

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HEALTH SCIENCES

FACULTY OF ALLIED HEALTH SCIENCE

DEPARTMENT OF NURSING

DIPLOMA PROGRAMMES



**ASSESSING PREGNANT ADOLESCENT'S WOMEN KNOWLEDGE ON ANAEMIA
AT THE ANTENATAL SESSIONS IN HOLY FAMILY HOSPITAL, BEREKUM**

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2023

DECLARATION

We hereby declare that this submission is our work towards the Diploma in General Nursing and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of the diploma of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

The study focused on adolescent's women knowledge on anaemia at the antenatal sessions in Holy Family Hospital, Berekum. A descriptive cross-sectional survey was used to collect in-depth information for the study. The respondents were obtained using the convenient sampling method. A total of 50 pregnant women were sampled for the study. The data for the study was collected by administering a questionnaire to the participants.

The study found that the majority of respondents (n=45, 90%) have heard about anaemia. The majority of the respondents (32%) heard about anaemia from the hospital. The majority of the respondents (54%) perceived nutritional factors as the leading factor influencing anaemia in pregnancy, 38% revealed socio-economic factors as the leading factor influencing anaemia in pregnancy and 8% indicated socio-cultural factors as the leading factor influencing anaemia in pregnancy. The majority of the respondents (60%) indicated that they prevent anaemia by consuming Vitamin C-rich fruit, 30% of the respondents also suggested increasing dietary intake and 10% revealed personal hygiene.

The study recommended that women should be empowered in terms of their education and economic status which are key in combating this menace. Also, the nutritional status of pregnant women should be assessed to increase their energy and nutrient requirements.

The study concluded that anaemia as a health problem was high and the majority of the respondents perceived nutritional factors, socio-economic factors, and socio-cultural factors as factors that influence anaemia in pregnancy. However, the study revealed that socio-cultural factors contribute very little to anaemia during pregnancy.

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ABBREVIATION

WHO	World Health Organization
ANC	Antenatal Clinic
GHS	Ghana Health Service
HIV	Human Immune Virus
ITN	Insecticide Treated Net
HB	Haemoglobin
AIP	Anaemia in Pregnancy
FBC	Full Blood Count
ANV	Antenatal Visit
SPSS	Statistical Package for Social Sciences

ACKNOWLEDGEMENT

We would like to extend our deepest gratitude and praise to the Almighty God for providing us with strength and knowledge for this study.

We are much grateful to the Management and staff of the Holy Family Hospital, Berekum for allowing us to conduct the study in the Hospital.

We also thank the Department of Nursing of the Kwame Nkrumah University of Science and Technology for providing us with the guideline for the study.

Our deepest appreciation goes to our supervisor, Ms. Monica Boakye for her constructive criticisms, objective guidance, and direction for the study and the entire staff of the College for their support throughout the study.

We are grateful to all the respondents for their contributions and efforts. Without them, the study would not be possible. We also appreciate our parents for their financial, emotional, psychological, and spiritual support throughout our education.

Finally, our sincere appreciation goes to the authors and publishers of pieces of literature used in the study. Thank you all and God bless you.

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Anaemia is defined as a haemoglobin concentration less than 11.0g/dl. Anaemia is still one of the major public health problems worldwide and even with decades of proposed solutions, women in developing countries are still suffering the effects of having to go through pregnancy in anaemic state (Marks, 2018). Anaemia affects 41.8% of adolescent pregnant women aally, with the highest prevalence in Africa that is 57.1% which corresponds to 17.2 million adolescent pregnant women (WHO, 2017). The World Health Organization estimates 40% of pregnant women worldwide are anaemic, with iron deficiency anaemia being the most common form. Annually, nearly 510,000 maternal deaths occur worldwide, associated with childbirth or early postpartum complications (WHO, 2018). The World Health Organization recommends intermittent iron and folic acid supplementation for menstruating women living in settings where the prevalence of anaemia is 20% or higher and daily iron and folic acid supplementation for pregnant women as part of antenatal care in order to prevent anaemia in pregnancy (WHO, 2017). The WHO recommend focused antenatal care approach to antenatal clinic (ANC), which involves client-centered individualized care, disease detection and care by a skilled provider, implemented in Ghana. In Ghana, all pregnant women are expected to have their haemoglobin measured at first ANC attendance, 28 weeks gestation and 36 weeks gestation to identify and manage anaemia. It is important to assess haemoglobin level of pregnant women and its determinants regularly to inform treatment and preventive services (Ghana Health Service, 2017).

Anaemia is a major public health problem with about two billion people being anaemic worldwide (WHO, 2017). The global prevalence anaemia in pregnancy is estimated to be approximately 41.8% varying from a low of 5.7% in the United State of America to a high of 75% in Gambia (Galloway, 2016). Some women are anaemic even before they become pregnant and others become progressively anaemic during pregnancy (Goonewardene, 2018).

Globally, half a billion women of reproductive age (World Health Organization (WHO), 2018). In 2016, 29% of non-pregnant women, and 38% of pregnant women aged 15 – 49 years were anaemic worldwide but the prevalence was highest in South Asia and Central and West Africa (WHO, 2018). In Ghana, 45% of pregnant women were anaemic in 2016 (Ghana Health Service, 2017). Anaemia impairs the capacity of blood to transport oxygen around the body and is an indicator of poor nutrition and health (Brabin, 2017). Anemia is a major public health issue throughout the world, particularly in developing countries where it is an important contributor to maternal morbidity and mortality (WHO, 2017). It is also associated with an increased risk of miscarriage, prematurity, stillbirth, low birth weight, and consequently perinatal mortality (WHO, 2017). The main cause of anaemia in women of reproductive age globally is iron deficiency, resulting from prolonged negative iron balance, which accounts for 50% of anaemia in women worldwide (WHO, 2017). The negative iron balance may be due to inadequate dietary iron intake or absorption, increased needs for iron during pregnancy, and increased iron losses as a result of menstruation, worm infestation, and infections. Some genetic and socio-demographic and economic characteristics of women also influence the distribution of anaemia and should be taken into consideration in designing preventive interventions for anaemia (Galloway, 2016).

Infectious Diseases such as malaria, helminthes infestations, and HIV have been implicated in the high prevalence of anemia in sub-Saharan Africa (Ethiopian Public Health Institute, 2017

Anaemia is an important risk factor in pregnancy and it is associated with an increased incidence of both maternal and foetal morbidity and mortality. More than three percent of maternal mortality in Africa is directly attributable to anaemia (Regnault, 2016). Maternal anaemia also contributes to an increase in perinatal mortality, low birth weight, still birth and foetal wastage. Anaemia in pregnancy reduces tolerance to blood loss and leads to impaired function and cardiac failure (Mekonnen & Ambaw, 2018).

In the Berekum Municipality the prevalence of anaemia at registration for ANC services in 2019 (from January to December) was 254 and also pregnant women with anaemia at 36 weeks of gestation in 2019 was 395 which indicates an increase from the time of registration to the final weeks of pregnancy by 35.7%. (Berekum Municipality Health Directorate, 2019). Pregnant women are one of the most susceptible groups of getting anaemia, and are as a result of the additional demand on maternal nutrient supply during pregnancy (Bottalico, 2016). The most common type of anaemia in pregnancy is iron deficiency caused by inadequate intake of iron and excessive iron loss (McLean, 2019). In sub-Saharan Africa the main causes of anaemia in pregnancy are iron deficiency and malaria, followed by micronutrient deficiencies and infection (Brabin, 2017). The most common causes of anaemia in Ghana are inadequate dietary intake of iron, malaria and intestinal worm infestation (Ghana Health Service, 2017). A number of risk factors have been identified to cause anaemia during pregnancy and they include low iron consumption, frequent vomiting, multiple pregnancies and closely spaced pregnancies (World Health Organization, 2018). Nutritional causes of anaemia include folic acid, vitamin B12, pyridoxine, and ascorbic acid deficiency (Botalico, 2016)

In the Berekum Municipality the prevalence of anaemia in 2019, 2020 and 2021(January to February) was 64.5%, 46% and 78% respectively (Holy Family Hospital Berekum, 2021). To

address this issue the Ghana Health Service introduced interventions which included folic acid and supplementation, nutritional education at ANC, Intermittent preventive treatment and Insecticide Treated Net distribution to pregnant women even with the implementation of these interventions anaemia among pregnant women is still an issue in the Berekum Municipality (Berekum Municipality Health Directorate, 2019).

