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Nutritional attitudes of Breastfeeding Mothers in, Dominican Republic: Case study of Mothers attending the Hospital Ricardo Limardo

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Abstract

Maternal nutrition is essential from conception and throughout pregnancy as it is a critical factor in child survival, growth and development. Many breastfeeding mothers do not have adequate knowledge of causes, complications, management and preventive measures of nutritional imbalances during pregnancy, which is responsible for the high prevalence of poor maternal nutritional status. The study sought to establish the attitude and practices among breastfeeding mothers attending Hospital Ricardo Limardo in Dominican Republic. This was a descriptive cross-sectional study targeting a sample of 286 breastfeeding women. Data collection was carried out using structured questionnaires and analyzed using IBM-SPSS version 25 of 2015 software. Breastfeeding mothers had positive attitude towards nutrition. Majority of breastfeeding women were positive towards antenatal check-up during pregnancy. Majority of them also felt that skipping meals among breastfeeding mothers affects their health. The study also concluded that breastfeeding mothers had positive attitude towards nutrition and were willing to consume food that was healthy for them and to the child. The study recommends for the need of subsidizing supplements and nutrients sold in the dispensaries and health centers so that breastfeeding women from low income households can afford them. Subsidizing of supplements and nutrients can be done by government by reducing VAT taxes on these products. It is also recommended that breastfeeding women should be encouraged to be buying foods rich in iron, calcium and folic acid nutrients while avoiding chuck foods that may result to abnormal weight gain for both the mother and the baby.

Keywords: *Nutritional attitudes, breastfeeding Mothers, Hospital Ricardo Limardo, Dominican Republic*

1. Introduction

Micronutrient deficiencies, including vitamin A deficiency, pose serious health problems for breastfeeding mothers in developing countries like Dominican Republic (Fay, et al., 2020). Eating well during pregnancy means doing more than simply increase how much the mother eats. The mother must also consider what she eats. The ability of the mother to provide nutrients and oxygen for her baby is a critical factor for fetal health and its survival (Durrant, et al., 2015). Failure in supplying the adequate amount of nutrients to meet fetal demand can lead to fetal malnutrition. The fetus responds and adapts to under nutrition but by doing so it permanently alters the structure and function of the body. Maternal over nutrition also has long-lasting and detrimental effects on the health of the child (Lassi et al, 2013).

Malnutrition is one of the most serious health problems affecting children and their mothers in Kenya. Undernourished mothers face greater risks during pregnancy and childbirth, and their children set off on a weaker developmental path, both physically and mentally (Razik, 2018). Undernourished children have lower resistance to infection and are more likely to die from common childhood diseases such as diarrheal diseases and respiratory infections (Meacham, et al., 2019). Those who survive may be locked into a vicious cycle of recurring sickness and faltering growth, often with irreversible damage to their cognitive and social development. Malnutrition prevents individuals and even the whole country from achieving full potential, and is closely related with survival, poverty and development (WHO, 2017).

2. Literature Review

Fay, et al. (2020) explored the factors related to subsequent adolescent pregnancy in the Dominican Republic. A survey of demographic items and a sexual and obstetrical history was administered to 50 adolescents with subsequent pregnancies in La Romana, Dominican Republic. Adolescents with subsequent pregnancies were dependent on partners in the form of living conditions and marriage, economic dependence and unemployment, and lack of education.

Casilang, et al. (2020) investigated the perceptions and attitudes toward mobile health in development of an exclusive breastfeeding Tool: Focus Group Study with Caregivers and Health Promoters in the Dominican Republic. Focus groups were conducted with caregivers and community health promoters to identify the use, attitudes, perceptions, and acceptability of mHealth as well as barriers to exclusive breastfeeding. Barriers to mHealth use included the cost of internet service, privacy concerns, and perceived credibility of information sources.

In Syria, 75% of the studied population had a positive attitude towards antenatal clinic services, maternal and infant nutrition whereas 25% had a negative attitude. This finding can be promising for the future, especially that almost all participants (90%) found it crucial to seek antenatal care. Improving services in antenatal clinics, including nutrition counseling, may improve nutritional attitudes among this vulnerable population.

