Medication and Substance Use among Pregnant Women in A Nigerian North Central Community, Kwara State, Nigeria

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ABSTRACT

The use of non-prescription medication and substances among pregnant women has become a global public health problem because of their tendency to cause untoward effects on the unborn child. This study was aimed at assessing medication and substance use among pregnant women and determines the knowledge of adverse effects associated with their use. A survey type of study involving 200 pregnant women in Erin-Ile community of Kwara State Nigeria. A semi structured questionnaire was used to elicit responses for the subjects. Data obtained were entered into SPSS v16 software for analysis. Descriptive data were presented in text, tables and chart forms and Chi square and logistic regression ware used to determine the significant level of association between categorical variables. P-value less than 0.05 were considered significant. The average age of respondents was 33.1±6.55. Thirty percent earned salary as government or private employee, 6.5% unemployed with the rest as artisans or traders. Ninety one percent (91%) claimed they always registered for antenatal but only 33% of them register at first three months of pregnancy. Financial constraint was the leading cause of delay in antenatal registration and 17% were ignorant of proper time to register. The most common ailment experienced in pregnancy was pain (80%) and up to 80% used medications that could have adverse effects on pregnancy. Ninety one percent of them engaged in the use of herbal preparations. Thirteen percent (13%) were aware of possible harmful effects of some substances taken during pregnancy. There was significant relationship between level of education and choice of antenatal method p=0.001 but this was not affected by the respondents occupational status, p=0.118. Most of the pregnant women were involved in taking medication and substances that could affect the health of unborn baby at one time of the pregnancy or the other. Method of antenatal use and time of commencement of antenatal were influenced by level of education of the women.

Keywords: Pregnancy; Medication; substances; adverse effects.

INTRODUCTION

Pregnancy is defined as the time between conception and birth and usually lasts 40 weeks (Howden and Meyer, 20011). In Nigeria, 8 percent of women age 25-49 have given birth by age 15, and 49 percent have become mothers by age 20(NPC, 2010). Substance use during pregnancy has garnered substantial medical, governmental, and media attention because of the risks that illicit drugs, alcohol, and tobacco use pose to unborn children (Haesti and Choo, 2002; CDCP, 2001; NIAAA, 2001; Cornelius *et al*; 1999). Early prenatal care is important to identify and treat health problems and influence health behaviors that can compromise fetal development, infant health and maternal health. Women receiving late or no prenatal care are at increased risk of poor birth outcomes such as having babies who are stillborn, low birthweight or who die within the first year of life (RIDH, 2009).

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Common discomforts associated with pregnancy which prompt pregnant women to take medications are quite many. Some of them are morning sickness which is a common symptom of early pregnancy that usually goes away by the end of the first three months. Morning sickness or nausea (with or without vomiting) can happen at any time of the day and is caused by changes in hormones during pregnancy. Others are backache in pregnancy, Bladder and bowel problems during pregnancy, fatigue, vaginal thrush and discharge and cramp are common illnesses experienced during pregnancy (MMH, 2015).

Indiscriminate consumption of any type of foods and drinks during pregnancy has been identified as the major cause of exposure of pregnant women to inadvertent intake of caffeine. For example the consumption of cola nut and some so called soft drinks could expose them to unintentional caffeine consumption.(OCA, 2005). Caffeine (1,3,7-trimethylxanthine), a plant alkaloid found in coffee, tea, cocoa, and cola soft drinks, is one of the most frequently consumed substances(Maslova *et al*, 2010). There has been concern in many women who continue to consume coffee and caffeine-containing beverages during pregnancy, a possible relation of caffeine intake to perinatal morbidities (Fenter *et al*; 1991; Fortier *et al*; 1993; Fray *et al*; 2005).

There are several studies that have shown evidence for increased risk of miscarriage or early stillbirth delivery among pregnant women who consumed more than moderate amounts of caffeine (Wang *et al*; 2008).

The use of herbal medicines plays significant roles in the management of both minor and major illnesses and has been influenced by patients' dissatisfaction with conventional allopathic medicines in terms of effectiveness and/or safety (Barnes, 2003; Huxtable, 1990; Abbot and Ernest, 1997).

According to World Health Organization, about 80% of the population world-wide use a variety of traditional medicine, including herbal medicines, for the diagnosis, prevention and treatment of illnesses, and for the improvement of general well-being (WHO, 2003).

The availability of these drugs over the counter not requiring any medical consultation before using them and food and drinks which have potential for harming the unborn baby and are readily available for consumption by individuals necessitates this study.

