. ISBN 978-0-521-68157-5
- Farrant, B., Stanley, F., Hardelid, P., Shepherd, C. (2016). Stillbirth and Neonatal Death Rates Across Time: the Influence of Pregnancy Terminations and Birth Defects in a Western Australian Population-Based Cohort Study, *BMC Pregnancy Childbirth*, 16 (1),
- Fauveau, V. (2007). New indicator of quality of emergency obstetric and newborn care. *Lancet*; 370: 1310.
- Ferguson, R., Myers, S. (1994). Population Study of the Risk of Fetal Death and Its Relationship to Birth weight, Gestational Age, and Race, *American Journal of Perinatology*, 11 (04):267-272.
- Flenady, V., Koopmans, L., Middleton, P., Froen, J., Smith, G., Gibbons, K., Coory, M.,... Gordon A. (2011). Major Risk Factors for Stillbirth in High-Income Countries: a Systematic Review and Meta-analysis, *The Lancet*, 377 (9774):1331-1340.
- Francisca S. Chuwa, F.S., Mwanamsangu, A.H., Brown, B.G., Msuya, S.E., Senkoro, E.E., Mnali, O.P.... Mahande M.J. (2017). *Maternal and fetal risk factors for stillbirth in Northern Tanzania: A registry-Based Retrospective Cohort Study*
- Fretts, R.C. (2005). Etiology and prevention of stillbirth. *American Journal of Obstetric Gynecology*; 193: 1923-35.
- Fretts, R.C., Usher, R.H. (1997). Causes of fetal death in women of advanced maternal age. *Obstetric Gynecology*; 89: 40-5.
- Froen, J.F., Gordijn, S.J., Abdel-Aleem, H., Bergsjø, P., Betran, A., Duke, C.W., Fauveau, V, F..... Shankar, A. (2009). Making Stillbirths Count, Making Numbers Talk - Issues in Data Collection for Stillbirths. *BMC Pregnancy Childbirth*; 9: 58
- Goldenberg, R.L., Thompson, C. (2003). The infectious origins of stillbirth. *American Journal of Obstetric Gynecology*; 189: 861-73.
- Herschel, M., Hsieh, H.L., Mittendorf, R., Khoshnood, B., Covert, R.F., Lee, K.S. (1995). Fetal Death in a Population of Black Women. *American Journal of Preventive Medicine*; 11:185-9.
- Hoiberg, Dale, H., (2010). "Aba". *Encyclopædia Britannica. I: A-Ak – Bayes. Chicago, Illinois: Encyclopædia Britannica, Inc.*
- Huang, D.Y. Usher, R.H., Kramer, M.S., Yang, H., Morin, L., Fretts, R.C. (2000). Determinants of Unexplained Antepartum Fetal Deaths. *Obstetric Gynecology*; 95:215-21.
- Izugbara, C.O., Umoh, J.O. (2004.) Indigenous Waste Management Practices among the Ngwa of Southeastern Nigeria: Some Lessons and Policy implications. *The Environmentalist*. 24: 87-92.
- Jahanfar, S., Ghiyasi, P., Haghani, H. (2015) Risk Factor Related Intrauterine Fetal Death in Iran, *Shiraz Medical Journal*, 6 (3): 1-14.
- Jordan, Mary. (2007). "In Nigeria, the New Face of Global Mormonism". *Seattle Times. Archived.*
- Korteweg, F., Gordijn, S., Timmer, A., Holm, J., Ravise, J., Erwich, J. (2008) A Placental Cause of Intra-uterine Fetal Death Depends on the Perinatal Mortality Classification System Used, *Placenta*, 29 (1): 71-80.

- Lawn, J.E., Blencowe, H., Pattinson, R., Cousens, S., Kumar, R., Ibiebele, I., Gardosi, J., Stanton, C. (2011). Lancet's Stillbirths Series Steering Committee. Stillbirths: Where? When? Why? How to Make the Data Count? *Lancet*; 377: 1448-63.
- Lin, S., Leonard, D., Co, M., Mukhopadhyay, D., Giri, B., Perger, L., Beeram, M., Kuehl, T., Uddin M. (2015) Preeclampsia Has an Adverse Impact on Maternal and Fetal Health, *Journal of Translational Research*, 165 (4) : 449-463.
- Lemberg, David, S., Courtlandt, Canby, (1984). Encyclopedia of Historical Places. Facts on File Library of World History. . *New York, NY: Facts on File..*
- Lutiger, B., Graham, K., Einarson, T.R., Koren, G. (1991). Relationship between Gestational Cocaine Use and Pregnancy Outcome: *a Meta-Analysis. Teratology*; 44:405-14.
- Lyall, F. (2002).The Human Placental Bed Revisited. *Placenta*; 23:555-62.
- Maignien, C., Nguyen, A., Dussaux, C., Cynober, E., Gonzales, M., Carbonne, B. (2014).Outcome of Pregnancy Following Second- Or Third-Trimester Intrauterine Fetal Death, *International Journal of Gynecology & Obstetrics*,127 (3):, 275-278.
- Munro, David. (1995)."Aba". The Oxford Dictionary of the World. Oxford, UK: *Oxford University Press*.
- Nanbakhsh F., Broomand Sarkhabi, F., and Ahmadi Afshar, G, (2016). A Survey on Intrauterine Fetal Death and its Affecting Factors in Kowsar Hospital, Urmia, Iran, *The Urmia Medical Journal*, 8 (12): 498-503.
