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The effect of nutritional knowledge and dietary practices on childbirth weight: The case of adolescents mothers in the Effutu municipality, Winneba, Ghana

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Abstract

Nutritional knowledge and dietary practices of adolescent mothers are crucial as they can pose a risk to the mother and the foetus. Being pregnant requires a high demand of nutrients to form new tissues and grow existing tissues as well. The research objective was to assess the effect of nutritional knowledge and dietary practices on childbirth weight of adolescent mothers in the Effutu Municipality. A survey design was employed for this study with the target population being adolescent mothers in the Effutu municipality. A purposive sampling technique was used to select 101 respondents from 11 health centres in the municipality. Questionnaires were used as the research instrument. The study found that nutritional knowledge has no significant effects on the Child's birth weight (.078), $p < .05$. The author also found that dietary practices significantly affect the Child's birth weight (.034), $p < .05$. However, a greater significant effect on the child's birth weight (.017) was discovered when the nutritional knowledge and dietary practices are put together and treated as one variable.

It is recommended that the Ministry of Health in collaboration with other NGOs should organize an effective nutrition intervention that will be directed towards adolescent mothers to improve maternal nutritional knowledge and dietary practices thereby increasing the overall nutritional status of adolescent mothers.

Keywords: Adolescent, child birth weight, low birth weight, nutritional knowledge, dietary practices

1. Introduction

An adolescent year is a period of transition stage of life, which marks the period between infancy and adulthood. The adolescent period provides an opportunity to prepare for a healthy productive and reproductive lifestyle. It is also a stage where young individuals learn to make independent judgments and build their views and beliefs. (Save the children, 2022) [22]. The adolescent period is an excellent time to begin planning for a healthy reproductive lifestyle. According to Kennedy (2009) [16], adolescence is associated with emotional, physical, social and psychological transformation. The adolescent years represent a period, which indicates that an individual is capable of sexual reproduction. This period is the most fertile period in the lives of females (Holness, 2014) [13]. Eruesgbefe (2005) argues that today's adolescents have become more sexually active and promiscuous compared to adolescents some years ago. Jolley (2001) [14] posit that adolescents become sexually active at an earlier age than what used to be the case in previous decades, with over one-third of adolescents between 15-16-years having already had sexual intercourse. A report from the United Nations Population Fund's (UNICEF, 2019) [24] showed that Africa has the highest percentage of adolescent birth among developing countries. Similarly, Kassa, Arowojolu, Odugogbe and Yalew (2018) [15], found that adolescent pregnancy is a major public health problem, particularly in Africa.

In Ghana, the adolescent birth rate is at 13% and an average of one in ten adolescent girls between 15-19 years in the cities already beginning childbirth, with twice the figure in the rural areas. The Ghana Health Service posits that the Central Region is among the regions in Ghana with high adolescent childbirth (Ghana Statistical Service, 2020). Adolescent pregnancy has become a great deal of public concern in Effutu- a suburb in the central region. In this municipality, most pregnant adolescents are dependent and still rely on their parents or guardian for especially material and financial support.

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Most often, these parents are unable to adequately meet the needs of the family due to economic hardship and this makes the unwanted pregnancy of such adolescent child an additional burden to the entire household. This poses a great danger to the pregnant adolescent nutritional status and also the unborn child. Eruesgbefe (2005) posits that pregnant adolescents have inadequate knowledge about proper dietary practices resulting in underweight or overweight of mother or child or both. It is therefore important to look into the effect of nutritional knowledge and dietary practices on the childbirth weight of pregnant adolescents in the Effutu Municipality. Although several studies have been done on adolescent pregnancy in the country, it appears none has been focused on the relationship between nutritional knowledge, dietary practices and childbirth weight at Effutu Municipality.

2. Related Literature

2.1 Adolescence pregnancy

Pregnancy among girls under the age of 20 is described as adolescent pregnancy. A girl can get pregnant when she starts to ovulate, which can happen prior to her first menstrual period but generally happens after her periods have started (World Health Organization, 2019) [27]. Adolescent pregnancy is defined by as a girl between the ages 13-19 getting pregnant (UNICEF, 2019) [24]. Adolescent pregnancy refers to females who become pregnant before reaching the legal adult age which varies by country. Pregnant adolescents encounter several problems and experience a number of complications during pregnancy and later in life (Hamilton & Ventura, 2012; WHO/MPS.NOTES, 2021) [12, 26]. Pregnant adolescents are less likely to sustain a healthy pregnancy (WHO/MPS.NOTES, 2021) [26]. Adolescent pregnancy is linked to both social and biological concerns (anemia, low birth weight, early labor, and pre-eclampsia) with adolescents from low-income families highly associated (Hamilton & Ventura, 2012; UNICEF, 2019) [12, 25]. According to Hamilton and Ventura (2012) [12], approximately 7.3 million women under the age of 18 years give birth each year in developing countries.