In a research conducted in Norway, the researcher observed three groups with different patterns: women who considered the pregnancy as a reason to adopt healthy eating behavior also over time (7 participants); women who tried to eat healthy only during their pregnancy (6 participants) and women who perceived pregnancy as a ‘time-off’ from eating healthily (3 participants). Other participants mentioned weight management as a motivation for eating more healthily, both in pregnancy and after giving birth.

Majority (86.9%) of breastfeeding mothers in Lagos, Nigeria had good attitude towards good nutrition. About one-third of the respondents (36.6%) felt preparing their own food is time-consuming and (21.3%) of the respondents would prefer to buy food than cook their food. Over half of the respondents (59.4%) agreed that vegetables did not have to be overcooked. Less than one –third (28.7%) felt they shouldn't eat foods like eggs and snail when they get pregnant and a majority (84.8%) felt it was important to take folic acid and iron when they get pregnant. (Ooreoluwa Fasola et al, 2018)

Over 80% of the respondents took folic acid, iron and increased the amount of fruits and increased the amount of fruits and vegetables during pregnancy while 43.6% avoided eggs, fish, meat and chocolate beverage because of taboos, 39.1% took herbal concoctions and 16.7% took alcohol. There was statistically significant association between age, highest level of education and their knowledge of good nutrition. There was also statistically significant association between highest level of education and their attitude towards good nutrition. Their knowledge was positively associated with their attitude towards good nutrition. (Ooreoluwa Fasola et al, 2018).

According to the study, ANC clinic visits were positively related to nutritional attitudes among the pregnant women. The study recommended greater emphasis on program implementation of health and nutrition counselling to ensure effective uptake of health and nutrition knowledge, and improved dietary and food consumption attitudes of the breastfeeding mothers.

3. Material and Methods

This study was a descriptive cross-sectional study utilizing the quantitative approach. The design would enable the researcher answer the research questions. The study design was selected because it will aid in rapid data collection and it is cost effective. The study population was 2000 breastfeeding mothers in Hospital Ricardo Limardo' Dominican Republic. Data was collected using structured interviewer administered questionnaires. Data collected during the study was entered and verified in a Microsoft Excel program. It was then transferred and analyzed using IBM-SPSS version 25 of 2015 software. Measures of central tendency and dispersion were used to analyze data. Results were presented in tables and charts.

4. Results and Discussion

4.1 Demographic characteristics of breastfeeding mothers

A total of 286 respondents were sampled to participate in the study. Questionnaires were submitted and analyzed. Only 232 questionnaires were properly filled and returned representing 81.1% response rate. Majority of the breastfeeding mothers had their Last Menstrual Period (LMP) in late 2019 and early 2020 and their estimated due date (EDD) was between August 2020 and November 2020. It was also noted that most of the women were in parity [2+0 G 3], [3+1 G 5], [1+0 G 2], [2+0 G 3], [2+0 G 3], [0+0 G 1], [3+0 G 4], [2+0 G 3], [2+0 G 3], [4+1 G 6], [2+0 G 3], [2+0 G 3]. Table 1 shows the demographic characteristics of breastfeeding mothers and husbands.

Table 1: Demographic characteristics

Demographic characteristics	Mothers	Husbands
Educational attainment		
Intermediate level of education	37.10%	25.90%
high school	26.30%	17.70%
primary	17.20%	19.40%
degree	14.70%	21.60%
illiterate	4.30%	3.00%
professional career	0.40%	4.70%
Age of breastfeeding mothers in years	**Age in years**	-
Average age	33.28 years	-
Youngest	19 years	-
Oldest	44 years	-

It was also established that the average age of the breastfeeding mothers was 33.28 years with youngest breastfeeding mother being 19 years old and oldest being 44 years old. In terms of educational attainment, most 37.1% of the breastfeeding women had Intermediate level of education, 26.3% high school level of education, 17.2% primary, 14.7% degree, 4.3% illiterate and 0.4% some level of professional career. For husbands, 25.9% had Intermediate level of education, 21.6% degree, 17.7% high school, 19.4% primary, 7.8% middle school, 4.7% professional courses and 3.0% illiterate.

