**Advances in Social Sciences Research Journal – Vol.1, No.6**
**Publication Date:** October 10, 2014
**DOI**:10.14738/assrj.16.436
Mensah. N. K. (2014); Knowledge in Nutrition among Pregnant Women in Apewosika, a Suburb of Cape Coast: A Nexus in Pregnancy Out. *Advances in Social Sciences Research Journal, 1*(6), 48-55

# Knowledge in Nutrition Among Pregnant Women in Apewosika, A Suburb of Cape Coast: A Nexus in Pregnancy Out

**Nathan Kobina Mensah**
Department of Vocational and Technical Education
University of Cape, Ghana
*natmen@yahoo.com*

## ABSTRACT

**The study sought to find out the knowledge of nutrition among pregnant women in Apewosiksa, a suburb of Cape Coast. A sample of forty (40) women was obtained through the snowball sampling method. The objectives of the study were to find out the level of knowledge in nutrition and also knowledge in nutrition as evidenced by their eating of balanced diets, changes in meals during pregnancy to reflect the demands of pregnancy, ages of pregnancy; eating of a balanced diet and also the sources of their knowledge on nutrition. It came to light that forty percent of them lacked adequate knowledge in nutrition, 17.5% had no knowledge of the consequences of inadequate nutrition on pregnancy. Forty percent were teenagers; 40% of the women ate a balanced diet. Their sources of knowledge on nutrition were mainly through school and ante-natal care (47.5%). Remarkably, none of the respondents obtained her knowledge in nutrition through television. From the study it was realized that generally their level of knowledge in nutrition was inadequate hence the need for nutrition education is paramount.**

## INTRODUCTION

Several nutrients have been shown to affect pregnancy outcomes, for example vitamin A plays important roles in reactions involved in cell differentiation. (Brown, Kraku, Murtaugh, Sharbaugh, Stang, 2005). However, excessive consumption of it could have teratogenic effects in humans (Worthington-Roberts & Williams, 1996). Status of vitamin C has been shown to affect the outcome of pregnancy. Since calcium metabolism increases during pregnancy, there is a necessity for an increase in its intakes. The amount of the mineral needed doubles to 19 micrograms per a day (Webb, Whitney & De Bruyne, 1999). Calcium is needed during pregnancy to promote adequate mineralization of foetal skeleton, teeth and the health of the mother (Wardlaw & Insel, 1996).

Folate deficiency could lead to neural tube defects, congenital malformations and pregnancy complications and decreases in red blood cells formation during pregnancy (Macphail, 2002). Zinc deficiency has been associated with complications of pregnancy as well as with growth retardation, congenital abnormalities and retarded neuro behavioural and immunological developments in the foetus (Black, 2001).

Severe iodine deficiency during pregnancy causes cretinism in babies. On the other hand, large amounts of iodine inhibit synthesis of thyroid hormones and surprisingly, it could lead to goiter; overzealous supplementation is the most common cause of iodine toxicity (Insel, Turner & Ross, 2003). Knowledge has been shown to impact positively on nutrition especially among socially disadvantaged groups where there is often a dearth of knowledge of the bare essentials of nutrition. (Perez-Escamilla, Hromi-Fiedler, Vega-Lopez, Milan & Segura-Perez, 2008; Barasi, 2003). Studies also point to the fact that almost all maternal deaths occur in

**Copyright** © Society for Science and Education, United Kingdom 

developing countries with more than half of these occurring in Sub-Sahara Africa (Chan, 2010). More than  of all maternal deaths occur in only six countries namely, India, Nigeria, Pakistan Afghanistan, Ethiopia, and Democratic Republic of Congo (Hogan, Foreman, Naghave, Ahu, Wang, Makela, Lopez, Lozano, Murray , 2008). Among all maternal deaths, 99% occur in the developing world (Say & Pattinson, 2008). The risk of a woman in a developing country dying as a result of pregnancy or childbirth during their lifetime is about one in six as compared to one in thirty thousand in Northern Europe (Michael & Moodley, 2002).