- Nwanju, B.N. (1991). Government of Abia State: Decision on the Newly Created Local Government Areas. (*Letter to the Sole Administrator of Abia LGA*).
- Olivennes, F., Rufat, P., Andre, B., Pourade, A., Quiros, M.C, Frydman, R. (1993). The increased risk of complication observed in singleton pregnancies resulting from in-vitro fertilization (IVF) does not seem to be related to the IVF method itself. *Human Reproduction*; 8:1297-300
- Opia, Eric, Agume, (1972).Why Biafra? Aburi, *Prelude to the Biafran Tragedy. Leswing Press*.
- Oriji, John, N. (2011). Political Organization in Nigeria since the Late Stone Age: A History of the Igbo People. *New York, NY: Palgrave Macmillan*.
- Oyelese, Y., Ananth, C.V. (2006). Placental abruption. *Obstetric Gynecology*; 108: 1005 16.
- Parsons, L., Duley, L., Alberman, E. (1990). Socio-Economic and Ethnic Factors in Stillbirth and Neonatal Mortality in the NE Thames Regional Health Authority *British Journal of Obstetric Gynecology*: 97: 237-44.
- Petersson, K., Bremme, K., Bottinga, R., Hofsjö, A., Hulthen-Varli, I., Kublickas, M., Norman, M., Wolff, K. (2002). Diagnostic Evaluation of Intrauterine Fetal Deaths in Stockholm. *Acta Obstetric Gynecology*; 81:284-92.
- Pilliod, R., Cheng, Y., Snowden, J., Doss, A., Caughey, A, (2012). The Risk of Intrauterine Fetal Death in the Small-For Gestational-Age Fetus, *American Journal of Obstetrics and Gynecology*, 207 (4): 318.e1-318.e6.
- Ravelli, A.C, Tromp, M., Eskes, M., Droog, J.C., van der Post, J.A, Jager, K.J., Mol, B.W., Reitsma, J.B. (2011). Ethnic Differences in Stillbirth and Early Neonatal Mortality in the Netherlands. *Journal Epidemiology of Community Health*; 65:696-701.

- Reddy, U.M., Ko, C.W., Willinger, M. (2006). Maternal age and the risk of stillbirth throughout pregnancy in the United States. *American Journal of Obstetric Gynecology* 195:764-70.
- Reeske, A., Kutschmann, M., Razum, O., Spallek, J. (2011). *Stillbirth Differences According To Regions of Origin: an Analysis of the German Perinatal Database, BMC Pregnancy Childbirth*, 11 (1),
- Resnik, R. (2002). Intrauterine Growth Restriction. *Obstetric Gynecology*; 99: 490-6.
- Rosenstein, M., Cheng, Y., Snowden, J., Nicholson, J., Caughey, A. (2012) Risk of Stillbirth and Infant Death Stratified by Gestational Age, *Obstetrics & Gynecology*, 120 (1):76-82.
- Silver, R.M. (2007). Fetal Death. *Obstetric Gynecology*; 109:153-67.
- Silver, R., Varner, M., Reddy, U., Goldenberg, R., Pinar, H., Conway, D., Bukowski, R., ..., Carpenter, M, (2007). Work-up of Stillbirth: A Review of the Evidence, *American Journal of Obstetrics and Gynecology*, 196 (5): 433-444.
- Smeeton, N., Rona, R., Dobson, P., Cochrane, R., Wolfe, C, (2004). Assessing the Determinants of Stillbirths and Early Neonatal Deaths Using Routinely Collected Data in an Inner City Area, *BMC Medicine*, 2 (1):
- Smith, G.C. (2006). Predicting Antepartum Stillbirth. *Curr. Opin. Obstetric Gynecology*; 18: 625-30.
- Stephansson, O., Dickman, P.W, Johansson, A., Cnattingius, S. (2001). Maternal weight, pregnancy weight gain, and the risk of antepartum stillbirth. *American Journal of Obstetric Gynecology*; 184:463-9.
- Surkan, P.J., Stephansson, O., Dickman, P.W., Cnattingius, S. (2004). Previous Preterm and Small-For-Gestational-Age Births and the Subsequent Risk of Stillbirth. *England Journal of Medicine*; 350:777-85.
- Warland, J., McCutcheon, H., Baghurst, P. (2008). Maternal Blood Pressure in Pregnancy and Stillbirth: A Case-Control Study of Third-Trimester Stillbirth. *American Journal of Perinatology*; 25:311-7.
- West, C.R., Adi, Y., Pharoah, P.O. (1999). Fetal and Infant Death in Mono- and Dizygotic Twins in England and Wales 1982-91. *Arch Dis Child Fetal Neonatal*; 80:F217 F220.
- Woods, R. (2008). Long-term Trends in Fetal Mortality: Implications for Developing Countries. *Bull World Health Organization*; 86: 460-6.
- World Health Organization Technical services. (2000). Obesity: Preventing and Managing the Global Epidemic. *Report of a World Health Organization Consultation. Geneva, Switzerland.*
- Yudkin, P.L., Wood, L., Redman, C.W. (1997). Risk of Unexplained Stillbirth at Different Gestational Ages. *Lancet*; 1:1192-4.
- Zarei, R., Athary, F., Aghae, N, (2009) Assessing of The Frequency of Interauterine Fetal Death and Related Factors in Ahvaz Imam Khomeini Hospital, Jundishapour *Scientific Medical Journal*, 8 (4):438-448.