

**PERCEPTION AND UNDERSTANDING OF PREGNANT WOMEN
TOWARDS THE USE OF FOLIC ACID SUPPLEMENT: THE CASE STUDY
OF TEMEKE DISTRICT**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF SOCIAL WORK
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CERTIFICATION

The undersigned certify that he has read and hereby recommend for examination of thesis/dissertation entitled **Perception and understanding of Pregnant Women towards the use of Folic Acid Supplement: the Case Study of Temeke District**, in partial fulfillment of the requirements for the degree of Master of Social Work of The Open University of Tanzania.

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Date

DEDICATION

This dissertation is lovingly dedicated to my Mother and the late Father for their support and guidance

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ABSTRACT

This study investigated the perception and understanding of pregnant women towards the use of folic acid supplement. The study was conducted at Temeke District in Dar es Salaam region. Data were collected using Focused Group Discussion as well as In-depth interview. The study reveals that most of women were aware of the FeFo supplement given to women before, during and after pregnancy. The finding also shows that most women are aware of the anemia as one of the dangerous diseases which can cause death of both a mother and unborn child. Findings suggest that the supplements available and accessible to all women are free of charge. Findings also reveal that health providers are all aware of dosage the pregnant women required before, during and after giving birth. Moreover finding signifies that there is still very low level of understanding among the women concern the use of these supplement especially on the positive and negative effect if they are taken or ignored respectively. The study reveals that some women drop or ignore using the medication deliberately simply because they have bad smell or make them uncomfortable. The findings on the side of health providers showed that 30.0% of the pregnant women prescribed with supplement do not finish the dose; they assert that it brings nauseas and affect their digestive system. The findings also signifies that regardless of the education provided to people especially Pregnant women yet it's upon the understanding of women to determine their fate as you cannot force them. The study reveals that there are women deliberately decide not to take the supplement and therefore the problem remained unsolved. The study concludes that regardless of the education provided to people especially pregnant women, yet it's upon the understanding of women to determine their fate as you cannot force them.

TABLE OF CONTENTS

CERTIFICATION	ii
COPYRIGHT	iii
DECLARATION.....	iv
DEDICATION.....	v
ACKNOWLEDGEMENT.....	vi
ABSTRACT.....	vii
TABLE OF CONTENTS	viii
LIST OF TABLES	xi
LIST OF ABBREVIATION.....	xii
CHAPTER ONE	1
1.0 INTRODUCTION.....	1
1.1 Introduction.....	1
1.2 Background to the Research Problem.....	2
1.3 Anemia in Pregnant Women.....	4
1.3.1 Tanzania Nutrition Policy and Strategies.....	5
1.3.2 The Economic Cost of Micronutrient Deficiencies in Tanzania.....	6
1.4 Statement of the Problem.....	8
1.5 Objective of the Study	10
1.5.1 General Objective	10
1.5.2 Specific Objectives	10
1.5.3 Research Questions	11
1.5.4 Significance of the Study	11

CHAPTER TWO	12
2.0 LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 The Use of Folic Acid and Anemia Problem in Tanzania.....	13
2.3 Effect of Anemia.....	16
2.4 Theoretical Framework.....	18
CHAPTER THREE	22
3.0 RESEARCH METHODOLOGY	22
3.1 Study Area	22
3.1.1 Characteristics of the Study Area.....	22
3.1.2 Study Population	22
3.2 Research Design.....	23
3.3 Sampling Procedures	23
3.4 Method of Data Collection.....	24
3.4.1 Interview	24
3.4.1.1 The Process Used During the Interviews.....	24
3.4.2 Focus Group Discussion	25
3.4.3 Focus Group Discussion Guide	25
3.5 Data Analysis	26
3.6 Sample Size.....	26
3.7 Ethical Consideration.....	26
CHAPTER FOUR.....	27
4.0 STUDY FINDINGS, ANALYSIS AND DISCUSSION	27
4.1 Introduction.....	27

4.2 Demographic Characteristics of the Respondents	27
4.2.1 Age of the Respondents	27
4.2.2 Marital Status	28
4.1.3 Educational Level	28
4.2.1 Perception and Understanding on Ferric Folic Acid.....	29
4.2.2 Dosage.....	32
4.4 Accessibility of Folic Supplement in ANC	46
CHAPTER FIVE	48
5.0. DISCUSSION OF THE FINDINGS.....	48
5.1 Introduction.....	48
5.2. Usage of the Folic Supplements	48
5.3 Accessibility of Folic Supplements	50
CHAPTER SIX	52
6.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	52
6.1 Introduction.....	52
6.3 The Main Findings of the Study	52
6.4 Conclusion	54
6.5.Recommendation	55
REFERENCES.....	57
APPENDIX.....	61

LIST OF TABLES

Table 1.1: Current Levels of Micronutrient Deficiencies in Tanzania	
Micronutrient Indicators Source	6
Table 1.2: The Human Cost of Micronutrient Deficiencies.....	7
Table 1.3 Estimated Costs of Iron, Folic Acid and Vitamin A	
Deficiencies in Tanzania.....	7
Table 4.1 Age Group Distribution by Percentage.....	27
Table 4.2: Marital Status Distribution by Percentage	28
Table 4.3: Education Level Distribution by Percentage	28

LIST OF ABBREVIATION

CDC	Centers of Disease Control and Prevention
ECSA-HC	East, Central and Southern African Health Community
FeFo	Ferric Folic Acid
HB	Haemo Globin
HIV	Human Immune Deficiency Virus
HMIS	Health Management Information System
IMR	Infant Mortality Rate
MDG	Millennium Development Goals
MDH	Management Development for Health
MSD	Medical Store Department
NGO	Non-governmental organization
NSGRP	National Strategy for Growth and Reduction of Poverty
NTD	Neural Tube Defects
PPH	Post -Partum Hemorrhage
SD	Standard deviation
TDHS	The Tanzania Demographic Health Survey
TFNC	Tanzania Food and Nutrition Centre
USA	United State of America
WHO	World Health Organization

