
CONSTIPATION IN PREGNANCY AND THE EFFECT OF VEGETABLE CONSUMPTION IN DIFFERENT SOCIO-ECONOMIC CLASS IN WARRI, DELTA STATE

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ABSTRACT

Constipation is one of the most common complaints in pregnancy, and there can be many causes of pregnancy constipation. When a woman is pregnant, her body goes through a drastic hormonal change and she may become constipated very early in pregnancy (Anderson, 1984; Philip and Stuart, 2000). Another reason for pregnancy constipation is that during pregnancy the body tends to retain water which leads to harder and drier bowel content, thus resulting in constipation during pregnancy (Johansson, et al., 1989; Ashraf, et al., 1994). This research study was undertaken to establish by percentage the prevalence of constipation amongst pregnant women in Warri, Delta State, comparing prevalence of constipation between the upper class, middle class and lower class socio – economic pregnant women, as well as determining the effect of vegetable consumption on pregnancy constipation. The study was conducted using questionnaires. Constipation was determined based on the Rome I criteria for diagnosis of constipation, the criteria include straining during defecation, passage of hard stool, and sensation of blockage in the anus that makes it difficult to pass stool. Vegetable consumption rate was determined based on the frequency of vegetable consumption per week. The common vegetable consumed are pumpkin leaf (*Telfairia Occidentalis*), Afang (*Gnetum Africanus*), Water leaf (*Hydrophyllum Virginianum*) and Okra (*Abelmoschus Esculentus*). Two hundred (200) subjects were studied in each class. The result gotten from analysis of the questionnaires showed a prevalence of 30.00%, 32.50% and 35.50% for upper class, middle class and lower class of pregnant women respectively. The average prevalence of constipation amongst the pregnant women was found to be 32.67%. The rate of vegetable consumption amongst the upper class, middle class and lower class pregnant women was 56.50%, 50.00% and 52.50% respectively. The findings from the questionnaires analysis is indicative of the fact that commonly available vegetables in Nigeria like, Okro, Afang, Water leaf and Pumpkin are capable of improving peristaltic activity in the gut, thereby reducing the possibility of constipation in pregnancy.

KEY WORDS: *Constipation, Pregnancy, Vegetable, Socio-economic class.*

INTRODUCTION

The Oxford English dictionary, (2003) defined constipation as difficulty in emptying the bowel. Guyton and Hall, (2006) defined constipation as slow movement of feces through the large intestine, which is often associated with large quantities of dry, hard feces in the descending colon that accumulates because of over – absorption of fluid. Any pathology of the intestine that obstructs movement of intestinal contents such as, tumors, adhesions that constrict the intestines or ulcers can cause constipation. Constipation is a common complaint amongst pregnant women and can be uncomfortable and irritating (Anderson, 1984; Philip and Stuart, 2000). Pregnant women in particular need to be careful when it comes to

relieving constipation as some common over – the – counter laxatives or medications may not be safe for their developing baby (West, et al., 1992; Thukral and Wolf, 2006). According to the Mayo clinic guide, (2008) there are many reasons why women notice an increase in constipation when they are pregnant. Consumption of iron containing pills may contribute to constipation during pregnancy because iron tends to have a constipating effect in some women. Not getting as much physical exercise during pregnancy as a woman did before she got pregnant can contribute to constipation. This view was also reported by Meshkinpour, et al., (1998) and Peters, et al., (2001). Pressure on the intestine by the growing uterus and baby can result in constipation. Pregnancy hormones themselves can bring about constipation as they relax the muscles in the body, including the intestinal muscles (Bradley, et al., 2002). Not eating enough fiber containing food during pregnancy can cause constipation (Anderson, 1986). Also, stress and anxiety during pregnancy can cause constipation. Mayo clinic guide, (2008) suggested natural ways of managing constipation during pregnancy; avoid eating three large meals a day (binge), instead eat many small meals throughout the day so that the intestine would have less work to do at once. Drinking lots of water throughout the day helps rid the body of toxins. Do light exercises as this helps the working of the digestive system. Inclusion of ginger in the diet in addition to quelling morning sickness helps prevent bloating and constipation during pregnancy. Lastly, it is important to eat food that has rich fiber content and are juicy in nature. Vegetables and some fruits are high in fiber that can help relieve constipation during pregnancy. Dietary fibers in plants (vegetables) are resistant to human digestive enzymes. They have two main components; a soluble (viscous) fiber that is readily fermented in the colon into gases and physiologically active by-products, and an insoluble fiber that is metabolically inert absorbing water as it moves through the digestive system easing defecation (Papasouliotis et al., 1992; Anderson et al., 2009). It acts by changing the nature of the content of the gastrointestinal tract and by changing how other nutrients and chemicals are absorbed (Eastwood and Kritchevsky, 2005). Soluble fiber absorbs water to become a gelatinous, viscous substance and is fermented by bacteria in the digestive tract. Insoluble fiber has bulking action and is not fermented (Eastwood and Morris, 1992). Chemically, dietary fiber consists of non-starch polysaccharides such as arabinaxylans, cellulose, and many other plant components such as resistant dextrins, inulin, waxes, chitins pectins, betaglucans, and oligosaccharides (Eastwood and Morris, 1992).

MATERIALS AND METHOD

This study was conducted on three socio-economic classes of pregnant women resident in Warri, Delta State. The classes were distinguished on the basis of occupation and income of the subjects. The classes included the upper class, the middle class and the lower class pregnant women. For each of the classes, one hundred and fifty (150) subjects were investigated. On the whole therefore, the study involved four hundred and fifty (450) subjects. Constipation in this research was defined and determined based on the Rome 1 criteria for diagnosis of constipation. These criteria include straining during defecation, hard stool, and sensation of a blockage in the anus that makes it difficult to pass stool. Questionnaires comprising 12 items each were developed and distributed to the subjects.