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Volume 4||Issue 3||Page 1-12 ||November||2021|
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4.2 Attitude of Breastfeeding Mothers towards Nutrition

The study sought to describe the level of nutritional attitude among breastfeeding mothers attending Hospital Ricardo Limardo in Dominican Republic. Attitude of breastfeeding Mothers towards Nutrition was rated as "favorable attitude" for mean response of ≤2.4 and "unfavorable" for mean response ≥ 3.5. The results are presented in Table 2.

Table 2: Attitude of Breastfeeding Mothers towards Nutrition

Attitude of breastfeeding Mothers towards Nutrition	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	SD
Antenatal check-up is necessary for women after becoming pregnant	[119,51.3%]	[91,39.2%]	[5,2.2%]	[5,2.2%]	[12,5.2%]	1.7	1.0
Skipping a main meal every day will not affect the pregnant woman's health	[24,10.3%]	[5,2.2%]	[15,6.5%]	[94,40.5%]	[94,40.5%]	4.0	1.2
Preparing meals with iron-rich foods such as beef, chicken or fish is necessary	[87,37.5%]	[136,58.6%]	[2,0.9%]	[6,2.6%]	[1,0.4%]	1.7	0.7
Antenatal booking should be done before the 3rd month of pregnancy	[88,37.9%]	[119,51.3%]	[8,3.4%]	[13,5.6%]	[4,1.7%]	1.8	0.9
Screening of blood for infections (HIV, HBV, etc.) should be carried out during antenatal check-up	[81,34.9%]	[129,55.6%]	[2,0.9%]	[16,6.9%]	[4,1.7%]	1.8	0.9
Blood pressure should be checked regularly during pregnancy	[86,37.1%]	[121,52.2%]	[2,0.9%]	[12,5.2%]	[11,4.7%]	1.9	1.0
Should iron supplements be used on daily basis during pregnancy	[73,31.5%]	[123,53.0%]	[9,3.9%]	[17,7.3%]	[10,4.3%]	2.0	1.0
Supplementation of iron and folic acid are good for the mother and fetus	[84,36.2%]	[121,52.2%]	[4,1.7%]	[15,6.5%]	[8,3.4%]	1.9	1.0
Pregnant women should change dietary habit as advised by doctor	[78,33.6%]	[123,53.0%]	[5,2.2%]	[13,5.6%]	[13,5.6%]	2.0	1.0
Smoking does not cause any harm to the fetus	[19,8.2%]	[18,7.8%]	[2,0.9%]	[85,36.6%]	[108,46.6%]	4.1	1.2
Alcohol consumption during pregnancy is good for fetus	[20,8.6%]	[16,6.9%]	[2,0.9%]	[86,37.1%]	[108,46.6%]	4.1	1.2

Therefore, the results in the table above (2) shows that majority of the breastfeeding mothers 170 (73%) had a favorable attitude and 62 (27%) had unfavorable attitude. The results in Table 4.3 showed that majority of breastfeeding women with mean response of 1.7 and standard Deviation of 1.0 agreed that antenatal check-up is necessary for women after becoming pregnant. Majority of the breastfeeding mothers did not agree that skipping a main meal every day will not affect the pregnant woman's health (mean response of 4.0 and standard deviation of 1.2) implying that skipping meals among breastfeeding mothers affects their health. Results also showed that majority of breastfeeding mothers agreed that preparing meals with iron-rich foods such as beef, chicken or fish is necessary with mean response of 1.7 and standard deviation of 0.7. It was also found that majority of breastfeeding women agreed that antenatal booking should be done before the 3rd month of pregnancy (mean response=1.8, SD=0.9) implying that antenatal care services among pregnant women is critical.