CHAPTER ONE

1.0 INTRODUCTION

1.1 Introduction

This chapter introduces the study by providing background information and statement of the problem. Thereafter, it further highlights the objectives of the study, research questions and the significance of the study. Folate is a type of B vitamin. It is also called folic acid. Daily oral iron and folic acid supplementation is recommended as part of the antenatal care to reduce the risk of low birth weight, maternal anaemia and iron deficiency. The overall quality of the evidence for iron supplementation versus no iron was moderate for low birth weight, preterm birth, and maternal anaemia at term and maternal iron deficiency at term. The evidence was of low quality for birth weight, neonatal death, congenital anomalies, maternal death, maternal severe anaemia, and infections during pregnancy; whereas it was of very low quality for side-effects. Daily folic acid supplementation is recommended as part of the antenatal care to reduce the risk of low birth weight, maternal anaemia and iron deficiency (WHO, 2012)

In Tanzania, 1999 data shows that only 44% of women were receiving iron supplements: In Eritria (1996-1997) only 29.5% were receiving iron tablets and in Yemen only 20.7% were receiving iron tablets. Coverage is higher in Ghana (1998), Indonesia (1997), and Philippines (1998) where three-quarters of women are receiving iron during pregnancy, (TDHS, 2004-05). The connection between folic supplement and anemia is that if the body has enough folic acid this mean that it is hard to get anemia during pregnancy.

Anemia prevalence in pregnant women is one of the health problems confronting pregnant women. The prevalence of Anemia and severe anaemia in pregnant women were 60% and 3.8 % in pregnant women respectively. Pregnant women tend to become anemic because their blood is also used by the unborn child. The required blood of pregnant women is 11g/dl. However, during pregnant majority of the women are below 11g/dl thus during Ant natal (ANC) visit they are given folic acid supplement to help them increase the amount of blood which is real needed to their bodies and help them deliver safely (Massawe, 2002).

1.2 Background to the Research Problem

Anemia is a condition that occurs when the hemoglobin level in the blood is too low. Hemoglobin is a protein in red blood cells which carries oxygen from the lungs to different parts of the body. When blood does not have enough haemoglobin, the body will not get the oxygen it needs. Human body needs iron in order to generate haemoglobin thus low iron in blood cause the most common kind of anemia (iron-deficiency anemia). It is important that before conceiving, a woman should take folic acid for production of red blood cells, as well as nor epinephrine and serotonin (chemical components of the nervous system). Folic acid also helps to synthesize genetic material in every cell of the body and normalize brain function. Taking folic acid before conception reduces the risk of neural-tube defects such as spina bifida (Urassa, 2002).

Anemia in pregnancy is a serious public health problem worldwide. WHO (2001) estimates that, more than half of pregnant women in the World have a hemoglobin level indicative of anemia (< 11.0g/dl), the prevalence may however be as high as

56% or 61% in developing countries. Women often become anemic during pregnancy because the demand for iron and other vitamins is increased due to pregnancy. The inability to meet the required level for these substances either as a result of dietary deficiencies or infection gives rise to anemia. Anemia ranges from mild, moderate to severe and the rates of haemoglobin level for each of these types of anemia in pregnancy at 10.0 – 10.9g/dl (mild anemia) 7 – 9.9g/dl (moderate anemia) and < 7g/dl (severe anemia) (WHO, 2001).

Foetuses are at risk of preterm deliveries, low birth weights, morbidity and perinatal mortality due to the impairment of oxygen delivery to placenta and fetus. It is suggested that, like vitamin A deficiency, at least 80% of pregnant women are taking the recommended number of iron tablets; there will be worldwide reduction in anemia. The Tanzania Demographic Health Survey (TDHS, 2004-05), report indicated that, only few countries are reaching this level coverage.

The analysis of anemia prevalence and iron pill taken proxies for income shows that anemia prevalence is high in the poor countries compared to rich countries. Therefore in order to reach women in generally and particularly the women who need iron the most, alternate deliver channels need to be found and may include places of work, private sector drug sellers and markets, and community networks (women's groups and religious leaders) Thailand, for example improved coverage of ANC over the last 15 years and as a result has significantly reduced anemia prevalence over the same period. They used community volunteers to identify pregnant women early and encourage their frequent use of ANC, where women are provided with adequate supplies of iron tablets and effective messages to ensure that

they take iron tablets (TDHS, 2004).

WHO report estimated that 41% of women and 27% of children suffer from anemia due to iron deficiency. The consequences of iron deficiency anemia include suboptimal mental and motor development in young children, increased risk of maternal mortality, and decreased economic productivity of adults. Iron nutrition is not yet well integrated into the agendas for reducing morbidity and mortality of pregnant women and neonates. Iron supplementation in pregnancy has been advocated for decades as a means of controlling anemia, but this outcome has not been sufficient to motivate strong programs and policies (WHO, 2005).

1.3 Anemia in Pregnant Women

Anemia is regarded as a major risk factor for pregnant women. It has been associated with premature labor and low birth and some of these associations are not firmly established and severe anemia (Hb below 70 g/l) has consistently been associated with maternal mortality (Rush, 2000). Based on these associations and high prevalence of iron deficiency anemia, supplementation programs were expected to reduce poor outcome of pregnancy e.g. death of a child or miscarriage, but the results were often disappointing (Rush, 2000). This was often attributed to program implementation weaknesses, but more profound anemia, accounting for most of the anemia-related increased risk of maternal death, is likely to have complex and multiple causes (Beaton, 2000).

A study from Malawi showed that 60% of iron-deficient women had other deficiencies as well, and many had signs of inflammation (van den Broek & Letsky,

2000). Similarly, a study from Tanzania identified iron deficiency, malaria, hookworms, and other infections as major causes of anemia (Massawe *et al*, 1999). Both of these studies used bone marrow aspiration as a gold standard for defining empty iron stores, and consequently using a control group of non-anemic women was not acceptable.

1.3.1 Tanzania Nutrition Policy and Strategies

The United Republic of Tanzania endorsed the commitment at the World Food Summit held at Rome Italy in 1996 and the World Summit for Children held at New York in 1990, that several forms of malnutrition including micronutrient deficiency should be eliminated. The commitment of the government for ensuring food quality and nutrient content of food is also implied in the *National Health Policy of 2002*, which specifically mentions salt iodization.