2.2 Rate of Adolescent Pregnancy Globally, in Africa, West Africa, and Ghana

Adolescent pregnancy is an international issue affecting not just one country but occurs in high, middle, and low-income countries. Adolescent childbirth in developing countries is twice higher as compared to that in developed countries (WHO, 2020). Of almost 300million female adolescents worldwide, about 16 million give birth yearly representing 11% of all birth worldwide (WHO, 2020; Maternal Health Survey, 2018; Save the Children, 2022) [22]. World Health Organization (2020) posits that approximately 21 million adolescent girls aged 15-19 years and about 2million teenage girls under 15years become pregnant out of which 12 million give birth. However, at least 777,000 girls under 15 years give birth each year in developing countries. Out of this, about 16 million females between the ages of 15 and 19 years give birth while about 2.5 million females under age 16 give birth in developing countries.

Globally, adolescent pregnancy is a serious public health problem that needs immediate attention. A report by Save the Children (2022) [22] also revealed that annually approximately 13 million children are born to women under age 20 worldwide and more than 90% are in developing countries. About half of all adolescent pregnancies in developing countries are unintended making more than half end in unsafe abortions. Complications of pregnancy and childbirth are the

leading causes of mortality among females aged 15-19 years (Maternal Health Survey, 2018; WHO, 2019). Almost 95% of adolescent pregnancies occur in developing countries with 36.4 million women becoming mothers before age 18, but the highest rate of adolescent pregnancy in the world is in Sub-Saharan Africa where females tend to marry at early years. Every second female in Sub-Saharan Africa was reported to give birth to a child before the age of 20years (Holness, 2014) [13].

In Ghana, adolescent pregnancy is still a significant concern. Adolescents residing in the rural area (about 18%), those living in the Brong Ahafo, Central, and Volta regions (about 21-23%), those with no education (23.2%), those with secondary education (6%), and those in the second wealth quintile (21%) tend to start childbearing earlier than other adolescents (11%) in urban areas (Ghana Statistical Service, 2017) [9]. The 2020 annual data from Ghana Health Service shows that, roughly 301 females were impregnated every day with an average of 13 adolescent pregnancies recorded each hour (Ghana web, 2021) [8]. According to pulse.com.gh, statistics from the Ghana Health Service indicated that about 750,000 adolescents within the ages of 15-19 years were reported to be pregnant in 2014 with the Central region recording the highest. However, a report from Ghana Health Service on antenatal care registrants for 2016, revealed 115 pregnancy cases among adolescents between the ages of 10-14 years, whilst 5,474 cases were recorded among adolescents between ages 14-19 years (Citifmonline.com, 2016) [4]. Again, Graphic online indicated that a total of 57,000 adolescent pregnancies were recorded in the first half of 2017.

Adolescent pregnancy has been a major interference to female students' educational success worldwide and Ghana is not an exception (Plan International, 2019) [21]. The Northern Regional Director of Education, Dr Peter Attafuaah in an education dialogue series organised by a non-governmental organisation, School for Life, indicated that a total of 127 adolescent pregnancies in 2020 were recorded which preventing them from writing the 2020 West African Senior Secondary Certificate Examination (WASSCE) and the Basic Education Certificate Examination (BECE). He added that despite the fact that pregnancies among BECE and WASSCE candidates are not uncommon, the number was high in 2020 compared to prior years (Graphic Online, 2021) [11].

A report by Graphic.com revealed that adolescent pregnancy in the Central Region is still alarming and worrisome with the latest discovery that adolescent girls around the coast now exchange sex for fish which makes a living (Earth Journalism Network, 2017) [6]. Nevertheless, 25 pregnant school girls sat for the 2021 BECE at Ajumako (Moden Ghana, 2021). Meanwhile, five final-year students of Efutu M/A Basic School were denied access from writing the Basic Education Certificate Examination (BECE) by the Headmistress (pulse.com, 2021).

Recent data from the Ghana Health Service District Health Information Management System (DHIMS), showed that more than half a million teenage pregnancies were recorded between 2016 and 2020 (citinewsroom.com, 2021). From the data, approximately 555,575 teenagers aged 10 to 19 years, were said to have gotten pregnant, out of this, 13,444 girls were between the ages of 10 and 14 about 542,131 teenage girls were between the ages of 15 to 19 years. It was concluded that annually, approximately 112,800 teenagers get pregnant.

The 2020 annual data from Ghana Health Service revealed 2,865 girls between the ages of 10 and 14 years while 107,023 girls were between 15-19 years got pregnant in 2020 (Ghana

web, 2021)^[8].

However, statistics from the Ghana Health Service (GHS) indicate that about 13 adolescent pregnancy cases were documented every day in Ghana especially in 2020 during the peak period of COVID-19. It was revealed that, on a daily basis, out of about 301 pregnancies recorded in Ghana, 13 were adolescents (Ghana web, 2021)^[8].