1.1 Problem Statement

The World Health Organization stated that any country with 40% or higher prevalence of anaemia in vulnerable groups has severe public health problem (WHO, 2016). In 2016, Ghana was classified as a country with severe public health implication of anaemia since estimated prevalence were 56% (non-pregnant women) and 62% (pregnant women) (WHO, 201). WHO has estimated that the prevalence of anaemia in developed and developing countries is 14% and 51% respectively (Singh, 2018). According to a baseline study on the prevalence of anaemia and the causes of anaemia in Ghana conducted in 2017 by GHS stated that about 65% of pregnant women in Ghana were found to be anaemic (Ghana Health Service, 2017). To address this issue the Ghana Health Service introduced interventions which included folic acid and supplementation, nutritional education at ANC, Intermittent preventive treatment and Insecticide Treated Net (ITN) distribution to pregnant women and even with the implementation of these interventions, anaemia among pregnant women is still an issue in the Ghana. Given this, it is important to identify factors influencing anaemia among pregnant women in the Berekum Municipality

1.2 General Objectives

To assess adolescent pregnant women's knowledge on anaemia and the factors influencing anaemia at ANC sessions on Holy Family Hospital, Berekum.

1.3 Specific Objectives

1. To assess the knowledge level of adolescent pregnant women on anaemia at Holy Family Hospital, Berekum.
2. To determine the factors influencing anaemia at ANC sessions in Holy Family Hospital, Berekum.
3. To identify measures to prevent anaemia at ANC sessions in Holy Family Hospital, Berekum.

1.4 Operational Definition

Adolescent: An adolescent is a young person who is developing into an adult.

Adolescent mothers: are described as mothers aged 19 years or younger at the time of delivery irrespective of the outcome of the pregnancy and irrespective of the mother's marital status.

Antenatal care: is the care that women receive during pregnancy that helps to ensure healthy outcomes for women and newborn.

Anaemia: is defined as a haemoglobin concentration less than 11.0g/dl.

Utilisation: is described using the frequency or number of visits to the antenatal care clinic made by a pregnant adolescent from the first visit until the end of pregnancy.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter contains a review of relevant literature related to the research topic. The review is organized along the lines of the specific objectives of the study. The sources of information include books, journals, online articles, and research reports.

2.1 Overview

Anaemia is described based on either Haemoglobin (Hb) or Haematocrit (Het) concentration in an individual. Nonetheless, the World Health Organization (2021) explains anaemia as a medical disorder in which the number and size of Red Blood cells or the Haemoglobin concentration falls below an established threshold. In other words, if the oxygen-carrying capacity of the blood is insufficient to meet physiologic needs in an individual, anaemia develops (Tripathy, 2018). A study conducted in August 2021 by Chaturanga Tripathy in Kenya with a sample size of 100 adolescent pregnant women provided a clear-cut definition of anaemia. It was documented that pregnancy, attitude, cigarette smoking, and possibly ethnicity must be accounted for whenever Hb is used to define anaemia (Tripathy, 2018).

Anaemia in pregnancy is defined as Hb concentration below 11.0 g/dl or haematocrit level below 33% at sea level (WHO, 2017). It is usually no standard deviations below the mean Hb expected (WHO, 2021). According to WHO (2020), anaemia in pregnancy is Hb concentration below 11 g/dl in the first half of pregnancy or 10.5 g/dl in the second half of pregnancy. WHO additionally categorized anaemia in pregnancy into mild anaemia (Hb = 10- 10.9g/d), moderate anaemia (Hb = 7.0-9.9g/dl) and severe anaemia (Hb < 7g/d).

2.2 Knowledge of anaemia among adolescent pregnant women.

Appiah and Nkuah (2020) conducted a study aimed to assess adolescent pregnant women's knowledge of anaemia in Juaboso District, which is located in the Western-North Region of Ghana. Five hundred and ninety-eight (598) participants were involved in the study. Descriptive cross-sectional data on the knowledge of adolescent pregnant women were collected. Different (multistage) sampling techniques were used to select respondents. The district was stratified into the existing number (4) of sub-districts. Pearson's chi-square and logistic regression models were used to assess associations between predictor and outcome variables. A value <0.05 was considered statistically significant. About 13.5% of the pregnant women had high knowledge of anaemia, while 58.4% and 28.1% had moderate and low knowledge, respectively. Less than half (39.1%) of the women adhered to the anaemia prevention strategies. There were significant associations between knowledge of anaemia and where the pregnant woman resides in the district. The study concluded that pregnant women's knowledge of anaemia was not encouraging. However, anaemia in pregnancy and its consequences could be devastating to all stakeholders if actions are not taken to reduce the phenomenon. The study recommended that more education and sensitization programs including good nutritional practices in the diet of pregnant women should be promoted to increase awareness among pregnant women in the Juaboso District.

Onyeneho and Subramanian (2019) conducted a study aimed to explore the factors that influence knowledge and attitudes towards Anaemia in Pregnancy (AIP) in south-eastern Nigeria. Hundred (100) women who delivered babies within 0 months of the survey using a questionnaire were randomly selected. Twelve focus group discussions were held with the grandmothers and fathers of the new babies, respectively. Six in-depth interviews were held with health workers in the study communities. Knowledge of prevention and management was poor with a median score of

10 points on a 50-point scale. The study concluded that living close to a health facility (p=0.031), having post-secondary education (p <0.001), being in paid employment (p=0.017), and being older (p=0.027) influenced the knowledge of AIP. Practices for the prevention and management of AIP were affected by a high level of education (p=0.034) and having good knowledge of AIP issues (p <0.00). The qualitative data revealed that unorthodox means were employed in response to anaemia in pregnancy. AIP awareness is high among the populations; however, management is poor because of poor knowledge of signs and timely appropriate treatment. Prompt and appropriate management of AIP is germane for positive pregnancy outcomes. Anaemia-related public education is an urgent need in Southeast Nigeria. Extra consideration of the diverse social development levels of the populations should be taken into account when designing new and improving current prevention and management programs for anaemia in pregnancy.

Adznam (2019) conducted a cross-sectional study to determine knowledge, attitude, and practice of anaemia among adolescent pregnant women in Putrajaya. The study was also conducted to identify the associations between knowledge, attitude, practice, and socio-demographic and antenatal characteristics. A total of 370 adolescent pregnant women participated in this study. Socio-demographic information and antenatal characteristics and knowledge, attitude, and practice concerning anaemia were collected using questionnaires. The Sysmex Haematology Analyser was used to measure the Full Blood Count (FBC) of adolescent pregnant women. The mean age and haemoglobin level of respondents were 30.2±4.2 years of age and 12.1±4.8 g/dl respectively. The median for the total knowledge score was 84.2 and the mean score for attitude and practice were 72.4±6.7 and 69.9±13.1, respectively. The study concluded that a positive attitude regarding anaemia influences a high level of knowledge and good practice concerning

anaemia. Increasing the level of awareness of anaemia among adolescent pregnant women is seen as an important step in improving knowledge, attitude, and practice regarding anaemia.

Margwe and Lupindu (2021) conducted a cross-sectional study involving 354 adolescent pregnant women in Mbulu District, Tanzania. The study aimed at assessing the trend in anaemia and knowledge and attitude of adolescent pregnant women towards control measures in low-income rural settings. Socio-demographic and anaemia related information was gathered, and anaemia status was determined. Knowledge and attitudes of adolescent pregnant women to anaemia were assessed using summated index and Likert scales respectively. Multivariable logistic regression was run to quantify the risk factors for the occurrence of anaemia. The overall score on the 11-point summated scale was 5.2, indicating low knowledge, while the overall score on the Likert scale was 21.7 out of 40 points, indicating an unfavorable attitude. High gravidity was a risk factor for anaemia during pregnancy (OR=13.09, 95% CI: 5.68 - 47.04 for 3-4 gravidity and OR=25.16, 95% CI: 12.46-37.23 for gravidity 2 5). There was an upsurge of anaemia prevalence and low knowledge and unfavorable attitude were associated with anaemia (p -value<0.001). The study concluded that there is a need to set appropriate anaemia knowledge transfer and attitude change strategies in the community to have a successful anaemia control program.

2.3 Factors influencing anaemia in pregnancy among adolescent pregnant women.

Alhady and Morsy (2020) conducted a descriptive study among 400 pregnant women in Egypt to determine the influence of some factors associated with anaemia during pregnancy such as age, socio-economic status, and nutrition. The concentration of haemoglobin is collected from analytical data and the personal, nutritional and socio-economic information was recorded using a questionnaire and interview. The investigation indicated that the prevalence of anaemia was

91.25% among the interviewed women with 27.5% mildly anaemic (11.0-9.0g/dl), 28.5% moderately anaemic (9.0-7.0g/dl), 32% severely anaemic (7.0-4.0g/dl) and 3.25% very severely anaemic (<4.0g/dl). In conclusion, the study revealed that the prevalence of anaemia was the same among women who attend clinical units and use iron supplementation and women who do not attend or use iron supplementation.