STUDY METHODS

Setting

This study was conducted in Erin-Ile (8°7′N; 4°42′E), in Odo-Ogun district area of Oyun Local Government Area of Kwara state between April and November 2015.The population of this community was 70,000 according to 2006 population census (NPC, 2014). The town is bounded in the North by Offa, Offa LGA, in the South by Ila-Odo, Osun State, in the East and West by Igosun and Ilemona respectively. It has one secondary Health facility and a host of private health centres. The community is about 50km south of Ilorin, the capital city of the state. A predominantly Yoruba speaking community but other ethnic groups like Hausa, Fulani , Ibo and Nupe are also residents of the community.

Study design

A longitudinal cross-sectional study carried out between March and September, 2014.

Study population

All pregnant women who were residents in the community at the time of this study were included in the study. Pregnant women who could not give adequate response to questions and/or did not give consent to participate were excluded from the study.

Sample size

Sample size was determined by using Kish and Leslie sample size formula (Kish and Leslie, 1965).

$$n = \frac{t^2 \times p(1-p)}{m^2}$$

Pregnancy prevalent rate of 15% (p=0.15%) was chosen based on Dekker's Advanced Maternal Age (Dekker, 2015), accuracy of 95% (t=1.96) and m= 0.05 margin of error. The sample size (n) of 196 was obtained. With 10% attrition rate, 215 questionnaires were used.

Two hundred and fifteen questionnaires were administered to all eligible subjects. Since the study was not based on clinic enrolments; consented subjects who were pregnant were identified based evidence for pregnancy or physical evidence of pregnancy at advance stage.

Data collection data was done through the use of interviewer administered questionnaire. Two hundred questionnaires were found to be suitable for analysis as some did not contain adequate information required for analysis.

Collected data were entered into the SPSS package and results analyzed. Data were presented in text, tables and chart forms and chi square test and logistic regression analysis were used for significance testing and p-value less than 0.05 was considered significant.

RESULTS

Two hundred out of two hundred and fifteen questionnaires were adequately responded to giving a response rate of 93%. The main age of the respondents was 33.1± 6.55. The highest maximum age was 52 while the minimum age was 19.

The Table 1 displays the demographic characteristics of the respondents. The attitude of the pregnant women concerning herbal preparations was also studied. Up to 182(91.0%) of the respondents used herbs at one time of their pregnancy or the other. In assessing the knowledge of respondents about the harmful effects of some of the substances taken during pregnancy, only 32(16.0%) of then were aware of possible harmful effects while 150(75.0%) were not aware of any harmful effects of any of the substances taken. Eighteen, 18(9.0%) were undecided as they did not give any response.

Some of the harmful effects that were known to the respondents are as presented in the pie chart above (Figure 2).

Table 1: Demographic characteristic of the respondents

Variables	Option	Frequency(%)
Age	18-25	24(12.0)
	26-35	121(60.5)
	36-45	50(25.0)
	45-55	5(2.5.0)
Educational Status	Non-formal	4(2.0)
	Primary	58(29.0)
	Secondary	93(46.5)
	Tertiary	45(22.5)
Occupation	Unemployed	13(6.5)
	Private employment	38(19.0)
	Government employment	23(11.5)
	Artisan	50(25.0)
	Trading	76(38.0)
Status of antenatal registration	Always	182(91.0)
	Sometimes	16(8.0)
	Never	2(1.0)

