

# Assessment of Drugs Use Among Pregnant Women Attending ANC in Sir Yahaya Memorial Hospital Birnin-Kebbi Kebbi State Nigeria

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## Abstract

**Background:** Maternal drug used during pregnancy may pose a teratogenic risk to the foetus and complications to the mother. However, the recommendation to avoid use of all drugs during pregnancy is unrealistic and may be dangerous, which depends on the risk benefit ratio to the mother and foetus. Proper use of medication during pregnancy is an essential part of prenatal care, since it can affect not only the health of the pregnant woman but also the developing foetus which is exposed to wide range of adverse effects.

**Design and Method:** The study was retrospective descriptive cross sectional survey. The target population comprised of all the pregnant women attending ANC in Sir Yahaya Memorial Hospital Birnin Kebbi. Systematic sampling was used in selecting sample of the research. The sample size was calculated using the Cochran's equation for sample proportion, at 95% confidence interval. Data was collected using structured questionnaire administered to the respondents during their clinic session. Face and content validity was used to validate the research instrument and test-retest reliability was used to ascertain the reliability of the questionnaire. Ethical approval was collected from Kebbi State Health Research Ethical Committee. Data was analysed using descriptive statistic in tables indicating percentages and frequencies; and Chi square statistical tool in hypotheses testing using SPSS version 20.

**Result:** The result shows that 49.6% of the respondents were not taking the entire drugs prescribed to them. 25.8% of the respondents believed that some drugs prescribed at ANC clinic may be detrimental to them or their foetuses. 20.7%, 21.3% and 20.0% of the respondents dislike multivitamins, folic acid and fersolate respectively among the ANC prescribed drugs. 9.5% of the respondents think multivitamin is not important. 8.1%, 9.4% and 6.1% of the respondents think fersolate, folic acid and calcium gluconate respectively are not important. The results show that at 0.05 level of significant age has no effect on the use of prescribed drugs,  $P > 0.05$ ; level of education has effect on common non-prescribed drugs pregnant women used,  $P < 0.05$ . Number of deliveries has no effect on what the pregnant women do with the drugs they dislike,  $P > 0.05$ .

**Conclusion:** It is concluded that lack of knowledge, beliefs and wrong perception on the use of drugs have a tremendous influence on the way pregnant women use drugs. About half of the respondents take drugs for more than prescribed days which might leads to some teratogenic effects. It is recommended that more effort be applied in educating pregnant women on all aspect of drugs use in pregnancy especially during ANC visit. Importance of multivitamins, minerals and iron supplement in pregnancy should be stressed to the pregnant women attending ANC.

**Key words:** Ante natal care, Assessment, Birnin-kebbi, Drugs use, Pregnant women, Nigeria

## 1. Introduction

Pregnancy is associated with profound physiological changes in woman's body. These unique changes challenge clinicians managing disease states during pregnancy in the selection of medications best suited to treat their patients. Maternal drug used during pregnancy may pose a teratogenic risk to the foetus and complications to the mother. However, the recommendation to avoid use of all drugs during pregnancy is unrealistic and may be dangerous, which depends on the risk benefit ratio to the mother and foetus<sup>1</sup>. Proper use of medication during pregnancy is an essential part of prenatal care, since it can affect not only the health of the pregnant woman but also the developing foetus which is exposed to wide range of adverse effects<sup>2,3</sup>.

In the developing world; poor health seeking behaviour of patients, delayed initiation of antenatal care (ANC), low level of educational status of mothers, lack of up to date information of health care providers, poor access to health facilities, and loose control over prescription and non-prescription drugs could aggravate irrational use of

drugs during pregnancy<sup>1</sup>. Some pregnant women are self medicating themselves with the use of over-the-counter drugs which can pose a lot of devastating effect to both the mother and developing foetus. Olesen, Sondergaard, & Thrane et al.<sup>4</sup> stated that; non compliance for prescribed drugs during pregnancy is prevalent, but as the information for drug use might differ depending on how it was obtained, knowledge about drug used during pregnancy is still relatively unknown. According to Eze, Eferakeya, Oparah et al.<sup>5</sup>, information on the use of drugs during pregnancy is scarce and anecdotal. Despite the absence of adequate studies on safety and efficacy of drugs for pregnant women, evidence available shows that clinicians prescribe, and pregnant women take a surprisingly large number of drugs. An international investigation sponsored by World Health Organization (WHO) showed that pregnant women ingest an average of three prescription medications during pregnancy. Furthermore, 86% of the women had taken at least one prescription medication during their pregnancies<sup>5</sup>.