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Stratford Peer Reviewed Journals and Book Publishing
Journal of Medicine, Nursing & Public Health
Volume 4||Issue 3||Page 1-12 ||November||2021|
Email: info@stratfordjournals.org ISSN: 2706-6606

The results of the study indicated that majority of breastfeeding women agreed that screening of blood for infections (HIV, HBV, etc.) should be carried out during antenatal check-up as indicated by mean response of 1.8 and standard deviation of 1.8. Majority of the breastfeeding mothers agreed that blood pressure should be checked regularly during pregnancy as shown by mean response of 1.9 and standard deviation of 1.0. The results in the table above showed that majority of breastfeeding women were agreeing that iron supplements be used on daily basis during pregnancy with mean response of 2.0 and standard deviation of 1.0. Results also showed that majority of the breastfeeding women were agreeing that supplementation of iron and folic acid are good for the mother and fetus as indicated by mean response of 1.9 and standard deviation of 1.0. Responses from breastfeeding women also showed that majority were agreeing that pregnant women should change dietary habit as advised by doctor with mean response of 2.0 and standard deviation of 1.0.

Result findings also indicated that majority of the breastfeeding mothers disagreed that smoking does not cause any harm to the fetus with mean response of 4.1 and standard deviation of 1.2. It was also found that majority of the breastfeeding mothers disagreed that alcohol consumption during pregnancy is good for fetus with mean response of 4.1 and standard deviation of 1.2. The study also sought to understand the frequency breastfeeding mothers miss taking iron and folate tablets. The results are presented in Figure 1.

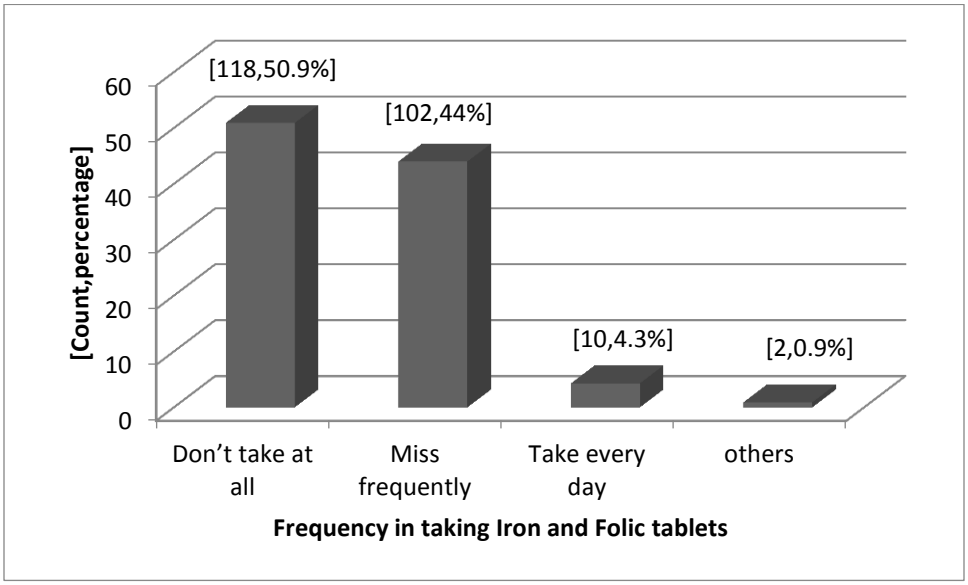

Figure 1: Frequency in taking Iron and Folic tablets

Results in Figure 1 showed that majority 50.9% of the breastfeeding mothers don't take iron and folic acid at all while 44% frequently miss taking them. Only 4.3% of the breastfeeding mothers take iron and folic acid daily. Pregnant women in areas of high prevalence of malnutrition should routinely receive iron and folate supplements, together with appropriate dietary advice, to prevent anemia. Where the prevalence of anemia in pregnant women is high (40% or more), supplementation should continue for three months in the postpartum period. World Health Organization advocated that pregnant women should be given a standard dose of 60 mg iron + 400 µg folic acid daily for 6 months or, if 6 months of treatment cannot be achieved during the pregnancy, either continue supplementation during the postpartum period or increase the dosage

Stratford Peer Reviewed Journals and Book Publishing
Journal of Medicine, Nursing & Public Health
Volume 4||Issue 3||Page 1-12 ||November||2021|
Email: info@stratfordjournals.org ISSN: 2706-6606

to 120 mg iron during pregnancy. Further, the study sought to know what breastfeeding women do in case they encounter any problem during pregnancy. The results of the investigation are presenting in Figure 2.