'The Food & Nutrition Policy', which was written in 2005 but still has not been, endorsed also explicitly mentions food fortification as a strategy to combat vitamin and mineral deficiencies. Similarly, Tanzania is signatory to resolution SA/HMC46/R10 that was adopted at the 46th conference of ECSCA-HC Health Ministers in February 2008 at Victoria, Mahe, Seychelles which among others, urges Member States to: adopt and support implementation of ECSCA food enrichment guidelines by the end of 2009 and allocate and increase financial resources (in health budget /and basket funds) by at least 20% within the next two years, for nutrition with a focus on micronutrients interventions such as Vitamin A supplementation, iron and folic acid supplementation, fortification and other food-based interventions. This will help to ensure sustainability and reduce donor

dependence.

In addition, the National Nutrition Strategy for 2009-2015, mentions food fortification as a potential strategy to reduce the prevalence of micronutrient deficiencies in Tanzania. The strategy aims at ensuring that legislation, regulations, standards and guidelines are set in place for fortification of appropriate food vehicles; a quality assurance system is established at critical control points and the undertaking of social marketing of fortified foods among consumers.

1.3.2 The Economic Cost of Micronutrient Deficiencies in Tanzania

Table 1.1: Current Levels of Micronutrient Deficiencies in Tanzania

Micronutrient Indicators Source

Micronutrient	Indicators	Source
Vitamin	Children <5yrs 24% deficient Lactating women 69% deficient	TFNC
Folic Acid	Neural Tube Defects(NTSs)3.1per 1000 live births	Municipal Hospital Dar-ES-Salaam
Iron	Children<5years71.8%iron deficient Women 48.4%deficient Women 48.4%	TFNC
Zinc	Stunting	TFNC

Source: WHO (2009)

The above policy and regulation therefore show a strong commitment of the government on controlling micronutrient deficiency, thereby, providing opportunities for all related institutions and sectors of the government, related industries and services, research centers and both local and international NGOs for

building a better partnership for controlling micronutrient deficiency in the country.

The indicators in the table were used in the calculations and spreadsheet to estimate the cost of the micronutrient deficiencies for Tanzania. The cost of micronutrient deficiencies can be made up of two components, the first component is the human cost in terms of deaths that can be estimated to be directly attributable to the micronutrient deficiencies. The second component is the economic loss due to poor productivity of the current adult population and the future adult population.

Table 1.2: The Human Cost of Micronutrient Deficiencies

Cause of Death Deficiency	Annual Number of Death	Micronutrient
Perinatal due to anemia	18683	Iron
Maternal Mortality due to Anemia	1,602	Irons
Neural tube Birth Defect	3,308	Folic Acid
Children <5 years lack of Vitamin A	5,190	Vitamin A

Source: WHO (2009)

Table 1.3 Estimated Costs of Iron, Folic Acid and Vitamin A Deficiencies in Tanzania

Group	Estimated Economic Losses (GOP)	Percentage of total
Anemia Perinatal	\$116,324,201	22%
Children	\$169,163,266	33%
Adults –Productivity loss	\$167,125,419	32%
Adults-Maternal mortality	\$4,588,867	1%
Neural Tube Defects deaths	\$20,596,288	4.0%
Survivor Lost Productivity	\$6,621,570	1.3%
Care & Welfare	\$1,205	0.2%
Vitamin A deficiency	\$32,314,008	6%

Source, WHO (2009)

Table 1.3 summarizes the estimated annual costs of the deficiencies of supplement like Iron, folic acid and Vitamin A. The Table indicates an economic loss of approximately 2.65 percent results a of projected 2009 GDP. Folic Acid Deficiency has been linked to the incidence of cardiovascular and heart disease in many countries. In the case of Tanzania, the losses have not been calculated at this point, however, this would only improve the business case for food fortification (WHO, 2009).

1.4 Statement of the Problem

Folic acid is one of the few nutrients known to prevent neural tube birth defects, such as spina bifida, which affects one in every 1,000 babies born in the United States. The Centers for Disease Control report that women who take the recommended daily dosage of folic acid reduce their baby's risk of some types of birth defects by 50 percent. On the other hand, women who do not take the recommended daily dosage of folic acid may increase their chance of miscarriage or still births. Folate-deficiency anemia and iron-deficiency anemia can have the same symptoms of fatigue and weakness. A mild folate deficiency can also leave a person grumpy (CDC, 2008).

The recommended daily intake of folic acid for all women of childbearing age is at least 400 micrograms (mcg), or 0.4 milligrams (mg). During pregnancy, the recommended dose is 600 – 800 mcg, or 0.6 – 0.8 mg, a day. In case of a family history of neural-tube defects, one should probably get 4,000 mcg (or 4 mg) of folic acid a day. Most prenatal vitamins contain the appropriate dosage of folic acid along with other vitamins that will help a baby stay healthy (CDC, 2008). Folic acid is a

water-soluble vitamin, so the body will flush out the excess if you consumed too much. For some women, there's an exception to this rule: Getting too much folate may hide a B-12 deficiency, sometimes a problem for vegetarians (CDC, 2008).

Leafy green vegetables are a good source of folate and manufacturers are now required by the Food and Drug Authority to add folic acid to enriched cereal grain products such as flour, pasta and rice. So, replace the regular cereals with these and add a bowl of fresh salad to your daily diet. Other sources of Folic acid include, chicken liver, beef liver, lentils, wheat germ, spears, asparagus, papaya, broccoli, cantaloupe, eggs, canned salmon (CDC, 2008).

The available data does not necessarily reflect whether women are taking the supplements, in other words, one important question that has not been answered, does the high prevalence of anemia caused by lack of supplements in the sense that women do not take them or there are other factors for this situation? This is one of the questions this study aims at answering, "We know from efficacy trials that if women take iron-folic acid supplements the prevalence of anaemia in late pregnancy and at delivery is low.