The need for micronutrient supplementation in pregnancy in developing countries is likely to be great because of widespread maternal malnutrition. Public health resources, however, are limited and it is inevitable that priority will be given to interventions that are both efficacious and effective. Current evidence shows that some micronutrients, such as folate and iron and iodine in population-based iodine supplementation, can reduce the risk of adverse pregnancy outcomes. Others, such as calcium, vitamin A, and zinc, may reduce the incidence of ill health and some life-threatening complications of pregnancy that are still common in many developing countries<sup>6</sup>. Thus the use of such supplement cannot be ruled out from such countries. Currently, iron or iron and folate supplements are distributed to pregnant women in most developing countries free of charge or at low cost by public health authorities. Nevertheless, few data show that coverage is good or that anaemia prevalence rates are declining.

Moreover, less-informed women may take more than the recommended dose on the premise that it is advantageous to the pregnancy outcome and the newborn infant's health. Toxic effects caused by overdosing are a major concern for anyone involved in prenatal care, especially for lipid-soluble vitamins such as A and D that have limited excretion routes. Also some pregnant women decline from taking the micronutrient supplement which may lead to having an underweight baby. Recent evidence suggests that infants who are small or disproportionate at birth have increased health risks later in life. The hypothesis is that such infants have had to adapt to a limited supply of nutrients and that in so doing their physiology and metabolism are permanently changed, although the rationale for this hypothesis has been challenged<sup>6</sup>. This research work will therefore assess drugs use among pregnant women attending ANC in Sir Yahya Memorial Hospital Birnin Kebbi.

## **2. Statement of the problem**

The provision of complete health care necessitates the availability of safe, effective and affordable drugs of the required quality, in adequate quantity all times. The irrational use of drugs has become a serious problem in developing countries. Consequences of inappropriate drug use includes increased morbidity and mortality, increased risk of unwanted effects, the emergence of drug resistance, waste of resource, and psychosocial effects. In the developing world; poor health seeking behaviour of patients, delayed initiation of ante natal care (ANC), low level of educational status of mothers, lack of up to date information of health care providers, poor access to health facilities, and loose control over prescription and non-prescription drugs could aggravate irrational use of drugs during pregnancy<sup>1</sup>. It is observed that some pregnant women decline from taking some micronutrient supplements which may leads to having underweight baby and consequent complications and suffering in labour. Pregnant women patronise over the counter drugs in the treatment of minor illnesses like vomiting, fever, lower abdominal pain and headache. The use of non-prescribed drugs by the pregnant women, and clinicians prescribing large number of drugs pose a great threat to the mother and foetus as some of the drugs may have some teratogenic effects. It therefore calls for special attention because in this case in addition to the mother, the health and life of her unborn child is also at stake. The drugs given to pregnant mothers for therapeutic purposes may cause serious structural and functional adverse effects in developing foetus.

## **3. Significance of the study**

The research work will help in understanding the situation of drugs use in pregnancy in our society; it will serve as a pointer to whether the pregnant women and their foetuses are at risk of devastating effect of drugs over-prescription, contra indicated drugs, over dosing and use of non-prescribed drugs or not. It serves as a preamble for overseen and tackling the problems associated with the drugs side effects and teratogenic effects in pregnancy in our hospitals. The research findings will also be helpful to the policy makers and hospitals management in formulating policies pertaining ante natal care and pregnancy management. Pregnant women will also benefit from the research as it provides a way by which they will be free from likely devastating effects of non-prescribed drugs, over prescription, over dosing and or contra indicated drugs. The benefits to the society

include the possibility of having fewer babies with congenital abnormalities that may not be productive to the societal development.

#### **4. General objective**

To assess drugs use among pregnant women attending ANC in Sir Yahaya Memorial Hospital Birnin Kebbi.

#### **Specific objectives**

1. To analyse the drugs used by pregnant women
2. To determine if the pregnant women and their foetuses are at risk of drugs adverse effects
3. To examine drugs compliance level of pregnant women

#### **5. Research questions**

1. Do the drugs used by the pregnant women harmful to them and their foetuses?
2. Are the pregnant women and their foetuses at risk of drugs adverse effect?
3. Do the pregnant women adhere with the micro nutrient supplement prescribed drugs?

#### **6. Research hypotheses**

The following were the null hypotheses of the research

1. Age of the pregnant women has no effect on drugs use.
2. Educational level of the pregnant women has no affect on drugs use.
3. Number of deliveries has no effect on drugs use.

#### **7. Literature review**

##### **7.1 Specific vitamin requirements**

As a component of prenatal care, micronutrient supplementation might reduce maternal morbidity and mortality directly by treating a pregnancy-related illness or indirectly by lowering the risk of complications at delivery. Nevertheless, the effectiveness of supplementation programs—notably of iron and folate—has tended to focus on infant outcomes, perinatal mortality, preterm delivery, and low birth weight<sup>6</sup>.