Kyung and Kang (2019) conducted a study that aimed to identify nutritional factors influencing anaemia among pregnant women in Senegal. The study used a mixed-method approach, collecting data via structured questionnaires administered to pregnant women in Senegal and semi-structured interviews with seven stakeholders. Questions for structured questionnaires were about nutritional factors influencing anaemia among adolescent pregnant women. For the quantitative analysis of the structured questionnaires, data from 17 participants were analyzed using independent t-tests, Pearson's correlation coefficients, and multiple linear regression analysis. Interview data were analyzed using an inductive thematic analysis approach. The interviews with seven stakeholders revealed that obstructive factors of nutritional management were insufficient nutritional programs within health centers, incomplete national policy on nutrition, and lack of general interest in under nutrition-related topics. The study indicated that insufficient nutritional programs within health centers and incomplete national policy on nutrition for adolescent pregnant women were harming pregnant women and therefore educating them must be considered to succeed in Senegalese nutrition projects.

Tabassum, Khan, and Qadir (2019) conducted a study which was aimed to determine the most common nutritional factor influencing anaemia in pregnancy at the Liaquat National Hospital, Karachi, a tertiary care center. A hospital-based study was designed, where women who delivered at the Liaquat National Hospital, Karachi between the periods June 2020 to June 2021

were enrolled in the study. Data were gathered about their antenatal progress and factors influencing anaemia in pregnancy. Descriptive statistics were done and the Chi-square test was performed to examine the relationship between outcome variables (anaemic/non-anaemic) and other independent variables. One hundred and twenty pregnant women (24%) were found anaemic. Among these seventy-two were mild anaemic (60%), while thirty percent (30%) were moderately anaemic and the remaining twelve (10%) were severely anaemic. Seventy-seven percent (77%) were identified to have iron deficiency anaemia. The study concluded that iron deficiency anaemia is the most common cause of anaemia in pregnancy and is a chief public health issue in developing countries.

Goswami and Kishore (2020) conducted a study aimed to evaluate socio-economic and demographic determinants of anaemia among pregnant women in India. Statistical analysis was performed on the cross-sectional weighted sample of 40,885 pregnant mothers from 2015 to 2019 National Family Health Survey by using multinomial logistic regression to assess the significance of some risk factors in different degrees of pregnancy in anaemia. Pearson's chi-squared test was applied to justify the associations of anaemia with different categories of the study population. The prevalence of anaemia was 69.5%: 26.2% mild, 40.4% moderate, and 2.9% severe anaemia. Overall prevalence rate, along with mild and moderate cases, showed an increasing trend up to 2 years of age and then decreased. Of the 28 Indian states in the study, 10 states showed very high prevalence, the highest being Bihar (77.9%). Higher birth order, a high index of poverty, low level of maternal education, mother's anaemia, non-intake of iron supplements during pregnancy, and vegetarian mother increased the risks of all types of anaemia among pregnant women ($p < 0.05$). The results suggested a need for proper planning and implementation of preventive measures to combat anaemia among pregnant women.

Economically underprivileged groups, maternal nutrition and education, and birth control measures should be priorities in the programs.

Kamath (2019) conducted a study aimed to examine the maternal risk factors associated with socio-economic influence on anaemia among antenatal and postnatal women in Kibaha district hospital, Tanzania. A prospective-retrospective cohort approach was carried out among 1,077 antenatal and 1,000 postnatal women. The haemoglobin was estimated using the *cyanmethaemoglobin* method. The maternal factors included were age, parity, education, and socio-economic status. Of the 1,077 antenatal women studied, 540 were anaemic. Among the 1,000 postnatal women, the prevalence was 537 (53.7%). The high prevalence was strongly associated with low socioeconomic status (OR 1.409 [1.048-1.899]; $p < 0.023$) which affected their knowledge and health-seeking behavior in both the groups. The study concluded that empowering women in terms of education and economic status is the key factor in combating anaemia in pregnancy to prevent the vicious cycle of associated problems.

Anlaaku (2020) conducted a cross-sectional study at the Sunyani Municipal Hospital from May to June 2020. All pregnant women aged 15 years and above who visited the Antenatal Clinic of the hospital during the period were eligible to participate in the study. Thirteen participants were randomly selected on each day of data collection from an average of 60 antenatal attendants using a sampling interval of five. The first participant was randomly selected among the first five who reported for antenatal care on each day. The subsequent fifth was selected until 13 participants were enrolled for the day. Data on socio-demographic characteristics such as age, educational level, number of children, occupation, marital status, source of income, wealth, and where they live were collected directly from the mothers using a questionnaire. The data were collected after the women had received ANC services for the day. For accuracy, some relevant

data were extracted from the ANC booklets. A total of 316 pregnant women aged 15 - 45 years (mean 28.42 years and SD+ 5.6 years) accessing ANC services at the Sunyani Municipal Hospital participated in the study. One hundred and thirteen (35.7%) of them were aged 25 - 29 years, 163 (51.6%) had basic level education and 69.0% (218/316) were self-employed. Most of the women (57.9%, 183/316) were married. As at the time of the study, 76.4% (120/316) of the women in their third trimester of pregnancy had made four or more ANC visits, whilst the majority of those in their first trimester (83.3%, 15/316) were coming for their second visit. Ninety-four (29.7%) of the women had not delivered before, whilst 137 (43.4%) of them have had more than one delivery, with 31.3% (99) of them carrying their third pregnancy. Out of the 316 participants, 129 (40.8%) were found to be anaemic (Hb <11.0 g/dl) at the time of their first ANC visit because of their occupation (mean Hb: 11.21 g/dl, range 6.8-15.1 g/dl). Seventy-nine (61.2%) of them had mild anaemia (Hb 9.0-10.9 g/dl) because of where they live, 48 (37.2%) had moderate anaemia (Hb 7.0-8.9 g/dl) whilst 2 (1.6%) had severe anaemia (Hb <7.0 g/dl). During their most recent ANC visit, it was revealed that most of the socio-economic factors (occupation, source of income, and marital status) were harming pregnant women.

Ouzennou and Hakima (2019) conducted a cross-sectional study to describe the cultural and demographic profile of a group of anaemic pregnant women and to determine the conditions influencing the development of anaemia in the Moroccan context. A retrospective cross-sectional study was conducted by structured interview among a group of Moroccan adolescent pregnant women (300 anaemic women and 425 non-anaemic). Data were collected on biodemographic and the socio-cultural conditions of the women, the characteristics of the pregnancy, and information relating to anaemia. Using the WHO classification criterion according to the severity of anaemia, 40.6%, 56.6% and 2.8% of anaemic women were respectively mildly, moderately,

and severely anaemic. Primiparity, unemployment, lower socioeconomic level, and illiteracy, were found to be associated with the development of anaemia in pregnant women. In Morocco, nutritional problems hamper human development and the improvement of health status. Knowledge of the strictness of deficiencies and factors associated are necessary to develop adapted strategies or interventions to the national context.

Kahkashan, Alwin, and Sobhith (2020) conducted a cross-sectional study among tribal residents of the Kannavam area from May 2019 to October 2020 to estimate the prevalence of anaemia and identify its cultural factors among pregnant women of Kannavam tribal area, Kerala, India. Using convenient sampling, 200 tribal people aged 18 years and above were selected, interviewed and a sample was collected. Proportions, chi-square test, and regression were used for analysis, and a p-value less than 0.05 was considered significant. The mean (ESD) age of the study participants was 33 years. The overall prevalence of anaemia in the study was 51% and is much higher than the Kerala state prevalence rates. Cultural factors and low socio-economic class were found to be common risk factors associated with anaemia among pregnant women. The study concluded that cultural factors were the most prevalent of anaemia among pregnant women in tribal residences. Cultural factors and low socio-economic status people were particularly vulnerable for developing anaemia and special focus must be given to them while administering preventive and control measures.

Shackleton (2019) conducted a study to rule out the cultural factors influencing anaemia amongst 204 pregnant women from five communities in the Kat River Valley, South Africa. A mixed-methods approach was used for the study. Sixty-seven percent (67%) of the women reported one or more food practices shaped by local cultural taboos or beliefs. The most commonly avoided foods were meat products, fish, potatoes, fruits, beans, eggs, butternut, and pumpkin, which are

rich in essential micronutrients, protein, and carbohydrates. Most foods were avoided for reasons associated with pregnancy outcome, labour and to avoid an undesirable body form of the baby. Some pregnant women in the study were considered nutritionally vulnerable due to the likelihood of decreased intake of nutrient-rich foods resulting from cultural beliefs and food taboos against some nutritious foods. The study concluded that encouraging such women to adopt a healthy diet with more protein-rich foods, vegetables and fruits would significantly improve maternal nutrition and children's nutrition. Adhering to culturally appropriate nutrition education may be an important care practice for many adolescent pregnant women in the Kat River Valley.