Pregnancy is a time of immense changes in the body of a woman and also the developing foetus (Whitney & Rolfes, 2002). This often means an increase in the intake of certain nutrients and a need for the woman to decrease or abstain from consumption of certain foods and beverages which could negatively affect the developing foetus. Hence, the need for the expectant mother to be knowledgeable in certain basics of nutrition related to her health and foetus so that she could make informed choices that will impact positively on the pregnancy.

Anemia during pregnancy has been recognized as one of the major health and nutrition problems among pregnant women in the Sub-Saharan Africa (Leslie 1992; Olu Oduntan & Odunlami, 1975). The fact that it is not safe to go into labour with anaemia is well documented. (Kidanto, Magren, Landmark, Mussawe, Nystrom 2009) have also written on the negative effects of anaemia during pregnancy. Factors contributing to anaemia are poor dietary practices during pregnancy due to socio-cultural food taboos, infections, mal-absorption of nutrients and malaria (Leslie, Essaman & Ciemans, 1997). The importance of preventing anaemia during pregnancy cannot be over emphasized since it exacerbates a lot of the problems of delivery. Labour involves the expenditure of energy and its attendant use of oxygen; hence the importance of red blood cells cannot be overstated. Severe iron-deficiency anaemia may lead to pre-term delivery, maternal complication or death during delivery and increased risk to the foetus during the first weeks of gestation. Food sources of iron include vegetables such as spinach, broccoli, whole bread, soybeans, inter alia. Anti-nutritional factors include tea, coffee and other caffeinated beverages and coffee. From the above it could be seen that knowledge in nutrition is a very important nexus in good pregnancy outcomes.

Chan (2010) has stated that most maternal deaths are avoidable as the health care solutions to prevent or mange them are well known. However, maternal deaths is relatively high in Sub-Saharan Africa, therefore, the need to know the reason for such paucity of knowledge in certain communities notably, Apewosika.

The objectives of the study were to find out the knowledge in foods as regards nutrition of pregnant women in Apewosika. It was specifically meant to deduce the level of knowledge as evidenced by their application of knowledge in their ages of pregnancy, eating of balanced diets, changes in meals that reflect the unique demands of pregnancy and how this could be used to help in nutrition education. The purpose of the study was to find out the levels of knowledge in nutrition in the community with a view to contributing towards an amelioration of the problems of maternal mortality and morbidity.

**Research questions:**

The following research questions guided the study:

1. What is the level of knowledge in nutrition among the pregnant women regarding the food groups?
2. How is the level of knowledge in nutrition reflected in the ages of pregnant women?
3. How is the knowledge in nutrition reflected in their eating of balanced diets?
4. What are the sources of the pregnant women knowledge in nutrition?

**Copyright** © Society for Science and Education, United Kingdom 

## METHODOLOGY

The population for the study was pregnant women in Apewosika village which is completely surrounded by the University of Cape Coast campus. In all, forty women were sampled through the snow-ball sampling technique (Goodman, 1961). The research instrument used was questionnaire. The illiterates who could not complete the questionnaire were aided by interpreting it to their understanding.

## RESULTS AND DISCUSION

**Table 1: Knowledge of the Important Nutrients Obtained from the Six Food Groups.**

| Answers | Percentage (%) |
|---|---|
| **Vitamins, minerals, fats and oils, proteins and carbohydrates** | 60 |
| **Formation of blood, energy** | 5 |
| **Starch, formation of blood, fats and oils** | 5 |
| **No response** | 30 |

Source: Field data, 2011

From Table 1, it could be realized that a large percentage (60%) had some idea about nutrients obtained from food. It is to be noted that 40% had no knowledge or incomplete knowledge about nutrients obtained from food.