##### **Folic acid**

The naturally occurring, water-soluble vitamin folate is integral to the synthesis and maintenance of DNA, metabolism of amino acids, production of red blood cells, and growth of the fetus and placenta<sup>7</sup>. Folic acid is a synthetic compound that is used as a folate supplement in various dosages. Strong evidence links folic acid supplementation to a decreased incidence of neural tube defects, and all authorities recommend an increased allowance for women of childbearing age. A Cochrane review summarized data from randomized and quasi-randomized trials of daily periconceptional folic acid supplementation at doses of 360 µg to 4000 µg (0.36 mg-4 mg)<sup>8</sup>. Folic acid supplementation may also be beneficial for preventing other congenital anomalies such as cleft lip/palate and heart defects; however, evidence from randomized trials is lacking.

##### **Iron**

Adequate elemental iron intake is important during pregnancy to maintain the increase in red blood cell mass and meet the oxygen requirements of the uteroplacental circulation<sup>9</sup>. Maternal anemia has been associated with LBW, preterm delivery, perinatal mortality, and maternal depression. A Cochrane review of 49 trials involving more than 20,000 pregnant women showed that although prophylactic iron supplementation was associated with higher hemoglobin levels in the peripartum period, there were no differences in maternal or neonatal clinical outcomes<sup>10</sup>. In addition, significant adverse effects were noted, especially hemoconcentration and constipation. This review was limited by significant heterogeneity in the study populations because the authors included trials

from a variety of countries in different phases of economic development. A recent study found an association between iron supplementation and gestational diabetes<sup>11</sup>. The RDA for iron during pregnancy is 27 mg/day.<sup>12</sup> In the setting of iron deficiency anemia, supplementation of 60 mg/day to 80 mg/day of elemental iron is suggested<sup>9</sup>. The lowest necessary dose should be used. Vitamin C increases the absorption of iron.

## Multivitamin

In the developing world, where the risk of malnutrition is high, multiple trials have been performed to assess the effects of prenatal multi micronutrient supplementation. Two recent systematic reviews and meta-analyses have demonstrated a decreased risk of SGA<sup>13</sup>, and LBW<sup>14</sup> infants in women who received multi micronutrient supplements versus those who received standard iron-folic acid supplementation. Reductions in miscarriage, preterm birth, and stillbirth have not been consistently noted, and vitamins have been associated with an increased incidence of multiple gestation<sup>15</sup>.

Most of the literature on multivitamin use in the developed world consists of observational studies, and many have found improved outcomes. Multivitamin use has been associated with a decreased risk of SGA infants<sup>16</sup>, specifically in non overweight women<sup>17</sup>, black women<sup>18</sup>, and low-income urban women<sup>19</sup>. The literature regarding preterm birth is conflicting, with some studies showing a decreased risk<sup>17,19,20</sup>, some showing no effect<sup>18</sup>, and 1 study showing an increased risk of preterm birth with multivitamin use<sup>20</sup>. A decreased risk of placental abruption has also been noted<sup>21</sup>, as well as a decreased risk of preeclampsia<sup>22</sup>.

## 7.2 Category of drugs in pregnancy

In 1979, the United States Food and Drug Administration (FDA) introduced a classification of fetal risks due to pharmaceuticals. The pregnancy category of a pharmaceutical agent is an assessment of the risk of fetal injury due to the pharmaceutical, if it is used as directed by the mother during pregnancy. It does not include any risks conferred by pharmaceutical agents or their metabolites in breast milk<sup>23</sup>.

The Food and Drug Administration (FDA) has developed a rating system to provide therapeutic guidance based on potential benefits and fetal risks. Drugs have been classified into categories A, B, C, D and X based on this system of classification. Drugs, and some multivitamins, that have demonstrated no fetal risks after controlled studies in humans are classified as Category A, while drugs like thalidomide with proven fetal risks that outweigh all benefits are classified as Category X.

### Pregnancy category

**A No risk in controlled human studies:** Adequate and well-controlled human studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).

**B No risk in other studies:** Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no adequate and well-controlled studies in pregnant women OR Animal studies have shown an adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus in any trimester.

**C Risk not ruled out:** Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.

**D Positive evidence of risk:** There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.

**X Contraindicated in Pregnancy:** Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits.

N FDA has not yet classified the drug into a specified pregnancy category<sup>24</sup>.