2.4 Measures to prevent anaemia among adolescent pregnant women.

Kayode and Oladunjoye (2019) conducted a cross-sectional study to review the effectiveness of preventive treatments of iron deficiency anaemia in pregnancy in the Kenyan South and highlighted their constraints as well as interventions required to strengthen the health services. A retrospective cross-sectional study was conducted by structured interview among a group of Kenyan adolescent pregnant women (600 anaemic women and 200 non-anaemic). Evidence-based preventive treatment options for iron deficiency anaemia in pregnancy include prophylaxis iron supplements and food fortification with iron. Evidence abounds on their effectiveness in reducing the prevalence of iron deficiency anaemia in pregnancy. However, these prospects are threatened by side effects of iron supplements, low utilization of maternal health services in developing countries, partial implementation of preventive treatments, and weak infrastructure and political commitment to implement mass fortification of local staple foods by national governments. The study revealed that the sustainability of effectiveness of preventive treatments

of iron deficiency anaemia in pregnancy could be achieved if the identified threats are adequately addressed.

Miibot and Yeetey (2020) conducted a cross-sectional study on the preventive measures to combat anaemia among pregnant women in the Bunkpurugu-Nakpanduri District of the North East region of Ghana. The World Health Organization has put in place some measures to help prevent anaemia during pregnancy, which requires countries including Ghana to integrate these measures in their antenatal care. The study sampled three hundred and sixty (360), adolescent pregnant women, as the participants using a simple random sampling technique. A quantitative research method was adopted for the study and questionnaires were used in gathering data. The collected data was analyzed quantitatively by the use of Statistical Packages for Social Sciences (SPSS version 20). Results revealed good knowledge and use of anaemia prevention strategies such as insecticide-treated net, use of iron supplements to the infant, food mixed with nutrients among adolescent pregnant women. The study revealed that most socio-cultural and health-related factors such as the attitude of health workers and availabilities of anaemia strategies among others have no negative effects with regards to the use of anaemia prevention strategies. However, the study found a significant relationship between distance to health facilities and the use of anaemia prevention strategies. The study recommended more health facilities be built in the district since the distance to health facilities is found to have a significant association with the use of anaemia prevention strategies.

Omeheon-si (2020) conducted a study in the district of Allada, a semirural area located in Benin to investigate the effectiveness of routine preventive measures for anaemia in Beninese adolescent pregnant women during pregnancy. Anaemia (haemoglobin < 110 g/L) was common: 68.3% at first antenatal visit (ANV1), 64.7% at second antenatal visit (ANV2), and 40.6% at

delivery. At enrolment (ANVI), all adolescent pregnant women who attended any of the maternity clinics for an antenatal visit were approached to participate in the study. They were screened for inclusion and exclusion criteria, and socio-demographic data, such as age, parity, area of residence, marital status, level of education, occupation, and socioeconomic characteristics (sanitation in the house, personal means of transportation, possession of fridge or television, and electricity connection) were recorded. At ANVI, the women were examined and parity, gestational age, middle-upper arm circumference, weight, and height were recorded. The study revealed that the effectiveness of preventive measures was assessed at ANV2 and delivered by studying the variations of the risk factors found at ANVI before any prevention.

Fleming and Briggs (2021) conducted a descriptive study aimed to describe the effectiveness of antimalarial and iron in anaemia prevention among adolescent pregnant women. Two hundred (200) Hausa primigravidae at Zaria in the Guinea Savanna of Nigeria, were divided into five groups in a randomized double-blind trial of antenatal oral antimalarial prophylaxis, and haematinic supplements. Group 1 received no active treatment. Groups 2 to 5 were given chloroquine 600 mg base once, followed by proguanil 100 mg per day. In addition group 3 received iron 60 mg daily, group 4 received folic acid 1 mg daily, and group 5 received iron plus folic acid. Forty-five percent were anaemic (haemoglobin (Hb) < 11:0 g dl⁻¹) at first attendance before 24 weeks of gestation, and malaria parasitaemia (predominantly *Plasmodium falciparum*) was seen in 27%, of whom 60% were anaemic. The mean Hb fell during pregnancy in group 1, and seven patients in this group had to be removed from the trial and treated for severe anaemia (packed cell volume (PCV)<0-26). Only five patients in the other groups developed severe anaemia (P=0-006), two of whom had malaria following failure to take treatment. Patients in the group had the lowest mean Hb at 28 and 36 weeks of gestation, and patients receiving

antimalarial and iron (groups 3 and 5) had the highest Hb at 28 weeks, but differences were not significant, possibly due to removal from the trial of patients with severe anaemia. The study concluded that anaemia (Hb < 12.0 g dl⁻¹) at six weeks after delivery was observed in 61% of those not receiving active treatment (group 1), in 39% of those protected against malaria but not receiving iron supplements (groups 2 and 4) and in only 18% of patients receiving both antimalarial and iron (groups 3 and 5). Prevention of malaria, without folic acid supplements, reduced the frequency of megaloblastic erythropoiesis from 56% to 25%. A regime is proposed for the prevention of malaria, iron deficiency, folate deficiency, and anaemia in pregnancy in the Guinea Savanna of Nigeria.

CHAPTER THREE

MATERIALS AND METHODS

3.0 Introduction

This chapter talks about the study area, study population, study design, sampling techniques, data collection method and instrument, data analysis techniques, ethical consideration, and the limitations of the study.

3.1 Study area

Berekum is one of the biggest town in the Bono Refon of Ghana. It has numerous basic schools, about five senior high schools, one Teacher Training College and one Nursing Training College in the Municipality. There is also a Catholic Hospital (Holy Family Hospital, Berekum) and some other private clinics in the town.

The study was conducted at the Holy Family Hospital, Berekum. The hospital is a Christian Health Association of Ghana (CHAG) facility under the National Catholic Health Service (Catholic Diocese of Sunyani). The facility is located on the Biadan road, and 36.8km from Sunyani which serves as a Municipal Hospital. Due to the strategic location of the hospital, patients from other parts of Ghana and neighboring countries like La Cote D'Ivoire visit the hospital. The hospital has a bed capacity of about 200 beds and provides services such as; inpatient (Paediatric, Males, Females, and Surgical) wards, outpatient, Reproductive and Child Health Clinic, Maternity and Labour and Emergency, Psychiatric unit, Eye clinic: Ear, Nose and Throat clinic, Dental clinic and Theater. The Post-Natal services are part of the Reproductive and child health department where care is provided for babies and mothers on five (5) working clinic days per week.

3.2 The study population

The target population for the study is all pregnant women in the Berekum Municipality and the accessible population is adolescent pregnant women(aged 14-19 years) visiting the Antenatal Clinic of the Holy Family Hospital, Berekum.

3.3 Study design

A descriptive cross-sectional survey was used in this study. This design was employed because adolescent pregnant women have unique or different characteristics that need to be studied at a point in time. The design also paved way for data collection to be done at the same time from people who are similar on other characteristics but different on key factors of interest such as age, income source, income levels, or geographic location. A descriptive study was employed to describe objectively the nature of anaemia among adolescent pregnant women.

3.4 Sampling technique and size

A total of fifty (50) adolescent pregnant women were selected for the study. The respondents were obtained using the convenient sampling method. This method was used because it is inexpensive and respondents are easy to reach. The first 50 adolescent pregnant women who visited the ANC from 9:00 am to 11:00 am were selected.

3.5 Data collection methods and instruments

Data collection was done through the use of structured questionnaires consisting of both closed-ended and open-ended questions for easy expression of views and ideas. This was chosen as the method of data collection because it is relatively cheaper, avoided embarrassment on the part of the respondents, and the complete anonymity of respondents. Questionnaires were shared with adolescent pregnant women who attended ANC sessions. We explained to them how the

questionnaires were to be filled. Each adolescent pregnant woman used a maximum of 20 minutes to complete the questionnaire.

3.6 Data analysis techniques

The data obtained from the study was verified for accuracy, utility, and completeness. Data was analyzed using Microsoft Excel 2013 and results were presented in tables and figures.

3.7 Ethical consideration

An introductory letter was sent to the Management of the Holy Family Hospital, Berekum for approval to conduct the study. Participants were informed of the benefits, risks, purpose, and procedure of the study and their right to withdraw from the study at any point without penalty.

All participants agreed voluntarily to be part of the study. Respondents were assured of anonymity and confidentiality by not providing any form of identification on the questionnaire.

However, identification codes were used to represent the respondent according to their chronologic entry into the study.

