

## The Comparative Study of the Nutrient Intake of Pregnant Women Attending Antenatal in Hospital and Traditional Birth Home in Owo, Ondo State, Nigeria.

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**Abstract:** Pregnant women have been widely recognized as a vulnerable group from health point of view. They need more food than normal person for the proper nourishment of the growing fetus. The study was carried out among 150 pregnant women of whom 80 of them attended antenatal clinic in the general hospital while 70 used the traditional birth home for antenatal. A structured questionnaire was used for data collection. Dietary information was obtained using food frequency and 24-hour dietary recall. The result showed that 56.4% of the women consumed cereals more than and 10.0% took it once in a day, 37.2% admitted the consumption of legume once 5.1% consumed it twice in a day. The mean nutrient intake of the respondents showed that the intake of energy was 93% of the RDA, while protein was above the RDA (113%). However vitamin A, E, C and folic acid were 40%, 20%, 30% and 40% of RDA respectively. Also, intake of calcium and iron was found to be 36%, and 50% respectively. The nutrient comparison of the respondents showed that women from the general hospital were able to meet up with their energy, protein, and zinc as it was found to be 99%, 122%, and 100% respectively while the respondents from the traditional birth home showed poor nutrient consumption.

**Key words:** Pregnant women, food frequency, nutrients, traditional birth home.

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### I. Introduction

Pregnancy is the fertilization and development of one or more offspring, known as embryo or fetus, in a woman's uterus (Medicine Net, 2011). Nutrition is an important health determinate that can affect the course of pregnancy outcomes. Optimal nutrient intake during pregnancy is reflected not only in the improved health of the infant. Maternal diet during pregnancy need to provide energy and nutrients for the mother as well as for fetal growth (Mridula *et al* 2003). Poor maternal nutrition during pregnancy particularly during the third trimester is a major cause of low birth weight in developing countries (Agarwal, 1991).

Maternal nutrition and health is considered as the most important regulator of human fetal growth (Mdambi, 1992). A healthy mother can produce a healthy child. For women who are not well nourished, they are more likely to give birth to weak babies resulting in high infant mortality rate. A woman's normal nutritional requirement increases during pregnancy. Proper dietary balance is necessary to ensure sufficient energy intake for adequate growth of fetus without drawing on mother's own tissues to maintain her pregnancy. (Mridula *et al*, 2003)

The field of nutrition of pregnant women in rural area is sadly a much –neglected area of research. There is a dearth of literature on health and nutrition of pregnant women in rural area. Hence, the study was undertaken to know the nutrient intake of pregnant women attending General hospital and traditional birth home in Owo Local Government Area.

### II. Methodology

The study was carried out in a general hospital and one traditional birth home in Owo. A total of 150 pregnant women were purposively selected for the study in which 80 of them attend antenatal clinic in the traditional birth home for antenatal. A semi-structured questionnaire was used for data collection. The dietary assessment was carried out using 24hours dietary recall. The full and appropriate description of all foods eaten including drinks was recorded and converted to nutrients using Nutri survey (2007) software. The data collected was analyzed using statistical package for social sciences (SPSS) version 17. Frequency and percentages were generated and statistical significance was determined through T-test.

**III. Result And Discussion**

Table 1 also shows the average income of head of household which the range 20000 -29999. The highest income of the household between 10000 – 19999 with 31.9%.

**Table 1:Socioeconomic Information**

	GENERAL HOSPITAL		TBH	
	FREQ	%	FREQ	%
<b>HEAD OF HOUSE HOLD INCOME GENERAL</b>				
<10000	3	5.5	4	5.9
10000 -19999	7	12.7	20	29.4
20000 – 29999	7	12.7	30	44.1
30000 – 39999	11	20.0	13	19.1
40000 – 49999	11	20.0	1	1.5
>50000	16	29.1	-	-
<b>Total</b>	<b>55</b>	<b>100.0</b>	<b>68</b>	<b>100.0</b>
<b>INCOME OF PREGNANT WOMAN</b>				
<10000	14	20.3	50	71.4
10000 – 19999	22	31.9	14	19.7
20000 – 29999	17	24.6	6	8.5
30000 – 39999	11	15.9	-	-
40000 – 49999	5	7.2	-	-
<b>TOTAL</b>	<b>69</b>	<b>100.0</b>	<b>70</b>	<b>100.0</b>

Table 2 shows weekly consumption of foods from food groups. The table shows that most of the respondents (56.4%) consume cereals more than thrice. Also 37.2% of the respondents eat legumes once while 5.1% ate twice per day. For vegetable, 39.7 % ate more than thrice while 4.2% of the respondents claimed they don't eat vegetable at all. However, 53.8% of the respondents reported that they eat fruits more than thrice per week.