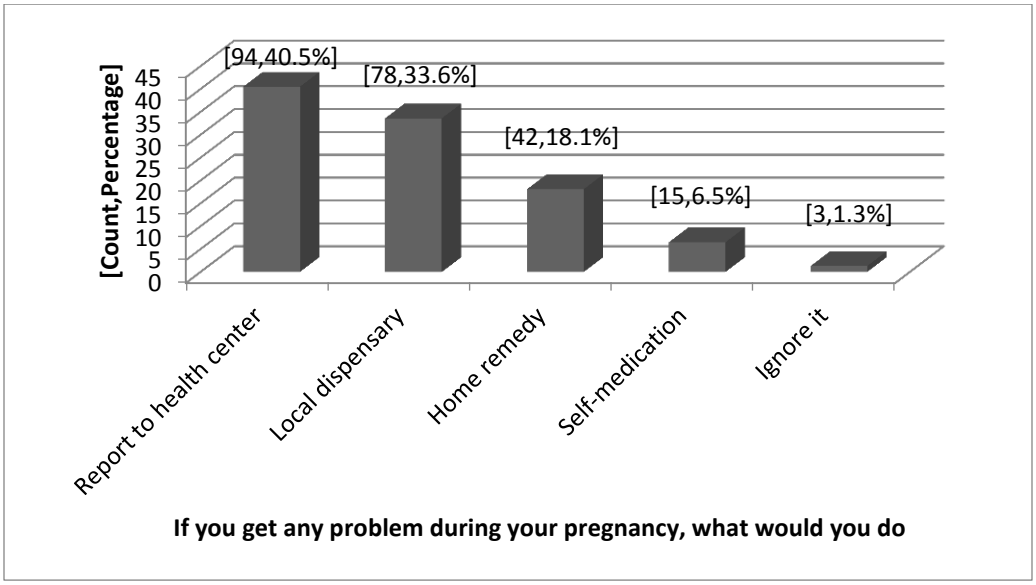

Figure 2: Action taken in case of any problem during pregnancy

Results in figure above showed that most 40.5% of breastfeeding mothers said they would report to health center in case of any problem during pregnancy, 33.6% visit local dispensary, 18.1% resort to home remedy, 6.5% self-medication while 1.3% ignore. Pregnancy is a very delicate situation and women must seek assistance in case they feel any problem in their health well-being. Ignoring or self-medication may be fatal.

Breastfeeding mothers had positive attitude towards nutrition. Majority of breastfeeding women were positive towards antenatal check-up during pregnancy. Majority of them also felt that skipping meals among breastfeeding mothers affects their health. Preparing meals rich in iron such as beef, chicken or fish is necessary. Supplementation of iron and folic acid are good for the mother and fetus. Respondents also were positive that screening of blood for infections helps identify potential life threatening diseases or risks both for the breastfeeding mother and child and help remediate the situation in time. They were also opposed to taking alcohol and smoking during pregnancy.

Majority of breastfeeding women agreed that antenatal check-up is necessary for women after becoming pregnant. During pregnancy series of antenatal appointments are essential to check on the health of the breastfeeding mother and the health of the infant. Normally, first ante natal clinic takes place 6-8 weeks after pregnancy. Antenatal services can integrate advice on nutrition including supplementation in settings with micronutrient deficiencies, and can encourage breastfeeding practices. It can also entail proper life style and exercise. The results agree with Kuhnt and Vollmer (2017) at least one ANC visit was associated with a 1.04% points reduced probability of neonatal mortality and a 1.07% points lower probability of infant mortality.