3.8 Limitations of the study

The study was limited by the convenience sampling method that was used to select participants since not every participant had an equal and independent chance of being selected. Also, it was difficult to generalize our findings since a small sample size and one facility were used.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter presents a detail analysis of the data gathered from the field. The results are presented in tables and figures. The analysis data was done according to the specific objectives of the study. The results are categorized into the demographic characteristics of the respondents, knowledge of anaemia among pregnant adolescents, factors influencing anaemia in pregnant women and measures to prevent anaemia among pregnant women who attend ante-natal care sessions.

4.1 Demographic Characteristics of the Respondents

Table 1: Age Distribution of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
16-18	13-15	2	4
	16-18	28	56
	18-20	20	40

From Table 1, less than half of the respondents (4%) were aged between 13-15 years, most of the respondents (56%) were aged between 16-18 years. Forty percent (40%) of the respondents were aged between 18-20years.

Table 2: Employment Status of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Employment status	Self employed	19	38
	Employed by someone	15	30
	Unemployed	16	32

Most of the respondents (38%) were self-employed, 30% of the respondent were employed by someone and 32% of the respondents were unemployed.

Table 3: Marital Status of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Marital status	Single	35	70
	Married	15	30
	Divorced	0	0

From table 3, most of the respondents (70%) were single, 30% of the respondent were married and none of them was divorced.

Table 4: Educational Background of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Educational background	None	2	4
	Primary	14	28
	J.H.S.	18	36
	S.H.S	16	32
	Tertiary	2	4

Few of the respondents never had education (4%). 28% of the respondents chose primary, 36% of the respondents chose J.H.S., some of the respondents (32%) chose S.H.S. and 30% of the respondents chose tertiary.

Table 5: Religions of Respondents

Variable	Categories	Frequency (n)	Percentage (%)
Religion	Christianity	35	70
	Islamic	12	24
	Traditional	3	6
	Others	0	0

From table 5, most of the respondents (70%) are Christians, 24% of the respondents are Moslems and 6% of the respondents are Traditionalists.

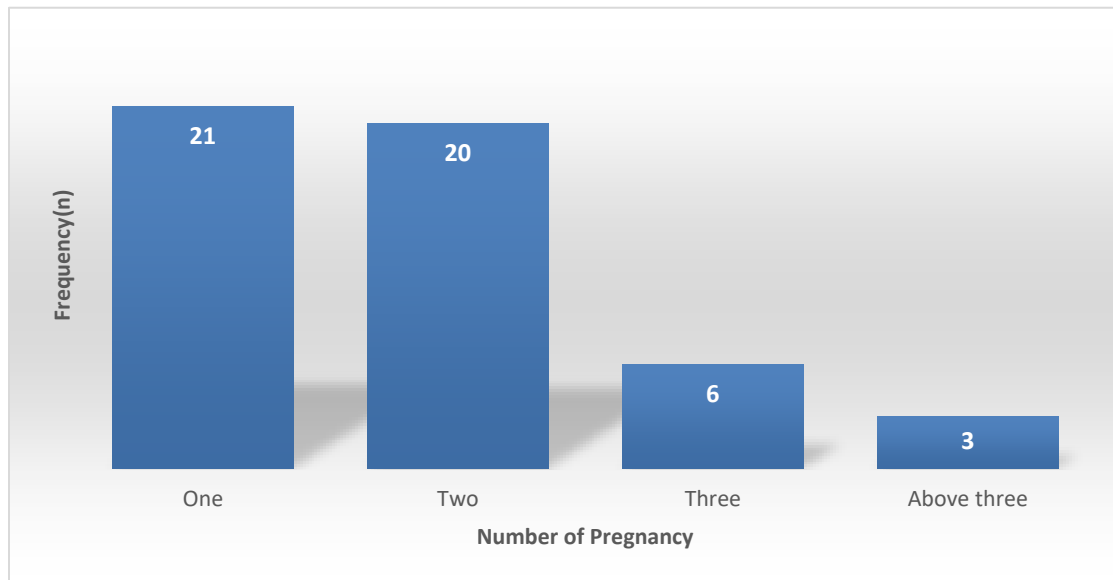


Figure 1: Respondents number of pregnancies.

From figure 1, most of the respondents (n=21, 42%) indicated "one" as their first time of pregnancy, 40% (n=20) of the respondents indicated two" as their second time of pregnancy, 12% (n=6) of the respondents indicated three as their third time of pregnancy and 6% (n=3) of the respondents indicated above three" as having more than three pregnancies.

4.2 Knowledge level of anaemia in pregnancy.

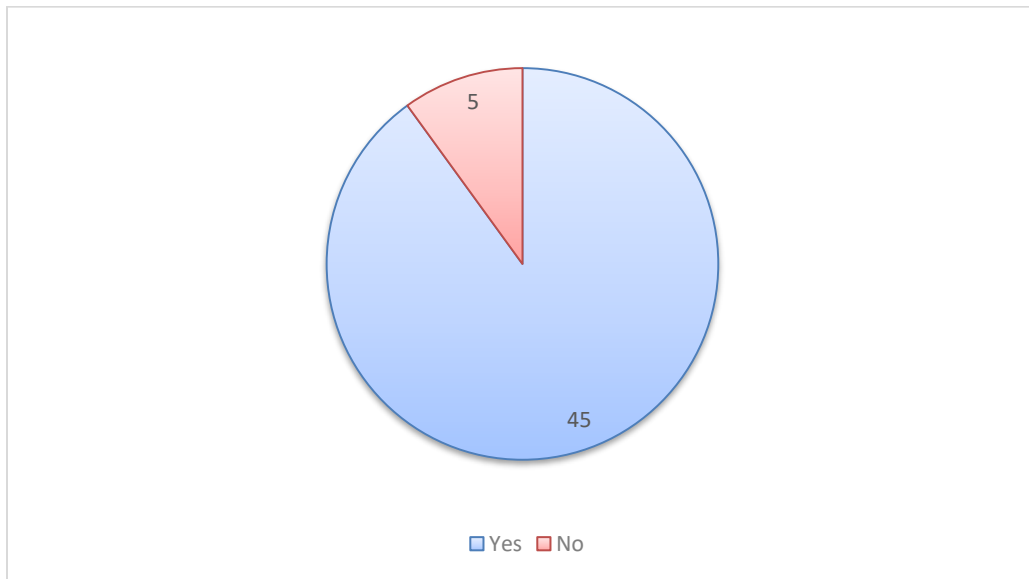


Figure 2: Respondents knowledge level on anaemia.

From figure two, most of the respondents (90%) revealed they have heard about anaemia and 10% indicate they have not heard about.

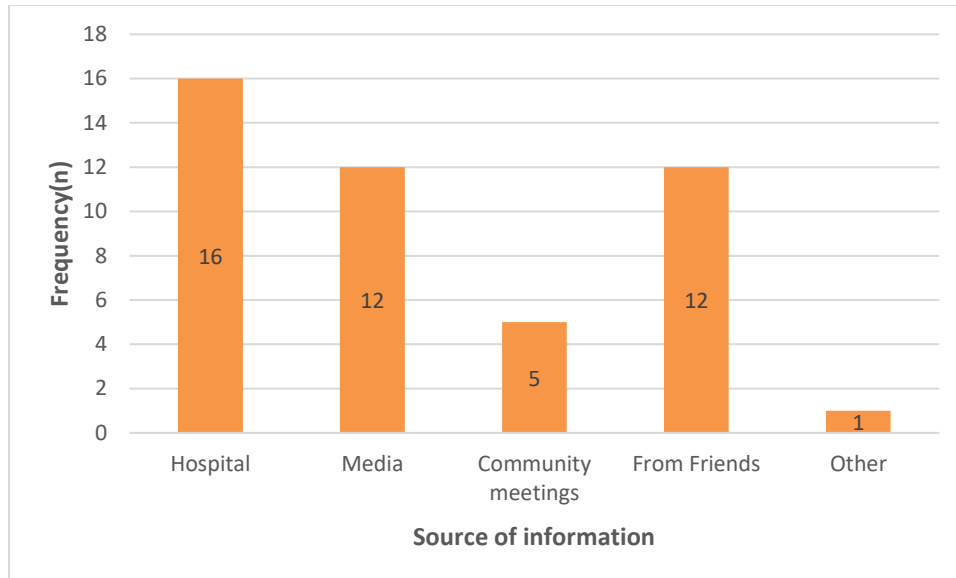


Figure 3: Respondents source of information.

From figure three, most of the respondents (32%) indicated that they heard about anaemia from the hospital, 24% of the respondents also indicated that they heard about anaemia from the media, another 24% of the respondents indicated that they heard it from their friends, 10% of the respondents indicated that they heard anaemia at community meetings and 2% of the respondents revealed it was heard anaemia at other places (school).

