

Determinants of substance abuse among pregnant women attending ANC in a tertiary hospital in Jos Plateau State Nigeria

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Abstract

Background: Substance abuse during pregnancy is more prevalent than commonly realized and the obstetric and fetal complications associated with maternal substance abuse include placental praevia, abruptio placentae, premature rupture of membranes, spontaneous abortion, intrauterine growth retardation, fetal alcohol syndrome (FAS), premature delivery, birth defect (congenital anomalies) and neonatal and long term developmental defect. The study was aimed at determining the rate and the socio-demographic determinants of substance abuse among the pregnant women attending ANC in a tertiary health centre in Jos, Plateau State, Nigeria. **Methodology:** it was a facility based cross sectional study conducted among pregnant women attending ANC in a tertiary teaching hospital in Jos, Nigeria, an estimated sample size of 130 was calculated using the formula $N = Z^2Pq / d^2$, data was collected using an interviewer administered questionnaire after obtaining consent and assuring them of confidentiality. The data was analysed using Epi Info version 3.5.1 statistical software. **Results:** the rate of substance abuse among the pregnant women in this study was 10.8%, alcohol abuse was the greatest (5.4%) followed by sedatives (3.9%) and cigarette (1.5%). Marital status, educational level and employment status were found to be significantly associated with substance abuse among these pregnant women. Miscarriage and pre-term delivery was found to be more among women who abuse substances on pregnancy compared to those who did not ($p=0.008$ and $p=0.047$ respectively). **Conclusion:** The prevalence of substance abuse among the pregnant women in this study was found to be as high as 10.8% and alcohol was the most abused substance (5.4%) among them. This study also revealed that single or divorced pregnant women abused substances more and a woman from a polygamous or single parents' background was more likely to be an abuser. Lower level of education (none or primary) and unemployment predisposed pregnant women to substance abuse.

Keywords

Substance, abuse, pregnant women, Nigeria

1. Introduction

The incidence of substance abuse among women of reproductive age has continued to increase, thus contributing to the growing problem of substance abuse during pregnancy. The highest rate of alcohol and drug use in North America is among women in their child bearing age, with 6 million women experiencing alcohol problems, and more than 5 million currently using illicit substances (Coleman FS 1988). Substance abuse during pregnancy is

more prevalent than commonly realized, with up to 25% of gravid women using illicit drugs. The average pregnant woman will take four or five drugs during her pregnancy, with 65% using nonprescription substances, including illicit drugs (Glantz JC and Wood JR 1991). The four general categories of substances abused by pregnant women are central nervous system depressants, including alcohol, sedatives, anxiolytics, and hypnotics; stimulants including cocaine and amphetamines; opiates; and hallucinogens / psychotomimetic, including lysergic acid diethylamide

(LSD) and phencyclidine (PCP), these substances are associated with both abuse and dependence disorders (Clark GD 1992). Alcohol use in pregnancy is a major public health problem and the focus of wide spread media attention. Despite being clearly established as a teratogen since the 19th century, alcohol is used by approximately 15% of pregnant women; with rates as high as 20% reported in recent decades (Rockville MS 1995). Obstetric and fetal complications associated with maternal substance abuse include placental praevia, abruptio placentae, premature rupture of membranes, spontaneous abortion, intrauterine growth retardation, fetal alcohol syndrome (FAS), premature delivery, birth defect (congenital anomalies) and neonatal and long term developmental defect (Feng T 1993).

This study set out to determine the awareness of the danger of substance abuse in pregnancy, the rate of substance abuse among pregnant women and the socio-demographic determinants of substance abuse among the pregnant women attending ANC in a tertiary health centre in Jos, Plateau State Nigeria

2. Methodology

2.1. Study Area

The study was conducted in the Antenatal Clinic of the Jos University Teaching Hospital (JUTH) which is located in Jos, the capital city of Plateau State North, Central Nigeria. The hospital is a 525 bed facility that provides tertiary care to the population of Plateau, and neighboring states of Nasarawa, Benue, Kaduna, Gombe, Bauchi, Adamawa, and Taraba State.

2.2. Study Population

The study population comprised of all pregnant women who presented in the clinic for ANC during the period of the study and consented for the study.

2.3. Study Design

It was a facility based cross sectional studies

2.4. Sample Size Determination

A sample size of 130 was arrived at using a formula; $N = \frac{Z^2 Pq}{d^2}$ and a prevalence of substance abuse of 9.1% from study carried out at Akwa Ibom state, Nigeria and adding a 10% non-response rate.