### 7.3 Empirical literature

In a study, Festus, Emem, & John<sup>25</sup> suggest that the practice of self-medication is common among pregnant women in our environment. In this study, various substances ranging from traditional preparations/substances including kola nuts and local gin to orthodox medications were found to have been used by the pregnant women. This study shows variation in the practice and use of self medication among the participants. In this study, about 25% and 35% of the pregnant women with high level of education used analgesics and antibiotics respectively. This, when compared with 6.9% and 12.0% of them with low level of education involved in the use of the same substances, is very significant. Also about 6.9% of women with low education self-medicate herbs compared to 5.6% of those with high education. These findings seem to suggest that the level of education influences the type and nature of substances used. It was also clear in the study that no pregnant woman smoked cigarette/tobacco or used any other potent substances, such Indian hemp cocaine or heroin. Several reasons may have contributed to this. First, these substances except tobacco, cigarette and Indian Hemp to a large extent are foreign to the environment and the knowledge of their usefulness, if any is limited. Although it is important to emphasize that the non use of these substances does not mean that they are not available. Secondly, the cost of obtaining them may be very high and affordability may also influence their usage. Finally, the custom, which restricts women from using certain substances, even in times of ill-health, may have also contributed to their non use.

Also in another study, various orthodox medical regimens were found to be used by pregnant women. A significant proportion, 42% of pregnant women self-medicate analgesics, 37% antibiotics and 4% various forms of sedatives. Even though, these are modern medicine, the act of self-medication could be dangerous, considering the possible poor knowledge of pharmacodynamics of these medicines<sup>26</sup>. Antibiotics, such as septrin, chloramphenicol and tetracycline are dangerous and contraindicated during pregnancy<sup>27</sup>. Apart from the resistance that may result from inadequate dosing, exposing foetus to them in early months of pregnancy may result in various complications, such as kernicterus, gray baby syndrome and respiratory distress. Non steroid anti inflammatory drugs for example widely used in pregnancy to treat fever pain and inflammation may cause embryo-foetal and neonatal adverse effect. Example to NSAIDs in early pregnancy is associated with increased risks of miscarriage and malformations and after 30 weeks of gestations is related with an increased risk of premature closure of foetal ductus arteriosus and oligo hydromnios<sup>28</sup>. Other drugs used by pregnant women during prenatal period like immune suppressant drugs are not associated with higher risk of congenital abnormalities but can be associated with an increased incidence of prematurity, intra uterine growth retardation and low birth weight<sup>29</sup>.

In a population based survey cohort study in Sweden<sup>30</sup>, found that 57.6% purchased at least one prescribed drug during pregnancy and 50.9% during lactating period. The most widely purchased drug during pregnancy were antibacterial for systematic used, followed by sex hormone, NSAIDs, antidepressant and drugs for the respiratory system. Antibiotic were the most dispensed prescribed drugs during pregnancy. The most prescribed antibiotic were B-lactam antibacterial and penicillin and there were strong decline in the dispensed antibiotic not recommended in pregnancy. This is more worrisome as the sources and instructions concerning the use of these medicines are not from professionals. One major concern would be issue of inadequate dosing and resistance with respect to antibiotics. The widespread use of suboptimal dosages of antibiotics is a major threat, contributing to the development of resistant bacterial strains<sup>31</sup>.

## 8. Study design and Method

The study was retrospective descriptive cross sectional survey that assessed the drugs use among pregnant women in Sir Yahaya Memorial Hospital Birnin Kebbi.

### 8.1 Population of the study

The Target population comprised of all the pregnant women attending ANC in Sir Yahaya Memorial Hospital Birnin Kebbi.

### 8.2 Sampling method

Systematic sampling was used in selecting sample of the research using sampling frame collected from the hospitals' ANC unit.

### 8.3 Sample size determination

The sample size was calculated using the Cochran's equation for sample proportion, at 95% confidence, 5% level of precision, and the estimate proportion of an attribute present in the population of the study is assumed to be 50%.

$$n_o = \frac{t^2 pq}{d^2}$$

t= selected alpha level in each tail

(p)(q)= estimate of variance. Maximum possible proportion is 0.5

1- Maximum possible proportion produces maximum possible sample size.

d= acceptable margin of error for proportion being estimated = 0.05<sup>32</sup>.

$$t = 1.96 \qquad \frac{1.96^2 \times 0.5 \times 0.5}{0.0025} = 384$$

$$p = 0.5 \qquad = \qquad 0.0025$$

$$d = 0.05$$

The sample size of 384 exceed 5%, the Cochran's correction formulae was used to calculate final sample size<sup>32</sup>.

$$n_1 = n_o / 1 + n_o / N$$

where N = population

n<sub>1</sub> = final sample size

$$n_1 = 384 / 1 + 384 / 671 = 244$$

Therefore the sample size was 244

#### 8.4 Method of data collection

Data was collected using 25 items structured questionnaire administered to the respondents during their clinic session. A respondent that could not read English was interviewed using the questionnaire. Thus research assistance was trained for the purpose of administering and interviewing the respondents.