**Table 2: Knowledge about the Consequences of Lack of Nutrients in Diet**

| Answers | Percentage (%) |
|---|---|
| **No** | 10.0 |
| **Yes** | 72.5 |
| **No answer** | 7 |
| **Total** | 100 |

Source: Field data 2011

When the pregnant women were asked if they knew the effects lack of nutrients in their diet had on their health and the development of the fetuses, Table 1 shows that though the majority (72.5%) of them answered Yes, it is noteworthy that those who did not know and those who did not give any answer constituted 17.5%. The most common nutrient deficiency among pregnant women is iron. A woman tends to have low stores to begin with but during pregnancy, her iron needs surges. In addition to the iron needed to build her red blood cells, the foetus needs foliate as well (Kolander, Ballard & Chandler, 1999). The implication of foliate deficiency for the developing foetus could be devastating as it could result in neural tube defect (Truswell & Milne, 2002).

**Table 3: How often they Ate a Balanced Diet**

| Responses | Frequency N = 40 | Percentage (%) |
|---|---|---|
| Very often | 16 | 40.0 |
| Often | 11 | 27.5 |
| Hardly | 9 | 22.5 |
| No response | 4 | 10.0 |

Source: Field data, 2011

A balanced diet is one which contains different types of foods in such quantities and proportion that the macronutrient and micronutrient needs are adequately met (Srilakshmi, 2009). Hence, a pregnant woman's eating of a balanced meal is crucial. Thus, for the 23% who hardly ate a balanced meal and some of the ten percent (10%) who gave no response to such a crucial questions, probably because they did not have knowledge about a balanced diet; it could have negative effects on their health and pregnancy outcomes (Bayol, Simbi, Bertland, Stickland, 2009). From this, it can be inferred that such pregnant women (the 23%) are likely to suffer from the diet related diseases which account for a large percentage of maternal mortality in Ghana as indicated by aboagye and Akosa (1996).

**Table 4: Meals during pregnancy being different from the normal meals**

| Answers | Frequency N = 40 | Percentage (%) |
|---|---|---|
| No | 14 | 35 |
| Yes | 22 | 55 |
| No answer | 4 | 10 |

Source: Field data, 2011

Table 4 shows that 14(35%) of the women did not change their meals towards a more balanced diet during pregnancy. This is a striking observation since a pregnant woman's diet should of necessity change to make it more nutrients- densed so that she could satisfy the full complement of nutrients. Also, there are some nutrients which are crucial for successful pregnancy outcomes which must be met. For example protein needs are altered (Worthington-Robert & Williams, 1996; Williams, 1981). Vitamin A deficiency could produce malformation of foetal lungs, urinary tract and heart ailments. Folate is crucial for a positive pregnancy outcome since it is essential in the synthesis of DNA. Hence both foetal growth and maternal health depend on an ample supply of folates. Lack of adequate folate could lead to megaloblasticanaemia. As regards vitamin C, particular care must be exercised to ensure that the extra amount of it needed during pregnancy is met. However, large doses of supplementary vitamin C may adversely influence foetal metabolism which could lead to scurvy during the neonatal period.

Calcium is needed during pregnancy to promote adequate mineralization of the foetal skeleton and teeth and the health of the expectant mother. The third trimester is the time when it is most needed since foetal skeletal bones grow most rapidly during this period. However, extra calcium intake, as it is recommended, should start immediately after conception. Dairy products are good sources of calcium hence, especially skimmed milk, and green leafy vegetables are recommended (Mader, 2000).

**Table 5: Age of Respondents**

| Age | Percentage (%) |
|---|---|
| 16 – 20 | 40 |
| 21 – 25 | 15 |
| 26 – 30 | 20 |
| 31 – 35 | 20 |
| 36 – 40 | 5 |