2.3 Relationship between Nutritional Knowledge, Dietary Practices and Childbirth Weight

According to the World Health Organization (WHO, 2018), a birth weight of less than 2.5kg indicates intrauterine malnutrition with micronutrient deficiencies. As a result, the prevalence of low birth weight is a strong predictor of infant survival. (WHO, 2018). Low birth weight (LBW) is known to be caused by poor nutrition, especially in impoverished countries. WHO discovered that maternal nutrition before and during pregnancy account for more than half of all instances of LBW in many poor countries. Dietary practices made during pregnancy may have an impact on the baby's health thereby affecting the birth weight of the baby (Abubakari & Jahn, 2016)^[1].

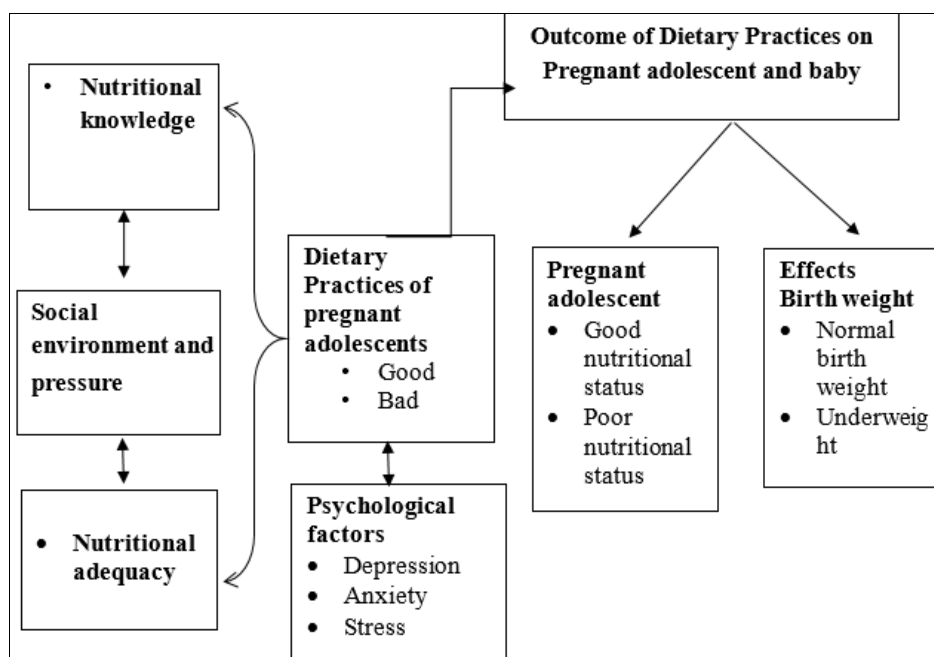
The majority of this data was based on the adequacy of caloric and protein intakes throughout pregnancy and pre-pregnancy nutritional state assessed using anthropometric parameters.

The pregnancy weight of the mother is a well-known indicator of birth weight. World Health Organization (2018) indicated that pre-pregnancy weight predicted the risk of

LBW with an odds ratio (per unit reduction in pre-pregnancy weight) of >2 based on a massive meta-analysis of data from >100 000 women globally. Maternal height, pre-pregnant BMI, and mid-upper arm circumference (MUAC) were among the other factors that predicted risk (WHO, 2018). A study by Mosha & Philemon (2010)^[18] found that maternal dietary habit was an independent predictor of birth weight. Again, studies have found that rural mothers who ate micronutrient-rich diets had healthier and bigger babies than mothers who didn't eat nutritious diets (African Population and Health Research Centre, 2018; UNICEF, 2019)^[25]. Low birth weight (LBW), which is defined as a weight that is less than 2.5 kg at the time of birth, is still a major public health issue in many developing countries. Studies show that majority of low birth weight (95.6%) is reported by low and middle-income countries which is related to inadequate nutrition during and throughout pregnancy (United Nations Children's Fund and World Health Organization, 2018; UNICEF, 2019)^[25]. More than 20 million babies worldwide (15.5% of all births) are born with low birth weight (Nyamasege, Kimani-Murage, Wanjohi, Kaindi, Ma, Fukushima, & Wagatsuma, 2019)^[20]. The researcher, therefore, hypothesize that:

Pregnant adolescents' dietary practices and nutritional knowledge significantly affect their babies' birth weight in the Effutu municipality

2.4 Conceptual Framework



Source: Researcher's Construct (2017)

Fig 1: Conceptual Framework on the Dietary Practices of Pregnant Adolescent

Adolescents' dietary practices are influenced by the nutritional knowledge and social environment and pressure which are influences from families and friends as well as nutritional adequacy all come together as a focal stimulus that have immediate effect on the dietary practices of pregnant adolescent. However, psychological factors which include stress, depression and anxiety become the contextual stimuli that also affect the dietary practices of pregnant adolescent but not immediate. Barriers to healthy diet choices include the lack of nutritional knowledge regarding the quantity and quality of certain foods to be eaten to stay healthy as well as

some common beliefs. Pregnant adolescents have inadequate knowledge of the required diets to eat to ensure proper nutrition. They tend to eat anything they feel which contribute to their dietary practices and affect their state of health which may be good or poor.