Majority of the breastfeeding mothers did not agree that skipping a main meal every day will not affect the pregnant woman's health implying that skipping meals among breastfeeding mothers

affects their health. Meal patterning during pregnancy may be important because pregnant women who sustain prolonged periods of time without food by skipping meals and/or snacks may be inducing a physiologic stress upon their pregnancy. Frequency of eating or meal patterns during pregnancy may be a component of maternal nutrition relevant to pregnancy outcome. The results concur with Maria Siega-Riz, Herrmann, Savitz and Thorp (2001) that women who consumed meals/snacks less frequently were slightly heavier prior to pregnancy, were older, and had a lower total energy intake and the women had a higher risk of delivering a preterm child.

Results also showed that majority of breastfeeding mothers agreed that preparing meals with iron-rich foods such as beef, chicken or fish is necessary. Iron is particularly important in pregnancy and infancy to meet the high demands for hematopoiesis, growth and development. Iron plays key roles in oxygen transport by red blood cells, energy production, growth and development, functions particularly important during the demands in pregnancy and infancy for hematopoiesis, growth and development. The results agree with Brannon and Taylor (2017) recommends an Adequate Intake of 0.2 to 0.26 mg/day of iron for breastfeeding mothers.

It was also found that majority of breastfeeding t women agreed that antenatal booking should be done before the 3rd month of pregnancy implying that antenatal care services among pregnant women is critical. The antenatal period clearly presents opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. For example, if the antenatal period is used to inform women and families about danger signs and symptoms and about the risks of labor and delivery, it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. The antenatal period provides an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Better understanding of fetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health. Immunization, for instance tetanus for mothers is vital during pregnancy and all these can only happen during antenatal checkup by health expert. Awareness on dangerous diseases like malaria is also instilled during antenatal checkup.

The results of the study indicated that majority of breastfeeding women agreed that screening of blood for infections (HIV, HBV, etc.) should be carried out during antenatal check-up. Screening helps identify potential life threatening diseases or risks both for the breastfeeding mother and child and help remediate the situation in time. Screening for infections needs to be part of the routine antenatal care. The recommended screening test for HBV is an immunoassay to detect hepatitis B surface antigen. The screening test is designed to detect women who have acute or chronic infection with HBV. Tests for HBsAg are very sensitive and may detect women who are in the early incubation phase of an infection. Screening for HIV among breastfeeding mother is also conducted so as to propose medication for mother to prevent mother to child HIV transmission in case it is positive. The results agree with Silasi, Cardenas, Kwon, Racicot, Aldo and Mor (2015) screening for fetal diseases like HIV and Hepatitis during pregnancy is important in protecting the life of the mother and the child.

Majority of the breastfeeding mothers agreed that blood pressure should be checked regularly during pregnancy. Normal blood pressures would be safe for the health of both breastfeeding

mother and child. Hypertensive disorders in pregnancy, which include preeclampsia, gestational hypertension and chronic hypertension, complicate 2–8% of pregnancies and confer risk to the health of mother and fetus. A concern for women with high blood pressure in pregnancy is the increased risk of developing preeclampsia. Pre-eclampsia is a condition in which a pregnant woman develops high blood pressure and has protein leaking into her urine. In pregnancy a normal blood pressure is below 140/90. During pregnancy, severe or uncontrolled hypertension can cause complications for the mother and the *fetus*. According to Ngene and Moodley (2019) that Measurement of blood pressure is essential for clinical management of patients.

The results also showed that majority of breastfeeding women were agreeing that iron supplements be used on daily basis during pregnancy. Results also showed that majority of the breastfeeding women were agreeing that supplementation of iron and folic acid are good for the mother and fetus. Iron plays key roles in oxygen transport by red blood cells, energy production, growth and development, functions particularly important during the demands in pregnancy and infancy for hematopoiesis, growth and development. Total iron requirements during normal pregnancy are about 840 mg. This includes the iron needed for the fetus, placenta, increase of maternal red cell mass, and basal iron losses by the mother. The results agree with Brannon and Taylor (2017) recommends an Adequate Intake of 0.2 to 0.26 mg/day of iron for breastfeeding mothers. The results also concur with Milman (2006) that iron is essential in the development of hemoglobin that transports oxygen from mother to the child.