Source: Field data, 2011

The majority of respondents (40%) as shown in Table 5 were in the age bracket 16-20 who were adolescents or teenagers. It has been noted that for adolescent pregnancies that are carried to term, nutritional considerations are paramount; since these needs rise considerably

during pregnancy, particularly in pregnant adolescents (Dwyer, 1996). Adequate energy, calcium and iron are of particular concern because intakes before pregnancy may have been low and needs increase as pregnancy proceeds. Child bearing in very young adolescent who may still be growing themselves and who find themselves in poor socio-economic environments and circumstances is fraught with nutritional risks. Hence, such pregnant mothers' knowledge in nutrition to a large extent should be reflected in their age of pregnancy. Young women who are poor or otherwise disadvantaged and conceive out of wedlock appear to be at particular risk of poor pregnancy outcomes (Dwyer, 1996). One factor that may have contributed to the high percentage of teenage pregnancy is the fact that Apewosika is virtually surrounded by the University of Cape Coast which has a large volume of young virile bachelors.

The percentage of pregnancies above the age 35 was expectedly low (5%). Though such mothers may be emotionally and psychologically prepared for pregnancy, there are contending factors that militate against pregnancy within such an age bracket. There is also a decline in both the quality and viability of eggs produced after age thirty five; and statistically the chances of having a baby with birth defects rises after this age; Down syndrome is the most commonly encountered genetically abnormal condition. Those who were pregnant within the age bracket 21 – 30 constituted thirty five percent and twenty percent were in the age bracket 31 – 35. Also, the physical ability of these women vis-à-vis delivery is lower than what pertains in their twenties. However, such women tend to be more conscientious about following medical advice and more psychologically mature than are some younger women (Donatelle & Davis, 2000).

The nutrition requirements of adolescents are influenced primarily by the normal events of puberty and simultaneous spurts of growth. Puberty is an intensely anabolic period which results in changes in the composition of the body. It is a period of development of physiological, psychosocial and cognitive levels all of which impact on the nutritional needs of the adolescents. The teenager is a rapidly changing biological organism with very individual growth patterns, biological make up and psychosocial development. It is the only time in extra-uterine life when growth velocity increases. The growth spurt contributes to 15% of adult height and 50% of the adult weight. Hence the role of nutrition at this stage of a human's development cannot be over emphasized (Gong & Heald, 1988).However, studies show that adolescents are more likely to skip meals and engage in dieting which could lead to nutrient intakes that are inadequate to support pregnancy (Brown et al., 2005).

The onset of pubescence may with its concomitant changes give them a deceptive semblance of adulthood. Some adolescents are driven to experiment with drugs and sex, because of their relative inexperience, naivety and even gullibility. This has often resulted in grave social disadvantages and consequences. Studies show that in the United States thirty percent (30%) of adult births are non-marital, in contrast approximately seventy two percent (72%) of pregnant teens were unmarried in 1993. Marriage between adolescents is usually unsafe: approximately 70% end in early divorce. Adolescent mothers have been observed to be less sensitive, less accepting and less cooperative with their children than older adults. They are more likely to have low paying jobs, lower status jobs, and experiment with drugs and be impoverished adults (Slap & Jablow, 1994). Post neonatal morbidity and mortality are particularly high in infants born to mothers younger than 18 years and pregnant teenagers experience considerable obstetric risk and complications.

Furthermore, their infants are more likely to suffer from Sudden Infant Syndrome. Their pregnancies could be complicated by such factors as, decreased family support, family

member abuse, Sexually Transmitted Diseases (STDs), and urinary tract infections (Greydanus, 1997). Teenage pregnancy is still an issue in Ghana. At the BECE examination conducted in 2009, some pregnant teenagers were candidates. It was said that such teenagers fail to undergo good nutrition (Ghana Dot.com, May 7 2009).