Social environment and pressure have been found to influence the dietary choices of pregnant adolescents. Adolescents get support and information from family and friends which affects their dietary choices both positively and negatively. Because most adolescents have inadequate knowledge about dietary habits, friends and families pressure them to adapt to

what they think is good for them based on their own experiences which may be true or maybe false.

The outcome of the dietary practices is reflected in the nutritional status of the pregnant adolescent which might be good due to good dietary practices or poor due to poor dietary practices. Since the foetus is directly impacted by the mother's nutritional condition during pregnancy, it is a crucial variable to evaluate.

The nutritional status of the pregnant adolescent will then indicate the weight of the baby when delivered, whether the baby will have normal birth weight or be underweight.

3. Methodology

A survey design was employed for this study. This design was used because it is exploratory and so provided a true picture of the dietary practices of the respondents in the study. In this study, the population involves a total of 236 pregnant adolescents attending 11 health centres out of 12 health centres in the Effutu Municipality. Purposive sampling technique was used to sample 101 pregnant adolescents who are within the 6th to 9th month of pregnancy. The population and sampling distribution for the study are presented in Table 1.

Table 1: Health Centres Used and Number of Respondents

Hospital/ Clinic/ Centre	Number of respondents available	Number of respondents selected
Trauma and Specialist Hospital	12	7
Klimovic Memorial Hospital	10	5
Otoo Memorial Hospital	15	6
Baptist Mission Hospital	19	10
Bethel Maternity Home and Clinic	17	7
Winneba Municipal Hospital	99	36
Winneba Health Centre	21	9
Zongo Chips Zone	11	5
Ansafor Chips Zone	13	7
Gyengyenadze Chips Zone	10	6
Nsuakyir Chips Zone	09	3
Total	236	101

Source: Hospital Records (2017; Field Survey, 2017)

Questionnaire was used to collect data on the nutritional knowledge and dietary practices of the respondents. The questionnaire was designed into two sections, A and B. Section A was made up of questions assessing the background characteristics of the respondents while section B focused on questions related to the subject matter of the study. The instrument was administered to 23 pregnant adolescents in a pilot study at a hospital outside the study area, with antenatal services in Swedru. The Cronbach Alpha coefficient was used to assess the questionnaire's reliability. The score had an alpha value of 0.75, implying that the questionnaire was consistent and reliable. The result from the pilot study helped to eliminate irrelevant information. The data were analyzed quantitatively using descriptive statistics in the form of percentages and frequencies and presented in tables and chart form, and inferential statistics using multivariate analysis.

4. Ethical Considerations

With regard to ethical issues; the researcher obtained an introductory letter from the Department of Home Economics Education of University of Education, Winneba, to the health service management for permission to interact with their patients and use their premiss for collecting data for the study. The researcher made it clear to the respondents verbally that their participation in the study is voluntary and so should

come from their own free will.

The researcher again explained to the respondents about the nature, purpose and objectives of the study, and spoke to them briefly on the significance of the exercise they will derive concerning the study, to have a clear and better understanding of the study in other to be able to decide whether or not to take part in the exercise. The pregnant adolescents were given enough time after the interaction to ask questions bothering them on the study for clarification. For those pregnant adolescents who happen to live on their own without support from family and friends made their own decisions as to whether to take part or not but for those staying with parents or guardians, the researcher sought permission from their parent or guardian to allow their wards partake in the study. The researcher again guaranteed the respondents of their privacy and confidentiality as their responses will be treated with due respect and promised to keep them protected and seek their permission when there is the need to release any private information provided.

5. Results

5.1 Demographic Characteristics of Respondents

Table 2 below shows the demographic characteristics of respondents.

Table 2: Demographic Characteristics of Respondents N=101

Item	Frequency(f)	Percentage (%)
Age of respondents		
15 years	2	2.0
16	16	15.8
17	48	47.5
18	21	20.8
19	14	13.9
Marital Status		
Single	95	94.1
Married	6	5.9
Mode of Living		

Family/Friends	56	55.4
Partner	19	18.8
Alone	26	25.7
Level of Education		
No Formal Education	15	14.9
Below JHS 3	27	26.7
SHS (Senior High School)	51	50.0
Tertiary	8	14.9
Occupation		
Self Employed	30	29.7
Employee (Work for an Organization)	7	6.9
Unemployed	64	63.3
Monthly Income		
Less than GhC150.00	64	63.4
GhC150.00 - GhC200.00	13	12.9
GhC201.00 - GhC500.00	24	23.8
Greater than GhC500.00	0	0.0