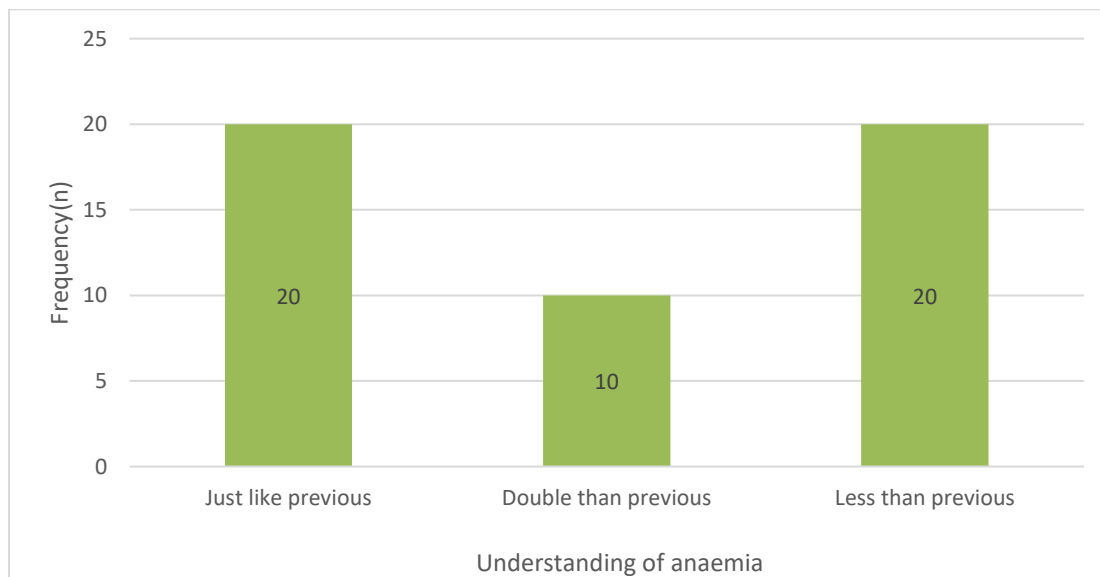


Figure 4: Respondents understanding of anaemia.

From figure four, most of the respondents (56%) understood anaemia as decrease iron in blood, 34% of the respondents understood anaemia as increase in blood and 7% of the respondents did

not
know

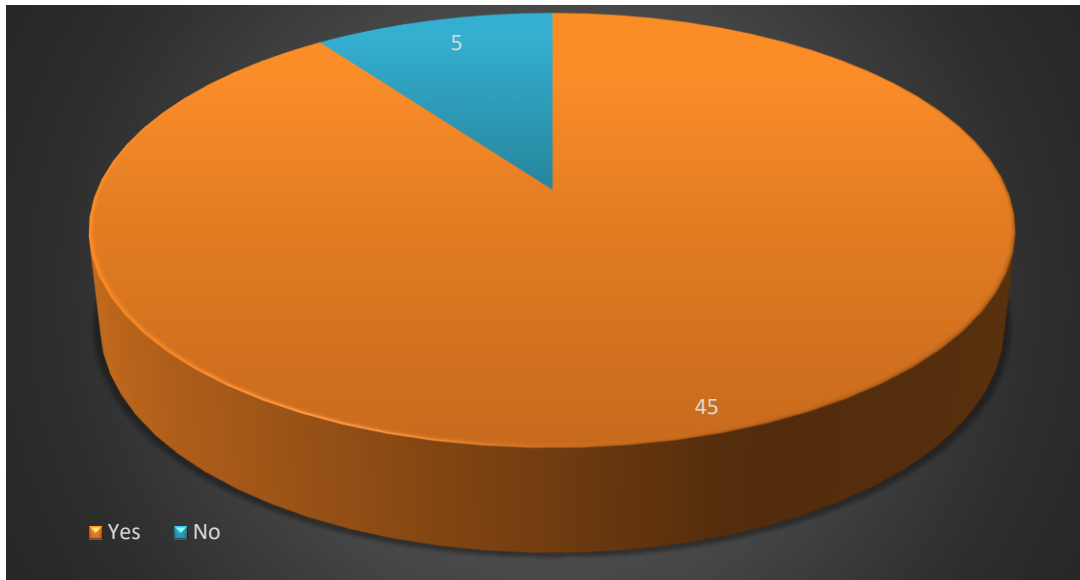


Figure 5: Respondents knowledge level on anaemia.

From figure five, most of the respondents (n=45, 90%) suggested anaemia is a health problem and 10% (n=5) indicated anaemia is not a health problem.

Table 6: Respondents knowledge level on anaemia.

Variable	Categories	Frequency (n)	Percentage
What are some of the	Fatigue	7	14

symptoms of anaemia?	Decrease appetite	8	16
	Pale skin colour	4	8
	Weakness	6	12
	Chest pain	7	14
	Shortness of breath	1	2
	Dizziness	2	4
	Headache	10	20

From table six, seven (7) of the respondents indicated that fatigue as part of the signs and symptoms of anaemia (14%), eight (8) of the respondents indicated that decrease appetite as part of the signs and symptoms of anaemia (16%), four (4) of the respondents chose pale skin colour (8%), six (6) of the respondents indicated weakness (12%), seven (7) of the respondents indicated chest pain (14), one respondent indicated shortness of breath (2%), two (2) of the respondents indicated dizziness (4%) and the majority (10) of the respondents indicated headache as part of the signs and symptoms of anaemia (20%).

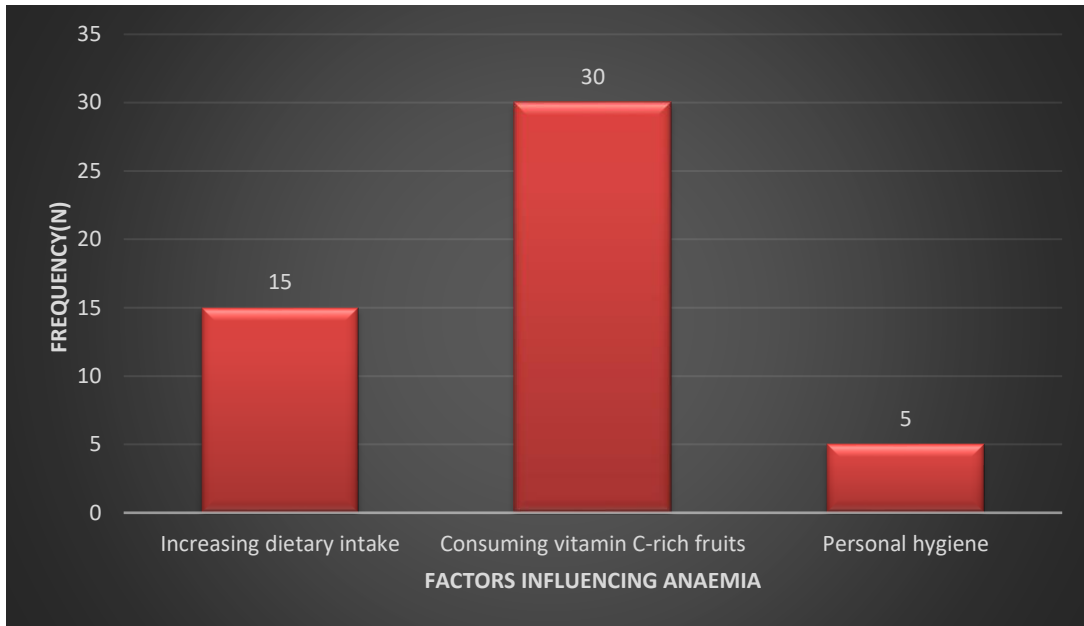


Figure 6: Respondents perception on factors influencing anaemia.

From figure six, majority of the respondents (50%) suggested nutritional factor as the leading factor influencing anaemia in pregnancy, 38% suggested socio-economic factor and 2% indicated socio-cultural factors. Eighty-four percent (84.3%) of the respondents indicated that, eating enough fruits and vegetable can help prevent anaemia and 2.4% suggested that regular prayers can help prevent anemia also.