However, the fact that many countries have iron-folic acid supplementation for pregnant women in their health policies and including the products in their standard drug procurement lists, but yet Anaemia still exists. Policies and supplements are in place but cases of anemia still prevail. This means that there is yet a knowledge gap and there is a need to explore more as to why this situation persist. According to a WHO (2005) review of nationally representative surveys from 1993 to 2005, indicate

that 42% of pregnant women have anemia worldwide and almost 90% of anemic women reside in Africa and Asia. Most countries have policies and programs for prenatal iron-folic acid supplementation, but coverage remains low, and little emphasis is placed on this intervention to strengthen antenatal care services. The evidence of the public health impact of iron-folic acid supplementation and documentation of the potential for scaling up has not been reviewed recently.

Due to the reason the prevalence of anemia among pregnant woman is shown to be high almost 90% of anemic women reside in Africa and Asia (WHO, 2005). The available data does not necessarily reflect whether women are taking the supplements or not. In other words, one important question that has not been answered, does the high prevalence of anemia caused by lack of supplements in the sense that women do not take them or there are other factors for this situation? The study focused on revealing evidence based information to this situation.

1.5 Objective of the Study

1.5.1 General Objective

To investigate the perception and understanding of pregnant women towards the use of folic acid supplement.

1.5.2 Specific Objectives

- i. To explore pregnant women perception and understanding towards the use of Folic Supplement
- ii. To assess pregnant women understanding toward the effect of Anemia

- iii. To examine accessibility of Folic supplement in ANC

1.5.3 Research Questions

- i. What is the perception and understanding of pregnant woman towards the use of folic acid?
- ii. What is the pregnant women's understanding towards the effect of Anemia?
- iii. Are folic supplements available at the Ant Natal Clinic?

1.5.4 Significance of the Study

The study provided more evidence-based information related to perception and understanding of pregnant women towards the use of folic supplements for Dar es Salaam City in general, particularly Temeke district. The findings will help government, policy makers, stakeholders and service providers on how best they can provide enough folic supplements to ANC Clinics and education on the importance of folic supplements as they are fundamental to public health and to social, human and economic development. Many studies have focused on the biomedical approach of the knowledge on the use of folic supplements and its side effect; this study will add to existing literature on perception and understanding of pregnant women towards the use of folic acids.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

WHO, (2005) report defined Anemia in pregnancy as a hemoglobin concentration below 11 g/dL. It continues to be a major health problem in many developing countries and is associated with increased rates of maternal and prenatal mortality, premature delivery, low birth weight, and other adverse outcomes. More than half of the pregnant women in the world have hemoglobin levels indicative of anemia. Although, only 15% of pregnant women are anemic in developed countries, the prevalence of anemia in developing countries is relatively high (33% to 75%). The most common cause of anemia in pregnancy worldwide is iron deficiency.

The predisposing factors include grand multiparty, low socioeconomic status, malaria infestation, HIV infection, and inadequate child spacing among others. Because anemia is the most frequent maternal complication of pregnancy, antenatal care should therefore be concerned with its early detection and management. There are no formal rules for what makes an ordinary multivitamin different from a prenatal supplement. In general, most prenatal supplements contain more folic acid and iron than you will find in a standard adult multivitamin.

Pregnant women need more of these nutrients than usual specifically 200 micrograms (mcg) more of folic acid also called folate and close to 50 percent more iron to make more blood to nourish the fetus. Calcium needs to stay steady at 1000 milligrams (mg) to prevent bone loss late in pregnancy, but because many women don't get enough calcium, prenatal vitamins usually contain calcium as well.

When it comes to pregnancy, timing is everything. For example, neural tube defects such as spina bifida can develop in an embryo before a woman even knows she's pregnant. That's why doctors encourage women to start taking prenatal supplements, or at least folate also known as folic acid for at least a few months before getting pregnant. Taking folic acid, vitamin B, both before and during pregnancy, greatly reduces the chance that your baby will be born with spinal bifida or other neural tube defects.

Every woman of childbearing age should have 400 micrograms (mcg) of folic acid a day, and if you're trying to get pregnant, take at least that much. Most prenatal vitamins contain double that, the amount recommended by the U. S. Food and Drug Administration (FDA) recommends taking not more than 1,000 mcg per day. (WHO, 2005). Women who have had their first child with a neural tube defect have a higher risk of having a second with the same defect. Healthcare providers should advise these women to take at least 4 milligrams (mg) of folic acid starting one month before conception, if possible, and continuing through the first three months of pregnancy (CDC, 2008).

2.2 The Use of Folic Acid and Anemia Problem in Tanzania

World Bank (2006) reported that Tanzania has a severe vitamin and mineral deficiency problem. Every year, deficiencies in iron, vitamin A and folic acid cost the country over US\$ 518 million, around 2.65 % of the country's GDP. Beyond the economic losses, vitamin and mineral deficiencies significantly contribute to infant and maternal mortality, with over 27,000 infant and 1600 maternal deaths, or 28,600 total deaths annually attributable to this cause. Increased intake of essential vitamins

and minerals, such as iron, improves cognitive function and intellectual capacity of children and work performance of adults.

Hence, improving the nutritional status of Tanzanians could help Tanzania to achieve the Millennium Development Goals (MDGs). In fact, if all of the deaths could be avoided, the infant mortality rate (IMR) in Tanzania could be reduced to 41.5 per 1,000 populations, which would ensure achievement of the IMR goals under the National Strategy for Growth and Reduction of Poverty (NSGRP) and virtually ensure achievement of the MDG for IMR. According to World Bank (ibid) reported that the Millennium Development Goals (MDGs number 5 which is about improving maternal health is compromised by micronutrient deficiencies, which is associated with most major risk factors for maternal mortality. Maternal stunting and iron and iodine deficiencies particularly pose serious problems.

Iron deficiency has multiple negative impacts on survival, health, productivity and learning capacity. It contributes to maternal and perinatal mortality (approx. 20% of deaths) and leads to a 17% loss of productivity in heavy manual labour and a 5% loss of productivity in light manual labour. Further, iron deficiency at key stages in foetal life and early childhood is associated with cognitive losses that are often irreversible. Limited intervention trials suggest that anemia is associated with a 0.5 standard deviation (SD) lower score on cognitive tests in children which is associated with 4% lower wages as adults.