#### 8.5 Validity and reliability

Face and content validity was used to validate the research instrument by giving the instrument to at least three experienced people in the research subject. Test-retest reliability was used to ascertain the reliability of the questionnaire and found to have the reliability of 8.4

#### 8.6 Ethical consideration

Permission was obtained from the hospital management, and ethical approval was collected from Kebbi State Health Research Ethical Committee. The subjects of the study were made to involve in the research voluntarily, and information provided was treated as confidential.

#### 8.7 Method of data analysis

Data was analysed using descriptive statistic in tables indicating percentages and frequencies; and Chi square statistical tool in hypotheses testing using SPSS version 20.

## 9. Result

**Table 1: Socio-demographic data of the respondents**

<b>Variables</b>	<b>Frequencies</b>	<b>Percentages</b>
15-24	107	43.9
25-34	96	39.3
35-44	38	15.6
≥ 45	3	1.2
<b>Number of deliveries</b>		
0-3	42	17.2
4-6	102	41.8
7-9	72	49.5
≥10	28	11.5
<b>Educational level</b>		
Primary education	42	17.2
Secondary education	95	38.9
Tertiary education	34	13.9
Non-formal education	72	29.5
Non response	1	0.4
<b>Occupation</b>		
Civil servant	22	9.0
Business	37	15.2
Hand work	38	15.6
House wife	147	60.2

Table 1 above shows that most of the respondents (43.9%) were within the age of 15-24 year, and only 1.2% were found to be ≥ 45 year. 49.5% of the respondents delivered 7-9 times and only 13.9% attended tertiary education. Majority of the respondents (60.2%) were living only as house wives.

**Table 2: Questions pertaining prescribed and non-prescribed drugs**

Questions	Frequency		Percentage	
	Yes	No	Yes	No
Do you attend ANC clinic regularly?	214	30	87.7	12.3
Do you take the entire drugs prescribed to you at ANC clinic?	123	121	50.4	49.6
Among the drugs prescribed to you at ANC clinic, is there any one you don't like?	160	84	65.6	34.4
Do you think all the drugs prescribed to you at ANC are important to you and your baby?	196	48	80.3	19.7
Is there any drug prescribed to you at ANC that you think is detrimental to you or your baby?	63	181	25.8	74.2
Is there any time the non-prescribed drug gives you problem?	55	189	22.5	77.5

Table 2 above indicates that 49.6% of the respondents were not taking the entire drugs prescribed to them, 65.6% did not like some drugs prescribed to them at ANC clinic. 80.3% of the respondents believed that all the drugs prescribed to them at ANC clinic were important. However 25.8% of the respondents thought that some of the drugs prescribed to them at ANC clinic are detrimental to them or their babies; and 22.5% had problems due to non-prescribed drugs used.



**Table 3: Other questions pertaining prescribed and non-prescribed drugs**

Question	Variable	Percentage
Which of the prescribed drugs do you dislike?	Multivitamins	20.7
	Fersolate	20.0
	Folic acid	21.3
	Calcium gluconate	9.6
	Vitamin C	2.7
	Metronidazole	3.9
	Sulfadoxine plus pyrimethamine	2.2
Which of the prescribe drugs do you think is not important?	Multivitamins	9.5
	Fersolate	8.1
	Folic acid	9.4
	Calcium gluconate	6.1
	Vitamin C	3.6
	Metronidazole	1.2
What are the common non- prescribed drugs you used?	Paracetamol	72.3
	Promethasine	8.1
	Ibuprofen	11.5
	Metronidazole	6.6
	Ampiclox	6.6
	Ciprofloxacin	7.0
	Chlorampenicol	5.6
	Artemether	14.6
	Magnesium trisilicate	8.3
	Cimitidine	3.0
	Omeprazole	3.1
	Amoxicillin	2.6
	Tetracycline	8.4
	Chloroquine	3.4
	Metronidazole	1.2

Table 3 above indicates that 20.7% of the respondents dislike multivitamins among the prescribed drugs, 21.3% dislike folic acid and 20.0% dislike fersolate. 9.5% of the respondents think multivitamin is not important. 8.1%, 9.4% and 6.1% of the respondents think fersolate, folic acid and calcium gluconate respectively are not important. Majority of the respondents (72.3%) use paracetamol as non-prescribed drugs, 11.5% use ibuprofen, 14.6% use artemether and 8.4% use tetracycline as non-prescribed drugs.