**Table 2:Food Frequency Table**

CEREAL	HOSPITAL		TBH	
	NO	%	NO	%
Once	13	16.7	7	10.0
Twice	17	21.8	20	28.6
Thrice	4	5.1	23	32.9
>Thrice	44	56.4	20	28.6
None	-	-	-	-
<b>Total</b>	<b>78</b>	<b>100.0</b>	<b>70</b>	<b>100.0</b>
<b>ROOTS&amp; TUBERS</b>				
Once	28	35.9	12	16.9
Twice	15	19.2	25	35.5
Thrice	10	12.8	22	31.0
>Thrice	20	25.6	11	15.5
None	-	6.4	1	1.4
<b>Total</b>	<b>78</b>	<b>100.0</b>	<b>70</b>	<b>100.0</b>
<b>LEGUMES</b>				
Once	29	37.2	19	26.8
Twice	4	5.1	21	29.6
Thrice	13	16.7	15	21.1
>Thrice	16	20.5	6	8.5
None	16	20.5	10	14.1
<b>Total</b>	<b>78</b>	<b>100.0</b>	<b>71</b>	<b>100.0</b>
<b>VEGETABLES</b>				
Once	14	17.9	16	22.5
Twice	14	17.9	20	28.2
Thrice	15	19.2	20	28.2
>Thrice	31	39.7	12	16.9
None	4	5.1	3	4.2

<b>Total</b>	78	100.0	71	100.0
<b>FRUITS</b>				
Once	7	9.0	7	9.9
Twice	10	12.8	17	23.9
Thrice	19	24.4	25	35.2
>Thrice	42	53.8	22	31.0
None	-	-	-	-
<b>Total</b>	78	100.0	71	100.0
<b>FISH /MEAT PRODUCT</b>				
Once	1	1.3	2	2.8
Twice	5	6.4	11	15.5
Thrice	10	12.8	29	40.8
>Thrice	62	79.5	29	40.8
<b>Total</b>	78	100.0	71	100.0
<b>FAT &amp; OIL</b>				
Once	6	7.7	6	8.5
Twice	9	11.5	15	21.1
Thrice	9	11.5	29	40.8
>Thrice	54	69.2	21	29.6
None				
<b>Total</b>	78	100.0	71	100.0
<b>BEVERAGEES</b>				
Once	35	44.9	32	45.7
Twice	6	7.7	11	15.7
Thrice	3	3.8	7	10.0
>Thrice	28	35.9	6	8.6
None	6	7.7	14	20.0
<b>Total</b>	78	100.0	70	100.0

Table 3 reveals that the intake of energy was 93% of the RDA, while the protein was above the RDA (113%) However vitamins A, E, C, and folic acid were found to be lower than the RDA as intake were 40%, 20%, 40%, respectively. Also vitamin B1, B2, B6, requirements were met. The mineral intake of the respondents showed that there was low consumption of calcium and iron as it was found to be 36%, 50%, respectively.

**Table3: The Mean Nutrient Intake of the Respondents**

<b>Nutrient Contents</b>	<b>Amount</b>	<b>Percentage RDA</b>
Energy(kcal)	1892.8	93
Protein (g)	67.8	113
Fat (g)	36.1	52
Carbohydrate (g)	304.3	10
Vitamin A (µg)	432.3	40
Vitamin. E (mg)	2.6	20
Vitamin.B1(mg)	1.0	85
Vitamin.B2(mg)	0.9	58
Vitamin. B6 (mg)	1.1	57
Total folic acid (µg)	241.3	40
Vitamin C (mg)	33.2	30
Calcium (mg)	364.6	3
Magnesium (mg)	224.6	75
Iron (mg)	15.0	50
Zinc (mg)	9.3	93

Table 4 Shows the comparison of the nutrient intake of the respondents attending both the general hospital and traditional birth home. There was significance in the intake of energy, carbohydrates, and iron. There was no significance in their protein, fat, vitamin A, vitamin, vitamin B1, vitamin B2, vitamin B6, folic acid, calcium, magnesium and zinc intake.