Source: Field Survey (2017)

Table 2 shows an age range of 15 to 19 with the majority between the age of 17 (47.5%) and 18 (20.8%). However, 16 (15.8%) were 16 years while 14 (13.9%) and 2 (2.0%) were 19 and 15 years respectively. The outcome from the respondents again revealed that majority 95 (94.1%) of the respondents reported single of which 46 were 17 years, 20 were 18 years, 16 were 16 years, 11 were 19 years and 2 were 15 years. About 6 (5.9%) of the respondents were married with 3 of the respondents being married at the age of 19 years, 2 at age 17 and 1 at 18 years. Again, 56 (55.4%) which represents the greater part of the respondents were living with family/ friends, 26 (25.7%) were living alone and (18.8%) which represent 19 of the respondents were staying with their boyfriends though they were unmarried. On the level of

education, greater percentage, that is, 51 (50.5%) had SHS education while 27 (26.7%) had their education level below JHS 3, 15 (14.9%) had no formal education and 8 (7.9%) were with tertiary level of education.

More of the respondents 64 (63.3%) were unemployed resulting from a higher rate of the respondents being dropout from school. 30 (29.7%) were self-employed and 7 (6.9%) and of the respondents were employed. The monthly income from the table revealed that, 64 (63.4%) of the respondents had a perceived monthly income which was less than GHC 150.00, while (21.7%) was recorded for respondents who had no income and those who earned less than GHC 150.00 and 2 (47.8%) had a perceived income of GHC 201 - GHC 500.00.

Table 3: Nutritional knowledge on nutrition during pregnancy

	Frequency	Percentage
Needs more nutrient increase for safe delivery	15	14.8
Needs more food quantity	40	39.6
Needs more nutrients for the growth of mother and baby	31	30.7
Needs more food quantity; and needs more nutrients for the growth of mother and baby	5	5.0
Needs more food quantity, and more nutrients for safe delivery	3	3.0
Needs more nutrients for the growth of mother and baby; and more nutrients for safe delivery	7	6.9
Total	101	100

Pregnant mothers were asked quite a few questions on nutrition during pregnancy and 40 (39.6%) of the respondents asserted that a pregnant mothers' diet needs more food quantity, 31 (30.7%) said pregnant mothers' diet needs more nutrients for the growth of mother and baby. Again, 15 (14.8%) said pregnant woman's diet needs more nutrient increase for safe delivery. However, other respondents had double reasons with 7 (6.9%) stating that a pregnant woman's diet needs more nutrients for the growth of mother and baby and more nutrients for safe delivery, 5 (5.0%) said pregnant mothers' diet should be more in quantity; and needs more nutrients for the growth of mother and baby with 3 (3.0%) of the respondents saying the diet needs more food quantity; and more nutrients for safe delivery.

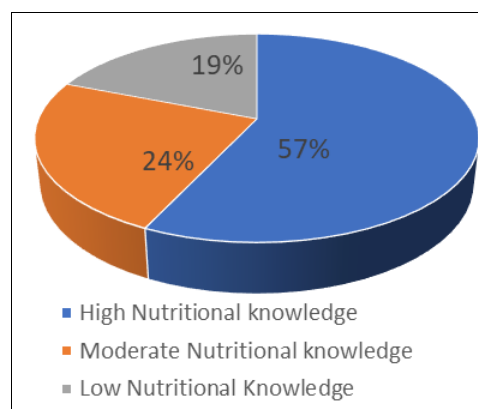


Fig 2: Nutritional Knowledge Score of Adolescent Mothers

Results from figure 1 above shows that 57% of the adolescent mothers had high nutritional knowledge, while 24% and 19%

had moderate and low nutritional knowledge, respectively. Figure 2 shows the dietary practices of the adolescent mothers