**Table 4: For how long do you take the drugs prescribed to you at ANC clinic?**

Variable	Frequency	Percentage
5 days	59	24.2
7 days	41	16.8
10 days	22	9.0
Several days	117	48.0
Non response	5	2.0
<b>Total</b>	<b>244</b>	<b>100</b>

Table 4 above revealed that 48.0% of the respondents take prescribed drugs for several days and only 16.8% take the drugs for 7 days.

**Table 5: What do you do with the drugs you dislike?**

Variable	Frequency	Percentage
Stop taking the drug	59	24.2
Take it occasionally	85	34.8
Take it by all means	69	28.3
Change the drug	7	2.9
Non response	24	9.8
<b>Total</b>	<b>244</b>	<b>100</b>

Table 5 indicates that 34.8% of the respondents take the drugs they dislike occasionally and 24.2% stop taking the drugs; however only 2.9% changed the drugs.

**Table 6: What do you do when you are sick in pregnancy?**

Variable	Frequency	Percentage
Come to the hospital	163	66.8
Buy drugs from medicine shop	56	23.0
Use previous prescription	10	4.1
Call health personnel at home	7	2.9
Non response	8	3.3
<b>Total</b>	<b>244</b>	<b>100</b>

Table 6 above shows that 66.8% of the respondents come to the hospital when they are sick, 23.0% buy drugs from medicine shop and only 4.1% use previous prescription when they are sick.

**Table 7: In what months of pregnancy do you mostly take non-prescribed drugs?**

Variable	Frequency	Percentage
1-3 months	73	29.9
4-6 months	65	26.6
7-9 months	20	8.2
All months	46	18.9
Non response	40	16.4
<b>Total</b>	<b>244</b>	<b>100</b>

Table 7 above shows that 29.9% of the respondents take non-prescribe drugs in first trimester of pregnancy and 8.2% in third trimester.

**Table 8: For how long do you take the non-prescribed drug?**

Variable	Frequency	Percentage
5 days	90	36.9
7 days	30	12.3
10 days	4	1.6
Several days	70	28.7
Non response	50	20.5
<b>Total</b>	<b>244</b>	<b>100</b>

Table 8 above indicates that 36.9% of the respondents take non-prescribed drugs for five days, 28.7% for several days and 12.3% for 7 days.

## 10. Discussion of findings

The result shows that majority of the respondents (43.9%) were within the age bracket of 15-24 years, also 49.5% of the respondents delivered 7-9 times. The relationship between the two findings may be an indication of poor family planning practice among the respondents. It is also in congruence with respondents' level of education in which only 13.9% attended tertiary institution (Table 1). Thus lack of high level of education could lead to early marriages and decline from family planning practice. In table 2 it is shown that there is problem with the use of ANC drugs, this is clear as 49.6% of the respondents were not taking the entire drugs prescribed to them. However 80.3% of the respondents believed that all the drugs prescribed to them at ANC clinic are important. One element that shows lack of knowledge on drugs prescribed at ANC is that 25.8% of the respondents believed that some drugs prescribed at ANC clinic are detrimental to them or their fetuses.

The alarming findings of the result are that 20.7%, 21.3% and 20.0% of the respondents dislike multivitamins, folic acid and fersolate respectively among the ANC prescribed drugs. 9.5% of the respondents think multivitamin is not important. 8.1%, 9.4% and 6.1% of the respondents think fersolate, folic acid and calcium gluconate respectively are not important (This is found in table 3). They are vitamins and minerals supplement that help in the prevention of pregnancy and delivery associated complications. Conditions such as anaemia, haemorrhages and congenital abnormalities are prevented using vitamins and minerals supplements. Moreover 34.8% of the respondents take the drugs they dislike occasionally and 24.2% stop taking the drugs; however 28.3% take the drugs by all means (Table 5).

When asked on the use of non-prescribed drugs, 72.3% of the respondents used paracetamol, 11.5% ibuprofen, 14.6%artemether and 8.4% tetracycline. Ibuprofen, artemether and tetracycline are best to be avoided in pregnancy. When asked for how long the respondents take their prescribed drugs, Table 4 indicates that 48.0% take the drugs for several days and only 16.8% take the drugs for 7 days. Several days here means more than 10 days and the drugs taken for several days might include those need not be taken for long time, and some may be harmful to the mother or foetus when taken for such period of time.

Table 6 shows that majority of the respondents (66.8%) go to the hospital when they are sick, 23.0% buy drugs from medicine shop and only 4.1% use previous prescription when they are sick. Thus most of the respondents are having positive attitude of attending hospital when sick. However the percentage of the respondents (23.0%) that buy drugs from the medicine shop could be considered significant enough to be taken as threat, looking at the potential risk associated with self medication in pregnancy. When asked in what months of pregnancy they mostly take non-prescribed drugs, table 7 shows that 29.9% of the respondents take non-prescribed drugs in first trimester of pregnancy, the most delicate of the pregnancy periods, and 8.2% in third trimester. This indicates that some of the respondents expose themselves and their foetuses to the risk of teratogenic effects of the drugs. More over 28.7% of the respondents when asked revealed that they take non-prescribed drugs for several days (Table 8); which may reinforce the likely hood of teratogenic effect and other adverse effects on the mother including pregnancy and delivery complications.