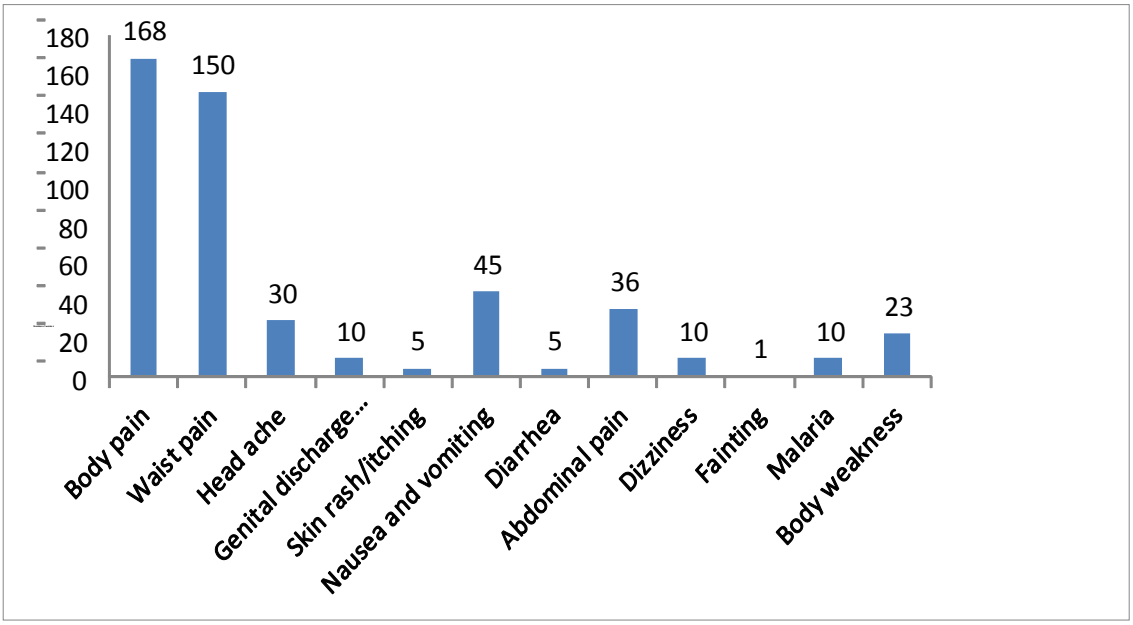

Figure 1: Common ailments experienced by pregnant women

Table 2: Frequency distribution of the commonly used drugs by self- medication

Drugs	Frequency (%)
Alabukun/karaole/no pain(Aspirin)	29(14.5)
Pentax/Boska/Forpain/Panadol extra	58(29.0)
Chloroquine	28(14.0)
Fansidar/Laridox/ amalar	20(10.0)
Feldene(pirixicam)	35(17.5)
Parcetamol/Panadol	100(50.0)
Ampiclox	46(23.0)
Fagyl(metronidazole)	20(10.0)
Tetracycline	25(12.5)
Mycoten(clotrimazole) cream	5(2.5)
Blood tonic/Multivitamins	35(17.5)
Total	**200(100.0)**

Table 3: Most commonly used substances among the pregnant women

Substances	Frequency (%)
Energy drinks	14(7.0)
Beer	8(4.0)
Alcohol	5(2.5)
Kolanut	13(6.5)
Nescafe	12(6.0)
Coke (coca cola)	105(52.5)
Pepsi/ mountain dew/7 up	39(19.5)
Cigarette	1(0.5)
Palm wine	3(1.5)
Total	200(100.0)

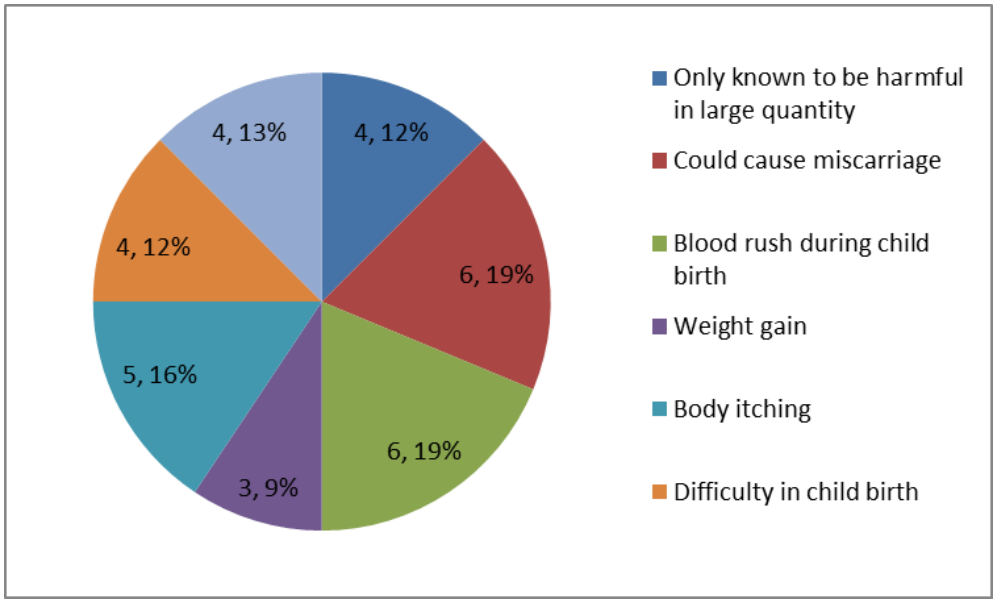

Figure 2: Knowledge of harmful effects of some substances taken during pregnancy

Table 4: Association between educational status of the respondents and facility of choice for antenatal program

		Choice of antenatal program			
		Hospital only	Home/Hospital	TBA	Total
Educational Status	Non-formal	2(1%)	0(0%)	2(1%)	4(2%)
	Primary	52(29%)	5(2.5%)	1(0.5%)	58(29%)
	Secondary	81(40.5%)	8(4%)	4(2%)	3(46.5%)
	Tertiary	41(20.1%)	3(1.5%)	1(0.5%)	45(22.5%)
Total		176(88%)	16(8%)	8(4%)	200(100%)

Chi square =23.51, p=0.001

Table 5: Association between knowledge of harmful effects of substances and educational status of respondents.