2.5. Sampling Technique

The ANC clinic of the Jos University Teaching Hospital was purposively selected but the study subjects which were the pregnant women attending ANC were selected through a systematic sampling technique using a sampling frame of 1600 based on the number of average monthly number of pregnant women that come to the clinic and an interval of 12 after dividing the sampling frame by the estimated

sample size of 130 to arrive at the sampling interval.

2.6. Data Collection and Analysis

Data was collected using an interviewer administered questionnaire and was analysed using Epi Info version 3.5.1 statistical software, chi-square was used to establish any statistically significant relationship between socio-demographic characteristics and substance abuse and the results were presented in tables.

Ethical approval was gotten from JUTH and an informed verbal consent was gotten from the pregnant women before the commencement of the studies

3. Results

3.1. Socio-Demographic Characteristics

The pregnant women in this study were within the ages of 16-45yrs and the average age was 29yrs but majority were within the age group of 16-30yrs

Only a few of the pregnant women were either single or divorced while the others (94.6%) were married

Most of the pregnant women 112(86.2%) had either secondary or tertiary education and 70(53.8%) of the women were employed

3.2. Substance Abuse among the Pregnant Women

One hundred and two (78.5%) of the pregnant women said they were aware of the effect of substance abuse on pregnancy and their source of information was mainly hospital (63.7%) followed by media (19.6%) and friends (16.7%)

Table 1. Awareness of Effect of Substance Abuse on Pregnancy

| | Frequency | Percent |
|---|-----------|---------|
| Awareness of the effect of substance abuse on pregnancy | | |
| Yes | 102 | 78.5 |
| No | 28 | 21.5 |
| Source of information | | |
| Hospital | 65 | 63.7 |
| Media | 20 | 19.6 |
| Friends | 17 | 16.7 |
| Total | 102 | 100 |
| Abuse substance | | |
| Yes | 14 | 10.8 |
| No | 116 | 89.2 |
| Type of substance abused | | |
| Alcohol | 7 | 5.4 |
| Cigarette | 2 | 1.5 |
| Sedatives | 5 | 3.9 |
| None | 116 | 89.2 |
| Total | 14 | 100 |
| Reasons for taking substance | | |
| Mood changing | 2 | 14.2 |
| Pain relief/sleep | 5 | 35.8 |
| Influence | 7 | 50 |

The prevalence of substance abuse among the pregnant women was 14(10.8%) and the substances were alcohol

7(5.4%), cigarette 2(1.5%) and sedatives 5(3.9%). The reasons given by the women for taking the substances were; for mood changing (14.2%), pain relief/ induce sleep (35.8%) while 50% said it was just due to influence of friends (Table 1)

3.3. Socio-Demographic Determinants of Substance Abuse among the Pregnant Women

No statistically significant relationship was found between the age of the pregnant women and substance

abuse but most of those who abused substances among the pregnant women were within the ages of 16-30yrs.

Marital status had a statistical significant relationship ($p < 0.001$) with substance abuse, most of those taking the substances were those who were single/divorced

Those with none/primary level of education abused substances more compared to women with secondary/tertiary education ($p < 0.001$)

Employment played a significant role with substance abuse among the women ($p < 0.001$), substance abuse was more among the unemployed than the employed (Table 2)

Table 2. Relationship between socio-demographic characteristics and substance abuse

| | Abuse substances | | | X ² | df | p-value |
|--------------------------|------------------|------------|-----------|----------------|----|---------|
| | Yes | No | Total | | | |
| Age group(yrs) | | | | | | |
| 16-30 | 12(12.8%) | 82(87.2%) | 94(100%) | 1.408 | 1 | 0.235 |
| 31-45 | 2(5.6%) | 34(94.4%) | 36(100%) | | | |
| Type of family born into | | | | | | |
| Monogamous | 5(6.1%) | 77(93.9%) | 82(100%) | 5.044 | 1 | 0.025 |
| Polygamous/single | 9(18.8%) | 39(81.2%) | 48(100%) | | | |
| Marital status | | | | | | |
| Married | 9(7.3%) | 114(92.7%) | 123(100%) | 22.050 | 1 | <0.001 |
| Single/divorce | 5(71.4%) | 2(28.6%) | 7(100%) | | | |
| Education status | | | | | | |
| None/primary | 7(38.9%) | 11(61.1%) | 18(100%) | 17.192 | 1 | <0.001 |
| Secondary/Tertiary | 7(6.2%) | 105(93.8%) | 112(100%) | | | |
| Employment | | | | | | |
| Employed | 1(1.4%) | 69(98.6%) | 70(100%) | 11.745 | 1 | <0.001* |
| Unemployed | 13(21.7%) | 47(78.3%) | 60(100%) | | | |