Table 4: Nutrient Comparison of the Intake of the Respondents

Nutrient Content	General Hospital		TBH		Sig
	AMOUNT	%RDA	AMOUNT	%RDA	
Energy(kcal)	2012.8	99	1739.4	85	.046
Protein (g)	73.3	122	61.0	101	.058
Fat (g)	44.2	64	25.7	37	.164
Carbohydrate (g)	321.3	111	282.7	97	.041
Vitamin. A (µg)	563.3	52	272.3	25	.216
Vitamin. E (mg)	3.7	28	1.2	9	.300
Vitamin .B1 (mg)	1.2	101	0.8	64	.126
Vitamin. B2 (mg)	1.1	72	0.6	41	.182
Vitamin .B6(mg)	1.2	61	1.0	51	.058
Total folic acid(µg)	224.5	37	262.7	44	.050
Vitamin. C ((mg)	32..4	29	34.1	31	.016
Calcium (mg)	432.2	43	278.2	28	.358
Iron (mg)	15.7	52	14.1	47	.034
Zinc (mg)	10.0	100	8.4	84	.55

#### IV. Discussion

Maternal diet during pregnancy needed to provide energy and nutrients for the mother as well as for fetal growth (Mridula *et al*, 2003) poor maternal nutrition pregnancy, particularly during the third trimester is a major cause of low birth weight in the developing countries (Agarwal, 1991).

This study showed that majority of the pregnant women(71.4%) earn less than 10000 naira per month and 8.5% of them even earned between 2000 and 2999 naira and studies have shown that socio-cultural factor such as income of the head of the household income ,income of pregnant woman and their food frequency could be the contributing factor to low nutrient intake during pregnancy since maternal nutrition and health is considered as the most important regulator of fetal growth (Mudambi, 1992) Poverty remains the major reason behind malnutrition all over the world with the developing world being the biggest victim (Wardlaw and Kessel, 2002). Also, available data from the 2003 National Demographic Health Survey (NDHS) showed that more than half of the Nigerian population, especially women and children, live in severe social deprivation, and many households are food insecure.

The main nutrient intake of pregnant woman reveals that the intake of energy was 93% of the RDA as the healthy Fetal development is dependent on the availability of adequate protein which provide the basic building blocks necessary for formation of enzymes, antibodies, muscle and collagen (NHANES, 2004). However, vitamin A, E, C and folic acid were found to be lower than the RDA as intake were found to be 40%, 20, and 40% respectively may be as a result of poor consumption of fruits and vegetables among the pregnant woman as many of the women complained that it purges them whenever they takes them, so they ate so little of them.

Since folic acid, vitamin B1, B2 and B6 were not met as they were found to be 85%, 58% 57% respectively, this is why it is compulsory for pregnant women to be given supplemental dose of multivitamin, folic acid and iron tablets in ante-natal clinics.. The mineral intake of the respondent showed low consumption of calcium and iron as it was found to be 36% and 50% respectively as these this was because the woman consumed little meats, fish and other sources of these nutrients and most of the woman don't take iron supplement especially those from traditional birth homes. However, respondents from the general hospital had access to supplemental iron, vitamin B complex, calcium and folic acid since the baby will draw from the mother's reserve (Prentice, 2009). Available evidence suggests that synthetic folic acid (found in supplements and fortified foods) is more effective at preventing neural tube defects than is food folate (IMNA, 2005). It is important that the women's store of several key nutrients such as Iron and Vitamin A be sufficient to allow for adequate maintenance of her nutritional status while providing optimal nutrient delivery to the fetus (World Bank, 2006). Poor iron intake will lead to poor mental development during fetal and early childhood (Killer *et al*, 2008 ) It was reported by Siega-Riz (2004) that adequate nutrient intake is essential for fetal growth and production of milk sufficient in both quantity and quality during pregnancy and lactation.

The nutrient comparison of the pregnant woman from the general hospital and from the traditional birth homes revealed that women ,who attended the general hospital were able to meet most of their nutrient intake this was because adequate care was given to them by mid wives and other health workers but those from the traditional birth homes were unable to meet RDA which might be due to poor counseling because most of the care givers were not adequately trained by licensed institutions and they believe more in traditional concoctions for delivery there by endangering the health and lives of the mothers and that of their unborn

babies. As nutrition is an important health determinate that can affect the course of pregnancy and pregnancy outcomes. Optimal nutrient intake during pregnancy is reflected not only in the improved health of the infant but also on that of the mother. Maternal diet during pregnancy needs to provide energy and nutrients for the mother as well as for fetal growth (Mridula *et al*, 2003).

## V. Conclusion

The result of the study showed poor nutrient intake among pregnant women attending the traditional birth home while the respondents from the hospital had better nutrient intake. Factors such as the demographical factors economic status of both the pregnant women and the head of house hold were identified as the contributing factors to poor nutrient intake among the pregnant women. Therefore, awareness of good dietary intake especially during pregnancy is necessary as these will help to promote good health of the mother and that of their fetus, thereby reducing pregnancy complications.

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