In Tanzania, 73% of rural children, 66% of children who live in urban areas and 48% of women aged 15-49 are anemic. Anemia is even higher among pregnant women

(58%). Although iron supplements are given to pregnant women (61% coverage) their adherence is low. Only 10% of women receiving supplements take them for the recommended 90+ days (TDHS, 2005). Even though anemia can be caused by a variety of factors, in Tanzania, about half of the anemia prevalence is due to iron deficiency.

Moreover, for each person suffering from iron deficiency anemia, there is another who is already suffering with iron deficient although not classified as anemic. This means that virtually, all women and children in Tanzania are at risk of iron deficiency. Women of childbearing age need folic acid before pregnancy and in the first weeks of pregnancy to help prevent Neural Tube Defects (NTD). NTDs are the leading cause of preventable birth defects and a significant cause of perinatal mortality. The limited data available on NTD incidence in Africa suggest that rates are similar to or higher than those in other regions. A study in Dar es Salaam estimated a rate of 3.02 NTD's per 1000 live births (Kinasha *et.al*, 2002).

A combination of folic acid enrichment and supplementation before and in the early stages of pregnancy can prevent NTD's. Studies in Canada, Chile, South Africa and the USA have demonstrated the effectiveness of folic acid enrichment. Folic acid supplements are routinely given to pregnant women at antenatal care service, however, the coverage is not sufficient (61% to 80%) of women make their first visit after the first trimester of pregnancy. Given that folate is needed within 3 weeks of conception, the folic acid administered at the antenatal care services will have no reducing effect on the burden of neural tube defects and perinatal mortality (TDHS, 2004-2005)

Available information from Health Management Information System (HMIS), (2009) reported deaths due to maternal complications and causes by Region. Regions with the highest number of maternal deaths include Mwanza (176), Tabora (164), (153) and Dar es Salaam (137). This could be explained by the large number of facility deliveries and complicated referrals. Regions with the lowest numbers include Pwani (30), Arusha (32) and Lindi (39). Major causes of death at the health facility include Post -Partum Hemorrhage (PPH) followed by eclampsia and anemia (MoHSW, 2010). Morrison (2008) argued that anemia among women of reproductive age is so common that healthcare providers may consider it the norm while epidemiologists note it as a sign for quality healthcare and sociologists associate it with disadvantaged populations or in other words the group which is vulnerable to Anaemia.

Anemia during pregnancy is even more likely to be labeled as normal since hemodilution takes place during the first and second trimester as plasma volume increases disproportionately to red cell mass. Frequently, it is described as “physiologic anemia” which again serves to disabuse healthcare providers as well as patients and their families from the notion that anemia during gestation is abnormal. Shaw, et al,(2000) argued that “it depends with the understanding of the Woman, other deliberately ignore using of these medication, despite how well they are instructed on the importance of the medication to their own selves and the unborn children”.

2.3 Effect of Anemia

Pregnant women with even mild anemia have increased perinatal mortality and early

neonatal mortality largely associated with preterm birth and growth restriction. Even when anemia is noted early in pregnancy and treated promptly, there is an increased risk of preterm birth. Indeed, if the anemia is severe (Hb <8 g/dL) it is associated with an even greater risk of preterm birth and low birth weight.

Delivery itself is a factor as even in women with normal hemoglobin in the last trimester of pregnancy, almost a quarter (21%) had anemia at their first postpartum visit. Indeed, among low income women, the USA Centers of Disease Control and Prevention (CDC) found the prevalence of anemia to increase with gestation, noting 8%, 12%, and 29% in the first, second, and third trimester, respectively. There is a real risk of transfusion, particularly among patients who have cesarean delivery where a preoperative hematocrit of 25% or less was associated with more than a third (36%) of the women receiving a blood transfusion (CDC, 2008).

There are also quality of life defects due to maternal anemia that are comparable to those seen in individuals with serious chronic diseases, such as difficulty in concentration, cognition, disturbed mother-infant interactions and depression. For example, the Physical Functioning and Vitality Scores in women with postpartum anemia compare to scores seen with congestive heart failure, chronic renal disease and cancer patients. After correction of the postpartum anemia with carboxymatose iron infusion, Physical Function and Vitality Scores equal or exceeded those in the general population without anemia(CDC, *ibid*).

Postpartum fatigue was also shown to have a relationship with anemia while anemia seemed to reduce immune function and increase the risk of infection. Anemia has

also been linked to postpartum depression and, if severe can be related to cardiovascular symptoms, dizziness, and need for prolonged hospitalization. Cognitive functions and emotional distress have also been noted in women with anemia while more symptoms of depression such as the “maternity blues” and a reduced sense of wellbeing is demonstrated compared to non-anemic women.

Available data suggest that most pregnant women are judged to be at risk for anemia during pregnancy or during the postpartum period and therefore, the CDC, the American College of Obstetrician and Gynecologists (ACOG) and the Institute of Medicine recommend anemia screening at 4–6 weeks postpartum only for those considered to be at “high risk” of developing anemia. In summary, as providers we seem to have a problem with the anemia pregnancy as we do not consider it to be an abnormality until it becomes quite severe, although as noted above, there are significant maternal and foetal implications of even a mild reduction in hemoglobin, ACOG, (2008).

2.4 Theoretical Framework

The study used symbolic interaction theory to guide the data collection, analysis and discussion because the study is looking at perception and understanding of pregnant women towards the use of folic supplement. Blumer, (1954) argued that, Symbolic interactionism is essentially a social psychological perspective that is particularly relevant to sociological perspective. Symbolic Interactionism focuses on the nature of interaction, the dynamic patterns of social action and social relationship. Interaction itself is taken as the unit of analysis of attitudes are relegated to the background, both human and the social structure are conceptualized as more

complex, unpredictable and active than in the conventional sociological perspectives. This perspective further suggests that societies are composed of interacting individuals who not only react but perceive, interpret, act and create. The individual is not a bundle of attitudes but a dynamic and changing actor, always in the process of becoming and never fully formed.