3.4. Effect of Substance Abuse on Pregnancy Outcome

Table 3. Relationship between substance abuse and pregnancy complications

| Substance abuse | complications | | | X ² | df | p-value |
|-------------------------|---------------|------------|-----------|----------------|----|---------|
| | Yes | Yes | Total | | | |
| Miscarriage | | | | | | |
| Abuse substances | 7(50%) | 7(50%) | 14(100%) | 6.942 | 1 | 0.008 |
| Do not abuse Substances | 22(19%) | 94(81%) | 116(100%) | | | |
| Preterm delivery | | | | | | |
| Abuse substances | 3(21.4%) | 11(78.6%) | 14(100%) | 3.721 | 1 | 0.047* |
| Do not abuse substances | 8(6.2%) | 122(93.8%) | 130(100%) | | | |

A statistically significant relationship was found between substance abuse and miscarriage ($p = 0.008$), miscarriage was reported more among those who abuse substances in pregnancy than those who did not

Preterm delivery was also recorded more among those that abuse substances in pregnancy than those who did not ($p = 0.047$) (Table 3)

4. Discussion

The reproductive age for women is known to be between the ages of 15-49yrs and the women in this study were within this age range. While the awareness of the harmful effect of substance abuse during pregnancy was high among these women, a number of the women still did not know that it could pose danger both to themselves and their babies. Majority of those who knew said their source of information was the hospital which is an indication that a

lot needs to be done in passing the right information to the women on the harmful effect of substance abuse especially in pregnancy. An Australian study found that 61.5% of the women had heard about the effects of alcohol on the fetus though 16.2% did not agree that the disabilities could be lifelong (Peadon E et al 2010). A study that was conducted among Danish speaking pregnant women found that only 29% were aware of the effects of substance abuse during pregnancy (Kesmodel U et al 2002), a figure lower than the findings of this study.

Substance abuse among pregnant women continues to pose national concern for a host of reasons including the exposure on their children (Accornero VH 2000). The largest population based survey in North Carolina, using 29,000 urine samples at delivery estimated the prevalence of substance abuse during pregnancy to be 5.2% with alcohol use at 6.7% (Stein MD 1997). The highest rate of alcohol and drug use in North America are among women

in their child bearing age, with 6 million women experiencing alcohol problems, and more than 5 million currently using illicit substance (Coleman FS 1998).

Findings from a study carried out in Akwa Ibom State of Nigeria among pregnant women showed that 9.1% use alcohol related mixture of herbs and other drugs, 4.0% sleeping medicines, while 2.5% used alcohol in the form of palm wine, brewed beer and 1% used kolanut (Festus A *et al* 2012).

This finding is similar to the findings in this study where 5.4% of the women were ingesting alcohol in pregnancy, 1.5% cigarette and 3.9% were taking sedatives in pregnancy.

Abuse of substances could be linked to some social factors which are determinants of the abuse of substances in pregnancy. This study found that although age did not have a statistically significant relationship with substance abuse in pregnancy, substance abuse in pregnancy was seen more among the younger age group compared to the older ones probably because many would have initiated the substance abuse before pregnancy especially as adolescents as a result of peer pressure or other environmental factors and continue the abuse of these substances during pregnancy due to the ignorance of its effect on the outcome of the pregnancy. Although this study relied on the information gotten from the pregnant women who admitted to abusing some substances in pregnancy and no laboratory investigation was carried out considering the fact that willful report of substance abuse is not as handy, this study was able to deduce some relationship between substance abuse among those who admitted to it and their social status. Those who were born into a polygamous family and single parents were found to be greater abusers of substances compared to those from monogamous family and a similar finding was seen among pregnant women who were either single or divorced compare to those who were married (Rockville MD 1995). This could be said to be as a result of lack of attention and adequate care experienced by these group of women.

Other factors found to have significant association with substance abuse among pregnant women were the educational level and the employment status of the women, substance abuse was found to be more among those who had no formal education/primary school education and also found to be more among those who were not employed. Findings from a study among substance abused pregnant women in Norway reported that the educational level, employment and economic level of the substance abusers was significantly lower compared to those who did not abuse substances (Bjorg H *et al* 2007).