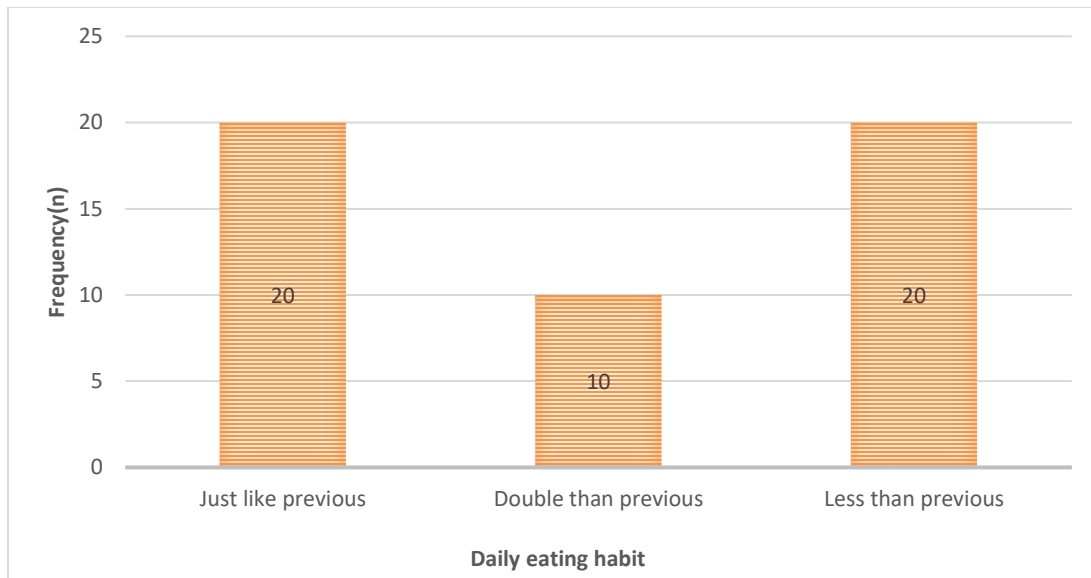


Figure 7: Respondents daily eating habits.

Forty percent (n=20, 40%) of the respondents indicated just like previous, 20% of the respondents suggested double than previous and 40% of the respondents suggested less than previous as their daily eating habit.

Respondents were asked how they control socio-economic factors causing anaemia. The majority of the respondents (n=39, 87%) indicated "working to earn money for living and family support.

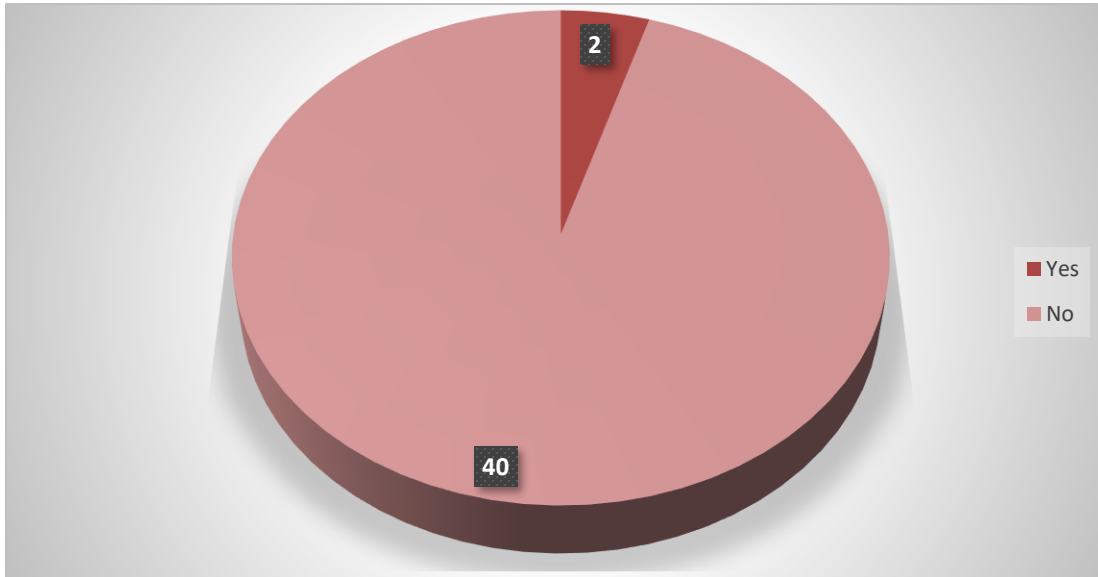


Figure 8: Respondents perception about cultural factors causing anaemia.

From figure eight, majority of the respondents (n=40, 80%) indicated "No" and 4% (n=2) indicated "Yes" to whether their cultures contribute effectively to anaemia in pregnancy" respectively.

Respondents were asked, if yes what is the evidence of its effectiveness and if no why. The majority of the respondents (n=29, 64%) indicated because there are no restrictions on their foods.

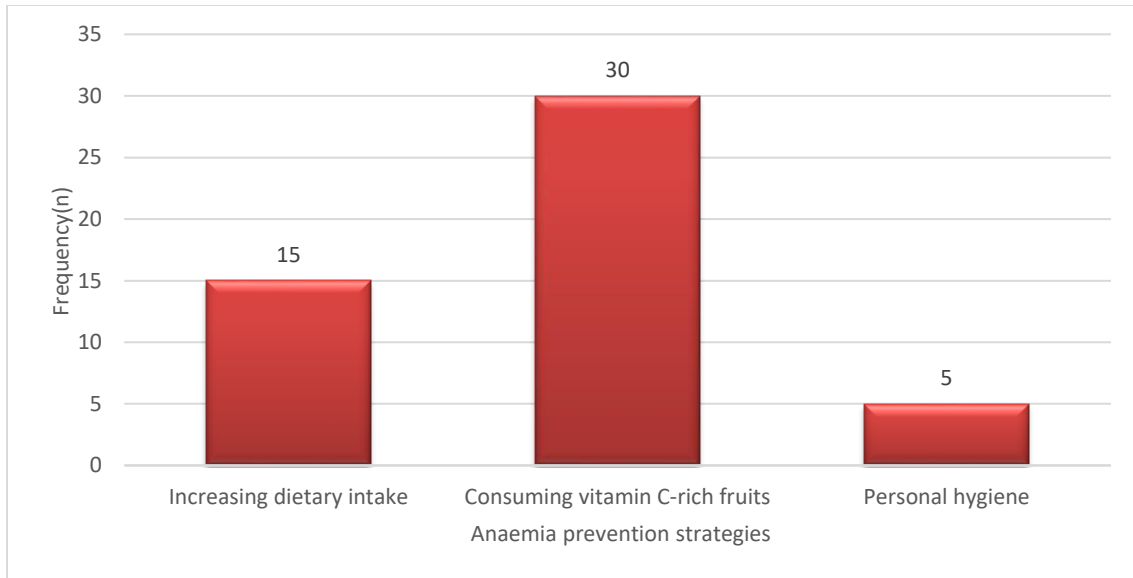


Figure 9: Respondents anaemia prevention strategies

From figure nine, majority of the respondents (60%) indicated that, they prevent anaemia by consuming vitamin C-rich fruit, 30% of the respondents also indicated increasing dietary intake and 10% indicated personal hygiene.

Respondents were asked, the problem they face in practicing anaemia prevention. Majority of the respondents (n=31, 68%) indicated "not getting enough nutritious food and high cost of living.

Respondents were asked, what they do to solve the problem the face. Majority of the respondents (-33, 73.3%) indicated "support from family" and (n=7, 15.5%) indicated "self-medication"

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter provides an in-depth look at the major findings that emerged out of the research, comparison of the analyzed data with findings from other literature, conclusion and recommendation.

5.1 Discussions

5.1.1 Knowledge level of anaemia among pregnant women.

Respondents were asked whether they have heard about anaemia or not. An important finding from the data gathered suggested that the majority (n=45, 90%) of the respondents indicate yes meaning they have heard about anaemia. This finding contradict a study conducted by Margwe and Lupindu (2018), where there was upsurge of anaemia prevalence and low knowledge and unfavorable attitude were associated with anaemia.

Majority of the respondents (32%) indicated, that they heard it from the hospital, 24% of the respondents also indicate that they heard it from the media, another 24% of the respondents indicate that they heard it from their friends, 10% of the respondents indicate that they heard it at community meetings and 2% of the respondents indicate that it was heard at other places (school).

Majority of the respondents (56%) understood anaemia as decrease iron in blood, 34% of the respondents understood anaemia as increase iron in blood and 7%% of the respondents did not know. This finding contradict a study conducted by Appiah and Nkuah (2020), with about 13.5%

the pregnant women had high knowledge on anaemia, while 58.4% and 28.1% had moderate and low knowledge, respectively.

5.1.2 Nutritional factor influencing anaemia in pregnancy.

The majority of the respondents (50%) perceive nutritional factor as the leading factor influencing anaemia in pregnancy, 38% indicate socio-economic factor and 2% indicate socio-cultural factors. Similarly, according to the Ethiopian Public Health Institute (2017), it was revealed that the energy and nutrient intake of the pregnant women in study area was below the recommended intakes. Nutritional status of pregnant women in study area was not adequate to support the increased energy and nutrient requirement of the participants.