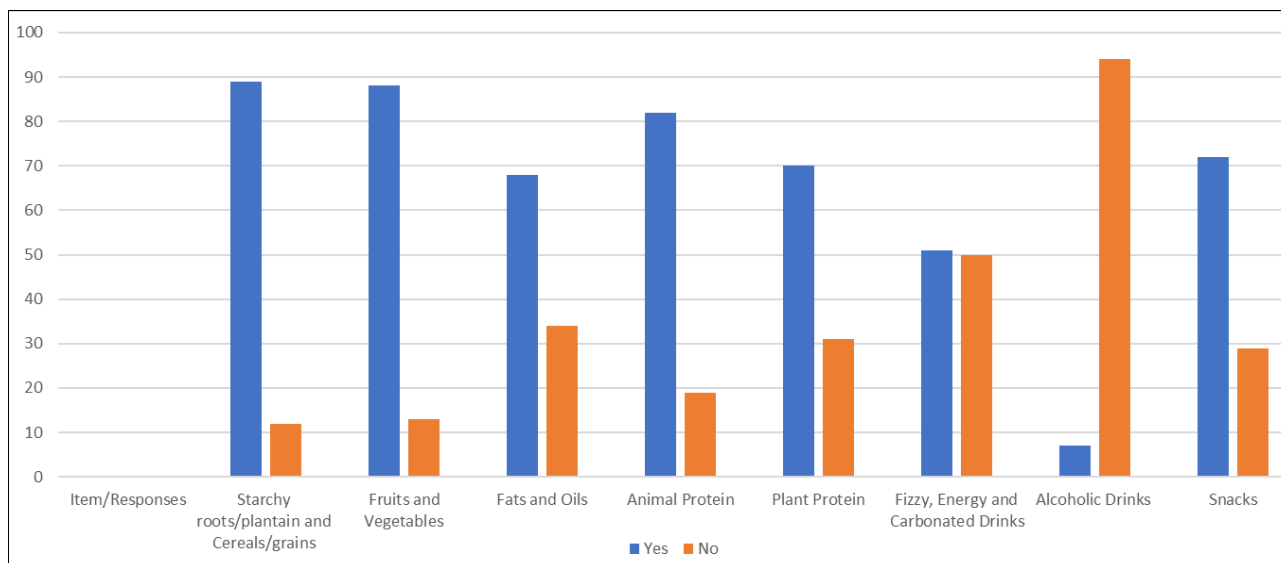


Fig 3: Dietary Practices of Adolescent mothers

The study revealed 89 (88.2%) of the respondents have been consuming starchy roots/plantains and cereals/grains daily with 12 (11.9%) who doesn't. Again, 68 (66.9%) responded that they fats and oils daily while 34 (33.7%). Similarly, 82 (81.2%) and 70 (69.8%) consume animal protein and plant protein respectively, every day whereas 19(18.8%) and 31 (30.2%) do not respectively. Additionally, 88 (87.1%) of the respondents indicated they consume fruits and vegetables on a daily basis while 13 (12.9%) do not. Also, 72(71.3%), 51

(50.2%), and 7 (6.9%) of the respondents indicated they consumed snacks, fizzy, energy and carbonated drinks, and alcoholic drinks respectively with 28(28.7%), 50(49.8%) and 94 (93.1%) who do not consume such items respectively.

5.2 Effect of Nutritional Knowledge and Dietary Practices on Childbirth Weight

Table 3 below provides evidence of the effect of nutritional knowledge and dietary practices on childbirth weight.

Table 4: Multivariate Analysis of Variance of Nutritional Knowledge and Dietary Practices on Childbirth Weight of Pregnant Adolescents Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Childbirth weight	10.662 ^a	77	.138	2.193	.018
Intercept	Childbirth weight	359.142	1	359.142	5686.938	.000
Nutritional knowledge	Childbirth weight	2.025	17	.119	1.886	.078
Dietary Practices	Childbirth weight	2.198	15	.147	2.320	.034
Nutritional knowledge * Dietary Practices	Childbirth weight	6.519	45	.145	2.294	.017
Error	Childbirth weight	1.453	23	.063		
Total	Childbirth weight	739.790	101			
Corrected Total	Childbirth weight	12.115	100			

a. R Squared = .880 (Adjusted R Squared = .479)

b. R Squared = .915 (Adjusted R Squared = .632)

c. R Squared = .699 (Adjusted R Squared = -.307)

Source: Field Survey (2017)

The result of multivariate analysis of variance in Table 3 shows that there is a statistically significant relationship between the variables considered. The data shows that nutritional knowledge has no significant effects on the Childs' birth weight. The dietary practices were found to significantly affect the Childs' birth weight.028, $p < .05$. However, when the nutritional knowledge and dietary practices are put together and treated as one variable, there was a greater significant effect on the childbirth weight (.017). The result is consistent with the hypothesis developed for the study. Hence, we fail to reject the hypothesis that pregnant adolescents' dietary practices and nutritional knowledge significantly affect their babies' birth weight in the Effutu municipality.

6. Discussion

Maternal age is a major factor of adverse pregnancy

outcomes, especially with adolescent mothers who are known to have a higher risk of preterm birth, low birth weight, and postnatal mortality (Abubakari & Jahn, 2016) [1]. Majority of the respondents (68.3%) were seen from the findings to be in their late adolescent years (17 and 18years). However, the level of education of pregnant adolescents is important so as to acquire in-depth knowledge about nutritional requirements needed for their growth and of the foetus so as to have adequate nutrition during pregnancy (Zhao, Zhang & Li, 2019) [29]. Most of the respondents 95(94.1) were single signifying a high rate of pregnancy out of wedlock. It was again seen from this study that most (86.5%) adolescent mothers could not go beyond the senior secondary level of education, and none of them were still in school at the time of the study. Most of them were victims of school dropouts due to pregnancy. Nana and Zema 2018 [19], posit that maternal

education is seen as a predictor of maternal dietary practices. Low education attainment is therefore one of the potential risk factors associated with poor nutritional status during pregnancy (Sivakanesan, Wijesinghe & Liyanage, 2016).