Each subject was made to carefully fill in the questionnaires. After the filing in process, the questionnaires were retrieved and sorted out. Prevalence of constipation was expressed as the percentage of the number of constipated subjects in each class. Vegetable consumption rate was determined based on the frequency of vegetable meal consumed per week and was also expressed in percentage.

RESULTS

Table 1: Comparison of Prevalance of Constipation among the Upper Class, Middle Class and Lower Class Pregnant Women in Warri, Delta State

Socio-Economic Classes	Total Number of Subject Interviewed	Percentage of Constipated Pregnant Women	Percentage of Unconstipated Pregnant women
Upper Class	150	30.00%	70.00%
Middle Class	150	32.50%	67.50%
Lower Class	150	35.50%	64.50%

Mean Prevalence of Constipation = 32.67%

Table 2.1: Comparison of Vegetable Consumption Rate Among the Upper Class, Middle Class and Lower Class Pergnant Women in Warri, Delta state

Socio-Economic Classes	Percentage of Pregnant Women who often Eat Vegetables	percentage of Pregnant Women who do not often Eat Vegetables
Upper Class	58.50%	41.50%
Middle Class	50.50%	49.50%
LOWER CLASS	52.50%	47.50%

Table 2.2: Comparison of Vegetable Consumption rate among the Upper Class, Middle Class and Lower Class Pregnant Women in Warri, Delta State

Socio-ECONOMIC Classes	percentage of Constipated Pregnant Women who EAT Vegetable often	Percentage of Constipated Pregnant Women who do not Eat Vegetable often	Percentage of Unconstipated Pregnant Women who Eat Vegetable often	Percentage of Unconstipated Pregnant Women who do not Eat Vegetable often
Upper Class	34%	66%	71%	29%
Middle Class	24%	76%	65%	35%
Lower Class	40%	60%	54%	46%

Table 3: Comparison of Prevalence of Constipation with Vegetable Consumption Rate among the Upper Class, Middle Class and Lower Class Pregnant Women

Socio-Economic Classes	Prevalence of Constipation	Vegetable Consumption Rate
Upper Class	30.00%	58.50%
Middle Class	32.50%	50.50%
Low Class	35.50%	52.50%

DISCUSSION

Research has shown that dietary fiber may benefit health in several different ways. Lignin and probably related materials that are resistant to enzymatic degradation diminish the nutritional value of foods (Boerjan, et al., 2003). A dietary fiber in vegetables and other plant food has been found to have the following functions and benefits; it increases food volume without increasing caloric content, providing satiety, this may reduce appetite (Tygat, et al., 2003). It attracts water and form a viscous gel during digestion, showing the emptying of the stomach and intestinal transit, shielding carbohydrates from enzymes, and delaying absorption of glucose, this lowers variance in blood sugar levels (Gropper, et al., 2008). To lowers total and LDL cholesterol, this reduces risk of cardiovascular disease. It regulates blood sugar, and this may reduce glucose and insulin levels in diabetic patients and may lower risk of diabetes (Food and Nutrition Board, 2005). It balances intestinal PH (Spiller, et al., 2001), and stimulates intestinal fermentation production of short-chain fatty acids. This may reduce risk of colorectal cancer (Alberts, et al., 2000). It speeds the passage of food s through the digestive system, thereby facilitating regular defecation. It adds bulk to the stool, and alleviates constipation. Constipation is a common complaint among pregnant women and can be uncomfortable and irritating. Pregnant women in particular need to be careful when it comes to use of over-the –counter laxatives as these may be unsafe for the developing baby. The result of this study shows that up to one – third ($\frac{1}{3}$) of the subjects experienced constipation in pregnancy. Amongst the socio – economic class considered, the highest prevalence of constipation was observed among the lower class subjects, the upper class subjects showed the lowest prevalence of constipation. The prevalence of constipation of the middle class fell in between the upper and lower class (Table 1). But as can be observed in (Table 3), the women in the middle class rate of vegetable consumption were lower than those of the women in the lower class, yet the prevalence of constipation amongst the women in the lower class was higher. Some of the other reasons given why women notice an increase in constipation when pregnant in the Mayo clinic guide, (2008), like; doing regular light exercises, drinking lots of water daily, not eating binge meals and additional intake of dietary fibers in the form of fruits may have played a role in this observation trend. The average prevalence of constipation observed in this study of 32.67%, is higher than that reported by Jewell, et al (2007), who reported constipation prevalence among pregnant women of 12.00%. Anderson, (1984) also reported a constipation prevalence among pregnant women in London of about 38.00%. The different in the

prevalence of constipation among the three socio – economic class in this study has been shown to have a relationship with the rate of vegetable consumption in the classes, amongst other factors. This claim is supported by the study done by Derbyshire et al, (2006), who linked constipation in pregnancy to low fluid and fiber intake. It was also supported by Mauro, et al, (2008), who stated that increased dietary fiber intake leads to decrease colonic transit time and passage of bulkier stool. Thus, it has been established that vegetable consumption plays a positive role in the peristaltic functional movement in the gastrointestinal tract. Therefore, considering the high prevalence of constipation in pregnancy resulting from hormonal changes and other factors mentioned, and the probable side – effect that can follow intake of laxative to both mother and the developing baby, the consumption of vegetables especially during pregnancy should be encouraged.

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