Respondents were asked how they control nutritional factors causing anaemia. An important finding from the data gathered suggested that 84.3% of the respondents disclose that eating enough fruits and vegetable can help prevent anaemia and 2.4% indicate that regular prayers can help prevent anemia also. Similarly, according to Tabassum, Khan and Qadir (2019) indicate that the consumption of green leafy vegetables among others can help prevent anaemia.

5.1.3 Socio-economic factors influencing anaemia among pregnant women.

Most of the respondents (38%) perceive socio-economic as a factor influencing anaemia in pregnancy and 270 indicate socio-cultural factors. Similarly, according to Akinwumi and AKintayo (2016), anaemia prevalence was significantly higher among the subjects in the middle and lower socio-economic classes: 78.3% and 80.50 respectively ($P < 0.05$). The majority of the severely anaemic subjects (80.0%) were from the lower social class. The study concluded that low socio-economic status is associated with increased prevalence and severity of anaemia.

5.1.4 Cultural factors influencing anaemia among pregnant women.

Majority of the respondents (80%) indicate no and 4% indicate yes respectively as on how their culture contribute effectively to anaemia in pregnancy. This finding contradicts a study conducted by Kakhkashan, Alwin and Sobhith (2017), who concluded that, cultural factors were the most prevalence of anaemia among pregnant women in tribal residence.

Respondents were asked the evidence of the effectiveness of cultural factors. The majority of the respondents (n=29, 040) disclose that "because there are no restrictions on their foods there is no effect. This finding contradict a study conducted by Shackleton (2019) who stated that overall, 67% of the women reported one or more food practices shaped by local cultural taboos or beliefs. The most commonly, avoided foods were meat products, fish, potatoes, fruits, beans, eggs, butternut and pumpkin, which are rich in essential micronutrients, protein and carbohydrates.

5.1.5 Measures to prevent anaemia among pregnant women.

Majority of the respondents (60%) indicate that, they prevent anaemia by consuming vitamin C - rich fruit, 30% of the respondents also suggest increasing dietary intake and 10% reveal personal hygiene. Similarly, Gimcheon-si (2020) concluded that, results obtained from the respondents clearly showed that, almost all of the pregnant women interviewed took in vegetables and fruits which is proven to help prevent anaemia.

Respondents were ask the problem they face in practicing anaemia prevention. Majority of the respondents (n=31, 68%) suggest "not getting enough nutritious food and high cost of living" Similarly, Kayode, Osungbade and Oladunjoye (2019) concluded that anaemia preventions are threatened by low utilization of maternal health service in developing countries, partial

implementation of preventive treatments, and weak infrastructure, political commitment to implement mass fortification of local staple foods by national governments and high cost of living.

5.2 Conclusion

The following conclusions were drawn from the study.

1. The majority of the respondents (n=45, 90%) have heard about anaemia.
2. Majority of the respondents (56%) understood anaemia as a decrease iron in blood.
3. Most of the respondents (90%) concluded that anaemia is a health problem.
4. The majority of the respondents (90%) indicate nutritional factors, socio-economic factors and socio-cultural factors as factors influencing anaemia in pregnancy.
5. The study revealed that socio-cultural factors contributed very little to anaemia during pregnancy.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made.

1. Women should be empowered in terms of education and economic status, the key factor in combating anaemia in pregnancy to prevent the vicious cycle of associated problems.
2. Nutritional status of pregnant women should be assessed to increase the energy and nutrient requirements.

3. More education and sensitization programs including good nutritional practices in the diet of pregnant women should be promoted to increase awareness of anaemia.

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APPENDIX I
QUESTIONNAIRE

INTRODUCTION

Dear Respondent,

We are students of the Holy Family Nursing and Midwifery Training College, Berekum researching the topic; “assessing pregnant adolescent’s women knowledge on anaemia at the antenatal sessions in Holy Family Hospital, Berekum”.

Kindly answer the under-listed questions by ticking (√) the appropriate box or writing in the space provided. Any information you provide is confidential. Your opinion is neither considered right nor wrong. You can choose to withdraw your participation at any time without any penalty.

It will take approximately 20 minutes to answer this questionnaire.

Thank you.

PLEASE TICK [√] THE APPROPRIATE BOX WHERE APPLICABLE

SECTION A: BIOGRAPHICAL INFORMATION

1. Age:

- A. 14 - 16 years []. B. 17- 19 years []

2. Employment Status:

- A. Self-employed [] B. Employed by someone [] C. Unemployed []

D. Other, please specify.....

3. Marital status:

A. Single [] B. Married [] C. Divorced []

4. Educational background:

A. none [] B. Primary [] C. Junior High School [] D. Senior High School []

E. Tertiary []

5. Religion A. Christianity [] B. Islamic [] C. Traditional []

D. Other, please specify.....

6. Number of pregnancies A. One [] B. Two [] C. Three [] D. Above three []

SECTION B: RESPONDENT'S KNOWLEDGE OF ANAEMIA

7. Have you heard about anaemia? A. Yes [] B. No []

8. If **yes**, indicate your source of information on anaemia.

A. Hospital [] B. Media [] C. Community Meeting [] D. From a friend []

D. Other, please specify.....

9. What do you understand about anaemia?

A. Decreased iron in blood [] B. Increased iron in blood [] C. Do not know []

D. Other, please specify.....

10. Is anaemia a health problem? A. Yes [] B. No []

11. What are some of the symptoms of anaemia? (**Please tick as many that apply**)

A. Fatigue [] B. Decrease appetite [] C. Pale skin colour [] D. Weakness []

E. Chest pain [] F. Shortness of breath [] G. Dizziness [] H. Headache []

SECTION C: RESPONDENT'S PERCEPTION ON FACTORS INFLUENCING ANAEMIA

12. What are some of the factors influencing anaemia in pregnant women?

A. Nutritional factors [] B. Socio-economic factors [] C. Socio-cultural factors []

13. Your daily eating habits are:

A. Just like previous [] B. Double than previous [] C. Less than previous []

14. How do you control socio-economic factors causing anaemia?

A. I work []

B. Family help me sometimes []

C. No support []

D. Other, please specify.....

15. Does your culture contribute effectively to anaemia in pregnancy?

A. Yes [] B. No []

SECTION D: MEASURES TO PREVENT ANAEMIA AMONG ADOLESCENT PREGNANT WOMEN.

16. How do you prevent anaemia?

- A. Increasing dietary intake []
- B. Eat foods high in Vitamins []
- C. Personal hygiene []
- D. Other, please specify.....

17. What problem do you face in practicing anaemia prevention?

- A. Financial issues []
- B. My occupation []
- C. Sometimes, getting the prescribed food to eat is the problem []

18. What do you do to solve the problem(s) you face in practicing anaemia prevention?

- A. Increasing dietary intake []
- B. Eat foods high in Vitamins []
- C. Personal hygiene []
- D. Regular visit to the ANC []
- E. Taking my medications []
- F. Other, please specify.....

RESARCH TOPIC

ASSESSING ADOLSCENT PREGNANT WOMEN'S KNOWLEDGE ON ANAEMIA AT
THE ANTENATAL CLINIC IN HOLY FAMILY HOSPITAL, BEREKUM.

STUDENT NAMES

VIVIAN ADDAE

FELICITY KYERAA AGYEMANG

DOROTHY ATTA ACQUAH

HOSPITAL NAME

HOLY FAMILY HOSPITAL, BEREKUM

SUPERVISOR

MS. MONICA BOAKYE

SIGNATURE


.....

**HOLY FAMILY NURSING AND MIDWIFERY TRAINING COLLEGE
BEREKUM**



BANKERS:

Ghana Commercial Bank, Berekum
Agric Development Bank, Berekum
Fidelity Bank, Berekum



P. O. Box 21,
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Ghana, W/Africa
Tel. 0352222124
Fax: 0352222474

Our Ref. ...HFNMTC/GC/011/091923

Your Ref.

Date September 19, 2023

The Nursing Administrator
Holy Family Hospital
P.O. Box 21
Berekum
Bono Region



Dear Nursing Administrator

PERMISSION TO CONDUCT RESEARCH

I wish to introduce to you the under listed names of final year students of the College:

1. Vivian Addae
2. Felicity Kyeraa Agyemang
3. Dorothy Atta Acquah

As part of the pre-requisite for the award of Diploma in Midwifery they are to conduct a research study, on the topic 'Assessing Adolescent Pregnant Women's Knowledge on Anaemia at the Antenatal Clinic in Holy Family Hospital, Berekum.'

I would be grateful if you could assist them with any material or help they may need to accomplish this task.

Thank you.

Yours sincerely

Monica Boakye
Supervisor

For: Principal

Received on 29/09/2023
Waghty