Pregnant mothers' nutritional knowledge is a critical factor in having a healthy pregnancy outcome. A greater number (57%) of adolescent mothers from the study displayed a high level of nutritional knowledge and good dietary practices which supports findings from Appiah, Korklu, Bonchel, Fenu, and Yankey 2021 on nutritional knowledge and dietary intake habits among pregnant adolescents attending antenatal care clinics in an urban community in Ghana which also discovered high nutritional knowledge among pregnant adolescent but in disparity with findings from Zhao, Zhang & Li, 2019^[29] who reported that adolescent mothers have low level of nutritional knowledge in their study.

On the other hand, findings from this study are in contrast with a study by Biadgilign and Zerfu, 2018 who found that pregnant mothers have a limited level of nutritional knowledge and poor dietary practices. However, the success of the outcome of every pregnancy is determined by the health and nutritional status of the mother and the unborn baby. There are numerous aspects of a pregnant mother's health that have a direct effect on the outcome of the baby which includes the nutritional status of the mother, nutritional knowledge of the mother, and the mother's dietary practices. Zhao, Zhang & Li, 2019^[29] found a significant relationship between maternal nutrition knowledge and dietary practice in their study on nutrition knowledge, dietary practices, and nutrition status of pregnant adolescents in Mandera county, Kenya. Findings from this study indicated from a multivariate analysis that nutritional knowledge has no significant effects on the Child's birth weight (.078).

However, a study on determinants of low birth weight in the context of maternal nutrition education in urban informal settlements in Kenya revealed that inadequate maternal nutrition knowledge is one of the determinants of low birth weight (Nyamasege, Kimani-Murage, Wanjohi, Kaindi, Ma, Fukushima, & Wagatsuma, 2019)^[20]. Again, the dietary practices were found to have a significant effect on the Child's birth weight .034, $p < .05$. This is in agreement with a study by Abubakari and Jahn (2016)^[1] which found that pregnant mothers who exhibited good dietary practices were less likely to have low birth weight babies. However, there was a greater significant effect on the child's birth weight (.017) when the nutritional knowledge and dietary practices are put together and treated as one variable. This shows that nutritional knowledge alone cannot be the basis for understanding the right nutrient to be taken, but can be an additional form of understanding the right combination of nutrients in food for pregnant adolescents, while the dietary practices are more important to adolescent mothers than any other things that can affect the childbirth. But then, the combination of nutritional knowledge and dietary practices can enhance the chance of proper care of the adolescent pregnancy for the good of the baby indicating a positive pregnancy outcome. Thus, birth weight still remains an important factor affecting the neonatal infant and childhood mortality and morbidity.

7. Conclusion

We can infer from the outcome of the investigation that adolescent mothers' nutritional knowledge affects their dietary practices. It was noticed that the nutritional knowledge of adolescent mothers was not adequate. The inadequate or

poor nutritional knowledge of adolescent mothers in the Effutu municipality affected dietary practices through their food selection which resulted in either being underweight or overweight of mother or child or both. The study provides evidence that nutritional knowledge and dietary practices significantly influence birth weight.

8. Recommendation

The paper recommends that the Ministry of Health in collaboration with NGOs should organize an effective nutrition education directed toward adolescent mothers to improve maternal nutritional status. Again, pregnant adolescents should be educated on the right food items to include in their diet.

9. References

1. Abubakari A, Jahn A. Maternal Dietary Patterns and Practices and Birth Weight in Northern Ghana. *PLoS ONE*. 2016;11(9):35-46.
2. African Population and Health Research Center, 2022: Maternal and Child Wellbeing. <https://aphrc.org/runit/maternal-andchildwellbeing/?gclid>. 27 January 2022.
3. Appiah PK, Korklu ARN, Bonchel DA, Fenu GA, Yankey FW. Nutritional Knowledge and Dietary Intake Habits among Pregnant Adolescents Attending Antenatal Care Clinics in Urban Community in Ghana, *Jr of Nutri and Metabolism*. 2021;1(1):1-9.
4. Citifmonline.com. Upper East, Volta record highest teenage pregnancies. <http://citifmonline.com/2017/03/05/upper-east-volta-record-highest-teenage-pregnancies-in-2016>. 15 October, 2021.
5. Citinewsroom.com. Teenage pregnancies in Ghana hit 555,575 in Five Years. <https://citinewsroom.com/2021/06/teenage-pregnancies-in-ghana-hit-555575-in-five-years/> 11 November, 2021.
6. Earth Journalism Network. Ghana: Unbelievable- Central region teenage pregnancy remains high as girls now exchange sex for fish. <https://earthjournalism.net/stories/ghana-unbelievable-central-region-teenage-pregnancy-remains-high-as-girls-now-exchange-sex>. 11 November 2021.
7. Eruesgbefe, R. Teenage pregnancy. <http://www.studymode.com/essays/Teenage-Pregnancy-68356801.html>. 13 November, 2021.
8. Ghana Web. 13 teenage pregnancies recorded every one hour, 110,000 recorded in 2020 - GHS statistics. <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/13-teenage-pregnancies-recorded-every-one-hour-110-000-recorded-in-2020-GHS-statistics-1248676>. 14 September 2021
9. Ghana Demographic and Health Survey, Millennium Development Goals Indicators, Ghana Statistical Service, Ghana Health Service, Accra, Ghana, 2017.
10. Graphiconline.com. Adolescent and Teenage Pregnancy in Ghana. <https://www.graphic.com.gh/component/search/adolescentpregnancy>. 15 October, 2021.
11. Graphic Online. Teenage pregnancy in Northern Region - 127 Girls unable to write 2020 WASSCE, BECE. <https://www.graphic.com.gh/news/education/teenage-pregnancy-in-northern-region-127-girls-unable-to-write-2020-wassce-bece.html>. 16 October 2021.
12. Hamilton BE, Ventura SJ. Birth Rates for U.S. Teenagers