In the hypotheses testing the results show that at 0.05 level of significant age has no effect on the use of prescribed drugs, P is 0.35 ( $P>0.05$ ); age has effect on what the pregnant women do with the drugs they dislike, P is 0.04 ( $P<0.05$ ) and age has effect on the common non-prescribed drugs pregnant women used, P is 0.03 ( $P<0.05$ ).

At 0.05 level of significant, level of education has no effect on the use of prescribed drugs, P is 0.76 ( $P>0.05$ ); level of education has no effect on what the pregnant women do with the drugs they dislike, P is 0.65 ( $P>0.05$ ) and level of education has effect on common non-prescribed drugs pregnant women used, P is 0.00 ( $P<0.05$ ).

At 0.05 level of significant number of deliveries has effect on the use of prescribed drugs, P is 0.01( $P<0.05$ ); number of deliveries has no effect on what the pregnant women do with the drugs they dislike, P is 0.89 ( $P>0.05$ ) and number of deliveries has no effect on non-common prescribed drugs pregnant women used, P is 0.84 ( $P>0.05$ ).

## 11. Conclusion

The assessment of drugs use among pregnant women in Sir Yahaya Memorial Hospital Birnin-Kebbi comes with so many different findings including the ways by which the pregnant women used prescribed and non-prescribed drugs. It shows that there were some problems that need to be addressed. Lacks of knowledge, beliefs and wrong perception on the use of drugs have a tremendous influence on the way pregnant women use drugs. The result shows a serious misconception that could leads to a devastating effect on the mother and foetus health especially misconception on the use of multivitamins, minerals and iron that some respondents considered as not important; Thus about half of the respondents do not take the entire drugs prescribed to them. Moreover some of the respondents used drugs contraindicated in pregnancy and about half of the respondents take drugs for more than prescribed days which might leads to some teratogenic effects. Self medication is low among the respondents, but self medication in pregnancy to whatever extent needs to be addressed; as it effect on the mother and foetus could not be that mild. There exist more risks of teratogenicity as considerable number of respondents said to take non-prescribed drugs in first trimester of pregnancy.

## 12. Recommendations

1. More effort should be applied in educating pregnant women on all aspect of drugs use in pregnancy especially during ANC visit.
2. Importance of multivitamins, minerals and iron supplement in pregnancy should be stressed.
3. Pregnant women should be educated on taking the drugs for the prescribed days and disadvantages of not doing so.