Social milieu is not something static 'out there' always influencing and sharpens us but essentially in an interaction process. The individual has not only a mind but also a self which is not a psychological entity but an aspect of social experience and activity, the entire process of interaction is symbolic, with meanings constructed by human ingenuity. The meanings we share with others, over the definition of the social world and our perception of and response to, reality emerge in the process of interaction. Blumer, (1954)

Herbert Blumer, (1954) one of the chief architects of symbolic interactionism writes: The term symbolic refers to the peculiar and distinctive character of interaction as it takes place between human beings. The peculiarity consists in the fact that human beings interpret or define each other's actions instead of merely reacting to each other's actions. Thus, human interaction is mediated by the use of symbols, by interpretation, or by ascertaining the meaning of one another's actions. This mediation is equivalent to inserting a process of interpretation between stimulus and response in the case of human behavior.

Blumer, (1969) argued that human beings, unlike lower animals, are endowed with the capacity for thought, the capacity of thought is shaped by social interaction. In

social interaction people learn the meanings and the symbols that allow them to exercise their distinctively human capacity for thought. Meaning and symbols allow people to carry on distinctively human action and interaction, People are able to modify or alter the meanings and symbols that they use in action and interaction on the basis of their interpretation of the situation.

People are able to make these modifications and alterations because, in part, of their ability to interact with themselves, which allows them to examine possible courses of action, assess their relative advantages and disadvantages, and then choose one. The intertwined patterns of action and interaction make up groups and societies. Symbolic interactionists are interested not simply in socialization but in interaction in general, which is of vital importance in its own right. Interaction is the process in which the ability to think is both developed and expressed. All types of interaction, not just interaction during socialization, refine our ability to think, beyond that thinking shaping interaction process. In most interaction, actors must take account of others and decide if and how to fit their activities to others, however, not all interaction involves thinking

This study is linked to symbolic interaction theory as argued by Bulmer, (1969, 1954) in an attempt to explain perception and understanding that exists among pregnant women towards the use of folic acid in Temeke district, Tanzania. The main focus of this theory is on the nature of interaction, the dynamic patterns of social action and social relationship. Societies are composed of interacting individuals who not only react but perceive, interpret, act and create. The theory explains that the meaning we share with others, over the definition the social world

and our perception of and response to and reality emerge in the process of interaction, the study wants to focus on the perception and understanding which can possibly be found when people's interactions on daily basis.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Study Area

3.1.1 Characteristics of the Study Area

Dar es Salaam is the major commercial, administrative and industrial centre of Tanzania. It's located between latitudes 6.36° and 7.0° to the south of Equator and longitudes 39.0° and 33.33° to the east of Greenwich. It is bordered by Indian Ocean on the east and Coast Region on the west. The total surface area of Dar es Salaam City is $1,800 \text{ km}^2$, comprising of $1,393 \text{ km}^2$ of land mass with eight offshore islands, which is about 0.19% of the entire Tanzania Mainland's area. There are three Municipalities in Dar es salaam namely Temeke, Kinondoni, Ilala. Temeke Municipality has the largest land surface area followed by Kinondoni while Ilala has the smallest area.

The 2012 Tanzania National Bureau of Census reports that the population of Temeke District is 1,368,881 (NBS, 2012) and the area of 786.5 km^2 . Administratively, it comprises of three (3) divisions namely (Mbagala, Chang'ombe and Kigamboni), and twenty four (24) wards namely: Azimio, Charambe, Chamazi, Chang'ombe, Keko, Kibada, Kigamboni, Kurasini, Kisarawe, Makangarawe, Mbagala, Mbagalakuu, Miburani, Mjimwema, Mtoni, Pembe mnazi, Sandali, Somangila, Tandika, Temeke, Toangoma, Vijibweni, Yombo vituka and Vituka

3.1.2 Study Population

The 2012 Tanzania National Census reports that the population of Temeke District is 1,368,881. Temeke was chosen to be the area of study because of its population is

mixed with different groups of people and it is most populated area. The respondents of the study were drawn from Tandika, Temeke, Mbagala kuu and Kigamboni wards. Selection criteria for these wards are based on the reason that they are most populated wards in Temeke compared to other wards. The assumption was that people's interaction was also high. The respondents included pregnant women and Health Care workers (Nurse and midwives) from Ant Natal Clinics within selected Health facilities in Temeke District. Moreover the study also interviewed women who were not pregnant but are in reproductive age between 15-49 years. It was important to include them in order to get their views on Folic Acid supplement.

3.2 Research Design

The research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance with the research purpose. It is the conceptual structure within which research is conducted. It constitutes the plan for the collection, measurement and analysis of data (Kothari, 2004). This is an explorative study because the researcher wanted to get key information directly from the study participants with no generalization. The researcher wanted to acquire new insight on perception and understanding of pregnant women towards the use of folic acid.

3.3 Sampling Procedures

The study employed purposive sampling in the selection of respondents because of the nature of the study. This procedure aimed at selecting respondents who are familiar and well informed about the subject. The researcher intended to get three groups of respondents: pregnant women, women at bearing age and nurses at RCH

Clinics.

3.4 Method of Data Collection

The questions guide were developed and structured into various themes. Data was collected using an interview guide for in-depth interviews and focus group discussions. The in-depth interview to nurse midwives helped to gather information on the availability of folic acid in Ant natal clinic and provided data on how many pregnant women receive folic acid during ANC visits. The English interview guide was translated to Kiswahili as it is the most spoken and well understood language. Tape recording was used whereby information recorded was transcribed by the interviewer. The guide allowed interviewer and interviewee to discuss questions in order to determine perception and understanding of the pregnant woman and health providers at ANC about the importance and accessibility of folic acid. The research tools were pre-tested in selected households that were not included in the final study before the actual field work started.

3.4.1 Interview

Interview seeks to describe the meaning of central themes in the life world of the subjects (Kvale, 1996). The main task was to understand the meaning of what the interviews had to say.