Responses from breastfeeding women also showed that majority were agreeing that pregnant women should change dietary habit as advised by doctor. A healthy and varied diet is important at all times in life, but particularly so during pregnancy. The maternal diet must provide sufficient energy and nutrients to meet the mother's usual requirements, as well as the needs of the growing fetus, and enable the mother to lay down stores of nutrients required for fetal development as well as for lactation. The results agree with Tanha, Mohseni, Ghajarzadeh and Shariat (2013) that balance diet is vital during pregnancy. However, Latifa, Fouda, Ahmed, Shehab (2012) found that about half of the women did not have enough knowledge regarding the meaning, the importance and the constituents of a well-balanced diet for the pregnant women.

Result findings also indicated that majority of the breastfeeding mothers disagreed that smoking does not cause any harm to the fetus. Smoking during pregnancy increases the risk of health problems for developing fetus, including preterm birth, low birth weight, and birth defects of the mouth and lip. Smoking during and after pregnancy also increases the risk of sudden infant death syndrome. Maternal smoking during pregnancy contributes to a variety of infant health problems present at birth as well as long lasting behavioral and neurodevelopmental impairments, and remains arguably one of the most important modifiable risk behaviors for child and long term health and human capital. In addition to affecting physical health, in utero exposure to maternal smoking may have adverse effects on cognitive ability, neurological health and behavior of infants and children. The results agree with Wehby, Prater, McCarthy, Castilla and Murray (2011) that smoking has large adverse effects on neurodevelopment of the unborn child. According to Kataoka, Carvalheira, Ferrari, Malta, Carvalhaes and de Lima Parada (2018) smoking during pregnancy results to birth weight loss of the child.

It was also found that majority of the breastfeeding mothers disagreed that alcohol consumption during pregnancy is good for fetus. Excessive use of alcohol has potential harm to the fetus.

Risks from alcohol exposure in pregnancy include miscarriage, preterm birth and fetal alcohol spectrum disorders. A high alcohol intake can affect the ability to give birth normally as well as bring about pregnancy complications and impaired fetal development, including low birth weight. The results agree with Ornoy and Ergaz (2010) that maternal alcohol ingestion in pregnancy have deleterious effects on the Central Nervous System and other organs of the developing embryo, depending on the dose, duration and developmental stage of the embryo at exposure. According to Sbrana, Grandi, Brazan, Junquera, Nascimento, Barbieri, Bettiol and Cardoso (2016) there is greater risk of low birth weight and newborns small for gestational age and preterm birth among mothers who were drinkers.

5.0 Conclusions

The study also concluded that breastfeeding mothers had positive attitude towards nutrition and were willing to consume food that is healthy for them and to the child. They are positive about the need for balance diet during pregnancy. They also appreciate the need for ante natal checkup. Supplementation of iron and folic acid are good for the mother and fetus. The breastfeeding mothers were also positive that screening of blood for infections helps identify potential life threatening diseases or risks both for the breastfeeding mother and child and help remediate the situation in time. There were also opposed to taking alcohol and smoking during pregnancy.

6.0 Recommendations

It was also established that breastfeeding mothers had positive attitude towards nutrition and were willing to consume food that is healthy for them and to the child. Breastfeeding mothers had also positive attitude towards balance diet during pregnancy and the need for ante natal checkup. However, affordability of all the food and nutrients required is a problem to many breastfeeding mothers. The study recommends for the need of subsidizing supplements and nutrients sold in the dispensaries and health centers so that breastfeeding women from low income households can afford them. Subsidizing of supplements and nutrients can be done by government by reducing taxes levied on medical products. It is also recommended that breastfeeding women should be encouraged to be buying foods rich in iron, calcium and folic acid nutrients while avoiding chuck foods that may result to abnormal weight gain for both the mother and the baby.

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