	Odd Ratio	S. E	Z	P-value	95% CI of OR
Educational status	0.917	0.253	0.118	0.917	0.558-1.506
Constant	6.761	0.766	6.220	0.016	-

Table 6: Association between occupational status and use of herbal medicines

		Use of herbal medicines		
		Yes	No	Total
Occupation	Unemployed	5(2.5%)	1(0.5%)	6(3.0)
	Private employment	78(39.0%)	6(3.0%)	84(42.0%)
	Govt. employment	7(3.5)	0(0.0%)	7(3.5%)
	Artisan	31(15.5%)	5(2.5%)	36(18%)
	Trader	61(30.5%)	6(3.0%)	67(33.5%)
	Total	182(91.0%)	18(9.0)	200(100%)

Chi square =2.52, p=0.67

DISCUSSION

The mean age of the respondents was within the range of pregnant group in Nigeria(NPC, 2010) Higher percentage of women were within their late twenties and early thirties with close to half of them having secondary school education which could account for the higher percentage seen in the age group in child bearing age. Majority of the women were either artisan or traders while only about thirty percent of them were employed in either private or government establishment. Available government employment in this community was limited. Most of them were either teachers or local government employee with just few of them in government health facilities as hospital attendants. The artisans and traders were just menial business ventures that bring only little income to the operators. In essence, the women were generally low income earners. Majority of the women claimed to attend regular antenatal program with only 1% of responded had no registered antenatal record. A study in Nigerian urban residents has recorded 10.9% of no antenatal care (NPC, 2010). Body pain as was seen as the most common ailment experienced by the pregnant women is it has been established that up to 50% of pregnant mothers will suffer low back pain especially in the third trimester(katonis *et al*; 2011). About one quarter of the women experienced nausea and vomiting which is the most common digestive condition affecting pregnant women(Eden, 2014) and up to 50-70% of women could experience serious episodes(Weigel and Weigel, 1989).

Medication use among the study group indicated various substances contraindicated in pregnancy. Some of these are caffeine containing drugs which could lead to low birth weight, aspirin and piroxicam could cause spontaneous abortion while tetracycline can lead to permanent discoloration of bone and dentition (Sengpiel, 2013; Li, 2003; Demers, 1968).

Majority of the respondents also took a lot of caffeinated drinks such as coffee, energy drinks and Coca-Cola, . Few of them took beer, alcohol, palm wine and cigarette. This incidence of cigarettes smoking is quite low compare with studies in other parts of the world for example Rhode Island which was up to 14%.

The prevalence of herbal use among this group is very high (91%) compared to world- wide estimate of about 80%. This could be as a result of the community being a semi urban area where majority of older adult age are farmers. A lower prevalence rate has been obtained in a study carried out in three out six geopolitical zones of Nigeria where 67.5% of pregnant women were found to be using herbal preparations while pregnant although this was carried out during clinic visits (Ndidi and Oseremen, 2010).

Alcohol, beer and palm wine were part of substances taken by some of the pregnant women although this was less than 10% of the total number of women. It's important to emphasize the role of alcohol in child weigh reduction and cognitive impairment. No amount of alcohol has been proved safe for a pregnant woman. When a pregnant woman drinks, alcohol travels through the placenta into a fetus, which doesn't have the capacity to break it down (Larkby and Day, 1997; NOFAS, 2011**)**. Heavy drinking can cause fetal alcohol syndrome, which can result in physical and behavioral problems in a child, as well as learning disabilities. According to the report, 2 to 5 percent of first-grade students in the U.S. might have disorders related to fetal alcohol syndrome (Maier and West, 2015).

The low level of awareness of the respondent about the potential harmful effects of the some substances they take during pregnancy is highly disturbing. Only 16% of them were aware of the potential harm. Their knowledge of possible harmful effects is as displayed in figure 1. There was significant association between participants educational level and their disposition on the choice of place for antenatal care ($p=0.001$) as women with higher level of education were observed to attend hospital only for their antenatal program. This is contrary to a study carried out in Uganda where educational status of women did not influence their level of antenatal attendance (Kawungezi *et al*; 2015). There was also no significant influence of their level of education on their knowledge of awareness of the harmful effects of substances used during pregnancy ($p= 0.917$). It was also found that there was no significant relationship between occupational status of the women and attitude of herbal use. It is of serious concern that majority of the women were not aware of possible harmful effects of medications and substances used during pregnancy. Awareness and educational program

should be instituted in prenatal program so as to empower the women of necessary knowledge required for the safety and both the mother and the unborn baby. Although this study did not investigate any specific effects of medication on the unborn but it has established the prevalence of irrational use of medicines and substances among pregnant women.

CONCLUSION

`Most of the pregnant women were involved in taking medication and substances that could affect the health of unborn baby at one time of the pregnancy or the other. Method of antenatal use and time of commencement of antenatal were influenced by level of education of the women.

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Conflict of interest

The authors declare no conflict of interest

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