Alcohol and other substances taken by pregnant women can harm the unborn baby. Pregnant women who continue their substance abuse often give birth prematurely, the infants are often small for their gestational age, and they have more perinatal incidents (Bjorg H *et al* 2007).

The adverse effects of alcohol consumption have been recognized for centuries, the exact risks of certain degrees

of maternal alcohol use are difficult to establish but there is no safe level of alcohol use during pregnancy. In the United States, fetal alcohol syndrome, which is recognized in 1 per 500 to 1,000 deliveries, is the most commonly identified cause of mental retardation (Abel EL *et al* 1986).

Alcohol is the cause of teratogenesis; most other drugs of abuse do not increase the risk of congenital malformation on a large scale. Substance abuse can produce significant degree of toxicity in both pregnant women and their offspring (Wheeler SF 1993).

Information gotten from the pregnant women on the outcome of their previous pregnancy showed that there was a statistically significant relationship between substance abuse and pregnancy complications such as miscarriage and pre-term delivery which was found to be more among substance abusers compared to those who did not report abuse of substances in pregnancy.

5. Conclusion

The prevalence of substance abuse among the pregnant women in this study was found to be as high as 10.8% and while alcohol was the most abused substance (5.4%), other substances like sedatives (3.9%) and cigarettes (1.5%) were also abused. Most of the pregnant women engaged in substance abuse (50%) did so following peer influence; some of them (35.8%) did so to relief pain or to induce sleep while up to 14.2% abused substances to change their mood.

This study also revealed that single or divorced pregnant women abused substances and a woman from a polygamous or single parents' background was more likely to be an abuser compared to others. Lower level of education (none or primary) and unemployment predisposed pregnant women to substance abuse. There were also statistically significant more complications of pregnancy such as miscarriages and preterm delivery among pregnant women engaging in substance abuse compared to those who did not.

A combination of health education activities by health workers and public awareness creation in the media will help to sensitize many pregnant women about the dangers of substance abuse and hopefully minimize its prevalence and complications.

References

- [1] Abel EL, Sokol RJ, (1986). Fetal alcohol syndrome is now leading cause of mental retardation. *Lancet*. 2(8517):1222
- [2] Accornero V.H, (2002). Behavioral outcome of preschoolers exposed prenatally to cocaine: Role of maternal behavioral health. *J pediatr psychol*. 27(3): 259-269
- [3] Bjørg H, Morten L, Elin OR (2007). Substance abuse in pregnant women: Experiences from a special child welfare clinic in Norway. *BMC Public Health*. 7:322
- [4] Clark GD(1992). The analysis of Cocaine and Benzoleozonine in Meconium. *J anal toxicol*. 16(4):261-263

- [5] Coleman FS, Kay J(1998). Substance abuse in pregnancy: Biology of addiction. *Obstet Gynecol Clin North Am* 25:1
- [6] Feng T (1993). Substance Abuse in Pregnancy. *Curr Opin Obstet Gynecol.* 5:16
- [7] Festus A, Emem AB, John AU, Oluyinka SA, Sunday BU, Alphonsus UI (2012). Self-Medication: potential risks and hazards among pregnant women in Uyo, Nigeria. *The Pan African Medical Journal.*13:15
- [8] Glantz JC. Wood. JR (1991).Obstetrical issue in substance abuse. *Pediatr Ann* 20:531
- [9] Kesmodel U, Schioler KP (2002). Drinking during pregnancy: attitudes and knowledge among pregnant Danish women. *Alcohol Clin Exp Res.*26:1553–1560
- [10] Peadon E, Payne J, Henley N, D'Antoine H, Bartu A, O'Leary C, Bower C, Elliott EJ(2010). Women's knowledge and attitudes regarding alcohol consumption in pregnancy: a national survey. *BMC Public Health.* 10: 510.
- [11] Rockville MD(1995) :US Department of Health and Human services(DHHS). Office of the Assistant secretary for planning and Evaluation (ASPE); national institute on Drug abuse. Substance Abuse Among women and parents. Washington DC.
- [12] Stein MD, Cyr MG (1997): Alcohol and other substance abuse: Women and substance abuse. *Med Clin North Am* 81:979
- [13] Wheeler SF(1993). Substance abuse during pregnancy. *Prim Care Subst Abuse.* 20:191