## MAJOR OCCUPATION OF RESPONDENTS

One's ability to afford nutritious meals is determined to a large extent by one's occupation since it determines ones purchasing power. Expectedly, 45% of the respondents were fishmongers. This is because Apewosika is a community close to the sea. Twenty three percent were petty traders, five percent were hair dressers, 10% were gari sellers and 18% of them were unemployed. All these are small businesses and are, more often than not, likely to result in small earnings. These are recipes for poverty, especially, during pregnancies when the pregnant woman's strength and mobility are diminished and they are even more inclined to be ill. It is also noteworthy that about 18% of the respondents were unemployed. In such communities, it is the norm rather than the exception that both parents, even when they are married, work to supplement the income. It, therefore, becomes more imperative for a single woman expecting a child to work because of the meager incomes. Hence, these results will certainly have a knock-on effect on the nutrition status of the expectant mothers, foetuses and pregnancy outcomes. They may not necessarily lead to deaths but could have implications for morbidity, physical and mental development of the child. Child bearing imposes more needs on the expectant mother and the expectant father; hence it could perpetuate vicious cycles of poverty.

**Table 6: Sources of Information on Knowledge in Nutrition**

| Responses | Percentage (%) |
|---|---|
| School | 27.5 |
| Ante-natal | 20.0 |
| Other | 5.0 |
| Multiple responses | 37.5 |

Source: Field data, 2011

A list of options was given as regards the issue of sources of information on knowledge in nutrition which were; school, ante-natal, close relatives, friends and television as sources from which respondents obtained their knowledge in nutrition. None of the respondents chose close relatives, friends and television as sources from which they obtained knowledge in nutrition. Table 6 shows 28% of the respondents chose school as where they obtained information hence the need to intensify efforts at disseminating information at schools. Since teenage pregnancy is on the ascendency and there has been reported incidences in the news of pregnant candidates taking the B.E.C.E examinations and some even delivering their babies while writing certain papers, there is a need to equip them at that level with the requisite information.

## CONCLUSION AND RECOMMENDATION

It can be concluded from the study that knowledge in nutrition of the pregnant women is generally inadequate to support the demands of pregnancy. It is therefore recommended that nutrition education should be intensified in the community. Again, since antenatal was an important source of their information, nurses and doctors should also be aware of the fact that the information they give is a very important source from which the respondents obtain information. Hence, the need for nurses to intensify and simplify the information they disseminate so that most of the patients of such levels of education could understand and put the information to good use.

**Copyright** © Society for Science and Education, United Kingdom 

## References

Aboagye, A.B. & Akosa, A.B. (1996). An autopsy study of maternal death. *Ghana Medical Journal, 34*, 15-35.

Barasi, E.M. (2003). *Human nutrition a health perspective*. London: Arnold.

Bayol, S. A, Simbi, B. H., Bertland, J.A. Stickland, G. (2008). Offspring from mothers fed as "junk food" diet in pregnancy and lactation exhibit exacerbated adiposity that is more pronounced in females. *The Journal of Physiology*. *13,* 3219-3230.

Black, R. E. (2001). Micronutrients in pregnancy *British Journal of Nutrition* supplementary 193 –197.

Brown, T. E., Isaac, J. S., Krakue, U. B., Murtaugh, M. A. Sharbaugh, C., Stang, J., (2005). *Nutrition throughout the life cycle*. Wooldridge, N.H., Belmont, C.A.,: Thomson Wadsworth.

Chan, M. (2010). *Maternal death worldwide drop by third*. Retrieved from www.who.nt/media centre (news release/2012 maternal mortality 01000915cn/index.html

Donatelle, R. & Davis, L. G. (2000). *Access to health*, Boston: Allyn and Bacon.

Dwyer, J. T. (1996) Adolescence. In Ekhard, E.Z. & L.J. Jnr. Filer, (Eds). *Present Knowledge in nutrition*. (Pp 404 – 411). Washington, D.C.: ILS1 press. Gong, E.J. & Heald, E.P. Diet Nutrition and Adolescence in Shills, M.E. & Young, V.R.

(Eds) *Modern nutrition in health and disease* (7th Eds) pp. 969 – 981 Philadelphia: Lea & Febiger.

Goodman, L. A. (1961). Snow ball sampling. *Annals of mathematics statistics*. *32*, 1, 148 – 170.