3.4.1.1 The Process Used During the Interviews

The researcher prepared a question guide to help generate data. This method was useful because individual respondents' understanding and perception on the use of folic supplements were easily captured. Interviews were conducted to key informants

namely; pregnant mothers, women at bearing age and nurses at ANC Clinics. All information collected were recorded in a tape recorder to avoid missing any information from respondents

3.4.2 Focus Group Discussion

Focus group discussion provided the researcher quality data because participants tend to provide checks and balance to each other which is very important in weeding out false or extreme views. Focus group discussion also promote interactions among participants that motivate them to state opinions and that they would not otherwise express if interviewed individually (Patton,1987)

Also a focus group discussion is a good way to gather people from similar backgrounds or experiences to discuss a specific topic of interest. The group of participants is guided by a moderator (or group facilitator) who introduces topics for discussion and helps the group to participate in a lively and natural discussion amongst them. The strength of the FGD relies on allowing the participants to agree or disagree with each other so that it provides an insight into how a group think about an issue, about the range of opinion and ideas, and the inconsistencies and variation that exists in a particular community in terms of beliefs and their experiences and practices (Krueger, 1998)

3.4.3 Focus Group Discussion Guide

The FGD involved a group of 6 to 7 people. Gender was not considered since the study participants were women. The recommended number of people per group is usually six to ten (Macintosh, 1993).The researcher conducted 10 Focus Group

Discussion, an average of two to three FGD in each selected ward. The focus group discussion focused on gathering information on perception and understanding of pregnant women on the use of folic supplement, the effect of anemia and accessibility of FeFo in ANC. A tape recorder was used during the FGD sessions so as to avoid losing out information given by respondents (Davies, 2007). Each session took almost two hours.

3.5 Data Analysis

Data was transcribed and then translated into English, and typed in a word document. The translation of information collected from the field was done by the researcher.

3.6 Sample Size

Information's were collected from many respondents until no new information was received from respondents.

3.7 Ethical Consideration

Ethical clearance was processed. Ethical procedures for conducting research were considered during the process of preparing and conducting the field study. During the data collection process, informed consent of the respondents was sought and respondents were assured of the confidentiality and privacy of the information they were going to provide.

CHAPTER FOUR

4.0 STUDY FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter covers analysis, presentation; and discussion of the findings. It is divided into three sections. The first sections deals with demographic information of respondents from the study, the second section is about perception, the third section deals with knowledge.

4.2 Demographic Characteristics of the Respondents

The study focused on the following demographic variables age, marital status and education.

4.2.1 Age of the Respondents

Likewise in terms of age the results indicate that 22 are between 18-25years, 39 were between 25-32 years, 28 were between 32-39years, and 11 are above 39 years of age. The demographic characteristic information in table 4.1 indicates that more than half of the respondents are between 18-32 years old.

Table 4.1 Age Group Distribution by Percentage

Age group	No	%	Total
18-25	22	22.0	22
26-32	39	39.0	39
33-39	28	28.0	28
Above 39	11	11.0	11
Total	100	100	100

Source: Field findings, 2013

4.2.2 Marital Status

Moreover data suggest that majority of all the respondents are married hence it is assumed that, married women are getting financial boost from their husbands and that being the fact they are capable of accessing better food as recommended by their doctors. However, this is not the case, since there are married women who would not eat balanced or required food as per health education provided by health care workers during Ant natal clinic visit out of negligence.

Table 4.2: Marital Status Distribution by Percentage

Marital status	No	%	Total
Married	82	82.0	82
Single	14	14.0	14
widow/widower	4	4.0	4
Total	100	100	100

Source: Field findings, 2013

Table 4.3: Education Level Distribution by Percentage

Education Level	No	%	Total
Primary	3	3.0	3
Secondary school	57	57.0	57
Certificate/ Training	10	10.0	10
Diploma	11	11.0	11
Advanced diploma	19	19.0	19
Total	100	100.0	100
Number of children	No	%	Total

Source: Field findings, 2013

4.1.3 Educational Level

Likewise, on the level of education the study involved 19 Advanced diploma, 11 Diploma holders, 10 certificate holder, 57 Secondary Education, and 3 Primary

education as indicated in table 4.3. This show that a good number of respondents involved in this study is literate and hence knowledgeable on most of the concepts which were asked.

4.2.1 Perception and Understanding on Ferric Folic Acid

Majority of pregnant women who were involved in the study during an in-depth and focus group discussion are aware of the Supplement (FeFo) as the medication used for helping women with blood shortage before and after giving birth. The study shows that majority of the respondents (pregnant women) are aware of these supplements. This is evidenced by statement of one of the respondent who had this to say during an in-depth interview at Temeke Municipality Hospital.

Hizi ni dawa wanawake wajawazito wanapewa wanapokuja Klinik, hizi dawa ni za aina mbili, aina ya kwanza ni vidonge na aina ya pili ni dawa ya maji, hii ikimaanisha Hospitali ya Temeke inatoa dawa za aina zote kwa wanawake wajawazito.

These are Medication pregnant women get when they come to Clinic during regular clinic checkup, these medicines are of two types, type number one is in liquid form and type two is in pills form, Thus Temeke Hospital provides two types of supplements to pregnant women”

The findings show that there are two types of the supplement provided to pregnant women, namely in form of liquid and tablets. The differentiation of the supplement is purposive so as to be able to cover all pregnant women, those who cannot use the liquid form supplements they should use the tablets. On the other hand, data

collected from respondents reveal that not only those pregnant women are aware of the Supplement but they have had all the kinds because each kind has its own usage and prescription, but also there are two kinds of the Supplements depending on the nature of the patients.

In one of the Focused Group Discussion involving (7) seven pregnant women from Temeke Municipal Hospital, one woman aged 20 years old explained the extent she was aware of these Supplements as well as how are they used. Her views were equally shared by other participants in the discussion. She explained by using the following words.

Hizi ni dawa au vidonge vya ziada ambavyo hutumika kwa dhumuni la kuongeza damu hususani kwa wanawake ambao ni wajawazito na wamepimwa na kugundulika kuwa wanaoupungufu wa damu, ila kwa akina mama wajawazito inashauriwa kutumia vidonge hivi mara kwa mara bila kujali kiasi cha damu katika miili yao kwani muda unakuja ambapo damu itahitajika zaidi, hususani wakati wa kujifungua.