- Reach Historic Lows for All Age and Ethnic Groups. Centres for Disease Control and Prevention. www.usteeangerreach-historiclaws. 12 January 2020.
13. Holness N. A global perspective on adolescent pregnancy. *Int. Jr of Nursing Practice*. 2014;21(5):77-81.
 14. Jolley S. Promoting teenage sexual health: an investigation into the knowledge, activities and perceptions of gynecology nurses. *Jr of Advanced Nursing*. 2001;36(2):246-249.
 15. Kassa GM, Arowojolu AO, Odukogbe AA, Yalew AW. Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and Meta-analysis. *Jr of Repr. Health*. 2018;195(2):71-79.
 16. Kennedy SE. Are Adolescents Less Mature than Adults? *American Psychologist*. 2009;64(7):135-140.
 17. Modern Ghana. Central Region: 25 Pregnant School Girls Sitting For 2021, BECE at Ajumako. <https://www.modernghana.com/news/1118942/cr-25-pregnant-school-girls-sitting-for-2021.html>. 4 August, 2021.
 18. Moshia TCE, Philemon N. Factors influencing pregnancy outcomes in Morogoro Municipality, Tanzania. *Tanzania Journal of Health Research*. 2010;12(4):249-260.
 19. Nana A, Zema T. Dietary practices and associated factors during pregnancy in northwestern Ethiopia. *BMC Pregnancy Childbirth*. 2018;18(1):83-94.
 20. Nyamasege CK, Kimani-Murage EW, Wanjohi M, Kaindi D, Ma E, Fukushige M, *et al.* Determinants of low birth weight in the context of maternal nutrition education in urban informal settlements, Kenya. *Journal of developmental origins of health and disease*. 2019;10(2):237-245.
 21. Plan International. Adolescent Pregnancy. [https://planinternational.org/?s=adolescent pregnancy](https://planinternational.org/?s=adolescent+pregnancy). 19 November, 2019.
 22. Save The Children. Adolescent Sexual & Reproductive Health. Save the Child Federation.inc. Is a 501(c)(3) organization. <https://www.savethechildren.org/us/what-we-do/health/adolescent-sexual-and-reproductive-health>. 20 February, 2022
 23. Tt Zerfu A, Biadgilign S. Pregnant mothers have limited knowledge and poor dietary diversity practices, but favorable attitude towards nutritional recommendations in rural Ethiopia: evidence from community-based study. *BMC Nutrition*. 2018;4(43):83-94.
 24. UNICEF. Maternal Nutrition: Preventing Malnutrition in Pregnant and Breastfeeding Women. <https://www.unicef.org/nutrition/maternal>. 22 September, 2019
 25. UNICEF Report on The Regional Forum on Adolescent Pregnancy, Child Marriage and Early Union In South-East Asia And Mongolia. UNICEF Bangkok Publications, Thailand, 2019, 17-22.
 26. WHO/MPS.NOTES. Adolescent Pregnancy. <http://www.who.int/making-pregnancy/newsletter/mps-newsletter-issue6.pdf>. 23 September 2021.
 27. World Health Organization. Adolescent Pregnancy, 2019. <http://www.who.int/malerantchildadolescent/topics/maternal/adolescent/pregnancy/en/> 23 September 2021.
 28. WHO. Adolescent pregnancy. <https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy>. 17 November 2020.
 29. Zhao YQ, Zhang XX, Li D. Investigation on Nutrition Knowledge, Attitude and Practice of Pregnant Women and Lactating Mothers in Hanyuan County. *Modern Preventive Medicine*. 2011;2(1):5-12.