Greydanus, D. E. (1997) Adolescence pregnancy and Abortion in Hoftman, A.D. and Greydanus, D.E. (Eds) *Adolescence medicine*, pp. 589 – 604

Hogan, M. C., Foreman, K. J., Naghave, M., Ahu, S. Y., Wang, M., Makela, S.M., Lopez, A.D. Lozano, R., Murray, C.J.L. (2008). Maternal, mortality for 181 countries 1980 – 2008; a systematic analysis of progress towards millennium development goals. *The lancet 375*, 9726, 1609 – 1638. Insel, P., Turner, R. E. & Ross, D. (2003). *Discovering nutrition*. Boston: Jones and Bartlett.

Kafatos, A.G., Vlachonkolis, I.G. & Codrington, C.A. (1989) Nutrition during pregnancy: the effects of an educational intervention programme in Greece. *The American Journal of Clinical Nutrition. 50,* 5970– 5979.

Kidanto, H. L., Magren, I., Landmark, G., Mussawe, S., Nystron, L. (2009). Advanced maternal ages as a risk factor caesarean delivery. *South African Medical Journal 99,* 2.

King, F. S. & Burgess, A. (1993). *Nutrition for developing countries* (2nd ed), Oxford University Press.

Kolander, C. A., Ballard, D. J., & Chandler, C.K. (1999). *Health issues for today and the future*. Boston: WCB McGraw-Hill.

Leslie, J. (1992). Women's lives and women's health using social science research to promote better health for women. *Journal of Women's Health*. *1* (4), 307 – 318,

Retired March 15, 2011 from http://unu.edu.unu press (food U 181 e/ch 2 html.

Leslie, Essaman, S. B. & Ciemans, E. (1997) Female nutritional status across the life span in Sub-Saharan African: causes and consequences. *Food nutrition*. *Bull. 18*, 44 – 55 retrieved March 15, 2011, from http//unu.edu.unu press/food/visie/ch.2htm.

Lindsay, H.A. (2000) Anaemia and iron deficiency: effects on pregnancy outcome. *The American Journal of Clinical Nutrition. 77*(5) 1284. Retrieved from www.ajch.org 8/8/12.

Macphail, P. (2002) Iron. In Mann, J. & Truswell, S. (Eds) *Essential of human nutrition* (2nd ed.) 145– 159: New York: Oxford University Press.

Mantel, G. D. & Moodley, J. (2002). Can a develop country's maternal mortality review be used as a gold standard. *Journal of Obstetrics, Gynaecology and reproductive Biology 100 (*2) 189 – 195.

Mader, S. S. (2002). *Human biology*. Boston: McGraw-Hill Company.

Olu Oduntan, S. & Odunlami, U.B. (1975) Maternal mortality in Western Nigeria. *Tropical and geographical medicine 3,* 313 – 316. Retrieved 26/7/12 from www.ncbinlm nih.gov/pubmed/1081290.

Perez-Escamilla Hroan – Fiedldler and Vega-Lopez (2008) Peer education Counselling in nutrition and health outcomes among Latinos. *The Journal of Nutrition Education and Behaviour. 40* (4) 208 -255.

Say, L. & Pattinson, R.C. (2008). *International encyclopaedia of public health*. New York: Academic Press.

Slap, G.B. & Jablow, N.M. (1944). *Teenage healthcare*. New York: Pocket books.

Srilaskmi, B. (2009). *Human Nutrition for B.Sc*. *Nursing students*. New Delhi: New age publishers.

Truswell, A. S. & Milne, R. (2002). The B vitamins in Mann, J. & Truswell, S. (Eds) *Essential of human nutrition* (2nd ed). New York: Oxford University Press.

Williams, S. R. (1981). *Nutrition and diet therapy* (4th ed.) New York: CV Mosby Company.

Worthington-Roberts & Williams, S.R. (1996) *Nutrition throughout the life cycle* (3rd ed) New York: McGraw-Hill.

Whitney, E.N. & Rolfes, S.R. (2002) *Understandings nutrition*. (9th ed) Belmont. C. A.: Wadworth Thomson.