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### REFEENCES

1. Gebremichael I. G. and Gomathi P. (2014). assessment of drug use and effect in pregnant women attending antenatal care in hospitals of mekelle, tigray, ethiopia. *journal of drug delivery & therapeutics*. 2014; 4(6):75-82
2. Daw JR, Hanley GE, Greyson DL, et al. (2011). Prescription drug use during pregnancy in developed countries; a systematic review. *Pharmaco epidemiol. Drug saf*. 20:895-902
3. Mitchell AA, Gilboa SM, Werler MM, et al. (2011). National birth defect prevention study, medication use during pregnancy, with particular focus on prescription drugs: 1976-2008. *AM J. Obstet. Gynaecol*. 205: 51e 1-8
4. Olesen C, Sondergaard C, Thrane N, et al. (2001). Europe MAP Group. Do pregnant women report use of dispense medications? *Epidemiology* 2001;12(5):497-501
5. Eze UI, Eferakeya AE, Oparah AC, et al. (2007). Pharmacy practice. Assessment of prescription profile of pregnant women visiting antenatal clinics
6. Oladapo A L. (2000). Nutrition in pregnancy: mineral and vitamin supplements *American Society for Clinical Nutrition* vol. 72 no. 1 **280s-290s**
7. Insel P, Ross D, McMahon K, et al. (2011). *Nutrition*. 4th ed. Sudbury, MA: Jones and Bartlett
8. De-Regil LM, Fernández-Gaxiola AC, Dowswell T, et al. (2010). Effects and safety of periconceptional folate supplementation for preventing birth defects. *Cochrane Database Syst Rev*. 2010;(10):CD007950.
9. American College of Obstetricians and Gynecologists. (2008) ACOG Practice Bulletin No. 95: anemia in pregnancy. *Obstet Gynecol*. 2008;112(1):201-207.
10. Peña-Rosas JP, and Viteri FE. (2009). Effects and safety of preventive oral iron or iron+folic acid supplementation for women during pregnancy. *Cochrane Database Syst Rev*. 2009;(4):CD004736.
11. Bo S, Menato G, Villosio P, et al. (2009). Iron supplementation and gestational diabetes in midpregnancy. *Am J Obstet Gynecol*. 2009;201(2):158.e1-158.e6.
12. Food and Nutrition Board, Institute of Medicine, National Academy of Sciences (2011). Recommended Dietary Allowance and Adequate Intake Values, Vitamins and Elements. Institute of Medicine Web site. [www.iom.edu/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx](http://www.iom.edu/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx). Updated September 12, 2011. Accessed January 2015.
13. Haider BA, Yakoob MY, Bhutta ZA. (2011). Effect of multiple micronutrient supplementation during pregnancy on maternal and birth outcomes. *BMC Public Health*. 2011;11(suppl 3):S19.
14. Shah PS, and Ohlsson A (2009). Knowledge Synthesis Group on Determinants of Low Birth Weight and Preterm Births. Effects of prenatal multimicronutrient supplementation on pregnancy outcomes: a meta-analysis. *CMAJ*. 2009;180(12):E99-E108.
15. Rumbold A, Middleton P, Pan N, et al. (2011). Vitamin supplementation for preventing miscarriage. *Cochrane Database Syst Rev*. 2011;(1):CD004073.
16. Catov JM, Bodnar LM, Ness RB, et al. (2007). Association of periconceptional multivitamin use and risk of preterm or small-for-gestational-age births. *Am J Epidemiol*. 2007;166(3):296-303.
17. Catov JM, Bodnar LM, Olsen J, et al. (2011). Periconceptional multivitamin use and risk of preterm or small-for-gestational-age births in the Danish National Birth Cohort. *Am J Clin Nutr*. 2011;94(3):906-912.
18. Burris HH, Mitchell AA, and Werler MM. (2010). Periconceptional multivitamin use and infant birth weight disparities. *Ann Epidemiol*. 2010;20(3):233-240.
19. Scholl TO, Hediger ML, Bendich A, et al. (1997). Use of multivitamin/mineral prenatal supplements: influence on the outcome of pregnancy. *Am J Epidemiol*. 1997;146(2):134-141.
20. Alwan NA, Greenwood DC, Simpson NA, et al. (2010). The relationship between dietary supplement use in late pregnancy and birth outcomes: a cohort study in British women. *BJOG*. 2010;117(7):821-829.
21. Nilsen RM, Vollset SE, Rasmussen SA, et al. (2008). Folic acid and multivitamin supplement use and risk of placental abruption: a population-based registry study. *Am J Epidemiol*. 2008;167(7):867-874.
22. Bodnar LM, Tang G, Ness RB, et al. (2006). Periconceptional multivitamin use reduces the risk of preeclampsia. *Am J Epidemiol*. 2006;164(5):470-477.
23. British National Formulary. (55 ed.). March 2008.

24. Food and Drug Administration. Federal Register 1980;44:37434-67
25. Festus A, Emem A B, John A U, et al. (2012). Self-Medication: potential risks and hazards among pregnant women in Uyo, Nigeria. *The Pan African Medical Journal*. 2012;13:15
26. Shah AP, Parmar SA, Kumkishan A, et al. (2011). Knowledge, Attitude and Practice (KAP) Survey Regarding the safe use of Medicines in rural area of Gujurat. *Adv Trop Med Pub Health*. 2011; 1(2): 66-70
27. Conover EA. (2003). Herbal agents and over-the-counter medications in pregnancy. *Best Pract Res Clin Endocrinol Metab*. 2003 Jun;17(2):237-51.
28. Antonucci R, Zaffanello M, Puxeddu E, et al. (2012). Use of non steroid anti inflammatory drugs in pregnancy: impact on the fetus and newborn. *Curr. Drug Metab*. 13(4): 474-90
29. Prevot A, Martin S, and Guignard JP. (2002). In utero exposure to immunosuppressive drugs. *Biol. Neonate* 81(2): 73-81
30. Olof S, Fredrik G, Tobis S. Et al. (2011). Drug use during pregnancy in Sweden- assessed by prescribed drug register and medical birth register. *Clin. Epidemiol*. 2011; 3:43-50
31. Egbegi AO. (2011). Microbiological safety of Herbal drinks sold in Ado-Ekiti Metropolis. *Adv Trop Med Pub Health*. 2011; 1 (2):82-91
32. Bartlett, Kotrlik, and Higgins (2001). *Organizational Research: Determining Appropriate Sample Size in Survey Research*. *Information Technology, Learning, and Performance Journal*, Vol. 19, No. 1, Spring 2001