“These are medications or tablet which are used for increasing blood level especially for the women tested to have low blood level, but for pregnant women it is advised to use these medication all the time over and over regardless of their blood level since the time would come when more blood would be needed in their bodies especially during giving birth”

The findings indicate that majority of pregnant women involved in the study are aware of this medication as well as their importance and dosage. Women are

supposed to take these medications not only during giving birth but from the period a woman realized that she has conceived. The finding also shows that few of women are not well aware of these supplements and had thought that they are just the Supplement given to any kind of patient tested to have low level of blood. This is evidenced by a statement of one pregnant woman aged 22 years old during an in-depth interview from Kigamboni Hospital who argued that:

Hivi vidonge vinatumika wakati mgonjwa yeyote anapokuwa na upungufu wa damu kwa dhumuni la kuongeza damu

“These tablets that are used when a patient is suffering from anemia, they increase blood”

The above presented response is an evidence that not all women are neither aware of the supplement nor their importance. Indeed many have heard information about the tablet from friends. The argument behind was that not all women are prescribed these medication simply because there are some women who have adequate blood level. These finding suggest that Ant Natal Care (ANC) clinics have the tendency of measuring the level of blood to pregnant women before prescribing these supplement.

Some focus group discussions show variation of responses from pregnant women on the awareness and importance of folic acid, Some women seem not to be aware of the importance of the folic acid and they are just using them as instructed by the health provider, some women are aware that the supplement are important for their own health and the baby's. Some of the women are aware of supplement and the

effect of anemia and decided deliberately not to use them. Three members of one of the group discussions agreed with the fact that despite of the side effect of these supplement but they are full aware of their importance, 5 members of the group agreed that they are not aware of the importance of the supplement and therefore they are just using as instructed by the health providers, lastly one person appeared not to be aware of not only the importance but even the supplement themselves this person had this to say to support her argument:

‘Sijui chochote kuhusu hizi dawa, sijawahi kuzitumia kabla kwahiyo sijui Zinatumikaje na sijawahi kuwa na upungufu wa damu’

‘I know nothing of these medicines, since i have never used them before and therefore i do not know how they are used and i have never had any HB problems.’

Thus the respondent reveals that she is not even aware of the health education provided by health care workers during Ant natal visits. The study further more reveals that not all women suffer from low levels of blood, others the blood level is associated with the kind of food one takes. If pregnant women are carefully on what to eat there would be little need of using the supplements. The findings indicate that most of families in Tanzania are not economically wealth to be able to eat as required and for economic wealthy families ignorance is a problem as women would eat out of their own desires of the food they eat.

4.2.2 Dosage

The findings on dosage of folic acid involved four nurses from Post Natal Wards

who all seem to provide same statistics which also suggest that, the health providers are all aware of dosage the pregnant women required before, during and after giving birth of their children. One health provider had this to say: *Lack of Folic acid results to birth defects such as spinal and brain defects* “.The findings are supported by Urassa (2002) as cited in literature review that:

It is important that before conceiving, a woman should take folic acid for production of red blood cells, as well as nor epinephrine and serotonin (chemical components of the nervous system). Folic acid also helps to synthesize genetic material in every cell of the body and normalize brain function. Taking folic acid before conception reduces the risk of neural-tube defects such as spina bifida. The four nurses all agreed that the pregnant women are supposed to be given 400 to 800 mcg in the very early stages of the pregnancy. However, there are some women who need to take folic acid throughout pregnancy and this is due to their constant low level of blood

However, they all emphasized that it is important for a pregnant woman to take test of level of blood so that the doctor would be able to know the amount of folic acid to give. Elaborating this issue one health provider had this to say:

‘Wanawake wanalazimika kujadili mahitaji yao ya dawa za kuongeza damu na madaktari wao. Madaktari wanatoa dawa za kuongeza vitamini ambazo zina kiwango kikubwa cha madini ya foliki’

“Women should discuss their folic acid needs with their doctors. Some doctors prescribe prenatal vitamins that contain higher amounts of folic acid”

Another health provider was of the view that:

‘Kupunguza uwezekano wa watoto kupata ulemavu wa mfumo wa fahamu Inashauriwa kutumia gramu 400 za folic acid kwa siku, kuanzia angalau Mwezi kabla ya kujaribu kupata ujauzito. Aliendelea kuelezea kuwa wanawake wote walio kwenye umri wa kuzaa wanapata gramu 400 za folic acid kila siku.’

To reduce your baby's risk of developing a neural tube defect, it is recommended to use 400 micrograms (mcg) of folic acid per day, beginning at least a month before you start trying to get pregnant. He further explained that all women of childbearing age get 400 mcg of folic acid every day.

Another health provider was of the view that:

‘Usitumie zaidi ya 1000 mcg kwa siku cha folic acid isipokuwa umeshauriwa na mtoa huduma ya afya. Hii ni muhimu hususani kwa wasiotumia nyama. Watu hawa wanahatari ya kupungukiwa vitamin B12 na kutumia sana Folic acid kutaleta ugumu katika kuutambua upungufu.’

Don't take more than 1,000 mcg per day of folic acid unless your healthcare provider advises you to. This is particularly important if you are a vegan. Vegans are at risk of being deficient in vitamin B12 and taking too much folic acid would make it hard to diagnose that deficiency”

The findings show that there is still a need of providing more education to pregnant women this is simply because it is important for pregnant woman as well as for the

unborn child. The bottom line here is the knowledge on dosage. It is as important to avoid supplement that are consumed without any proper instructions. The above findings from the health providers are similar to the findings from U.S. National Institutes of Health, which suggest that boosting your intake to at least 600 mcg daily once you're pregnant. Despite the importance of these supplement such as strengthening of the neural tubes and baby's spine yet it is not recommended to take more than 1,000 mcg per day but however there were some precautions to take when using folic acid especially the pregnant women who are using prenatal vitamins, since there are some vitamins which contains more than 800 to 1,000 mcg of folic acid.

The finding on how the supplements are being prescribed revealed that majority of pregnant women argued that the supplements are given as per level of the blood one has. The pills and liquid supplements are used altogether depending on the condition of the patients. These findings are supported by statements of respondents from Kigamboni Hospital during FGD consisting of seven (7) pregnant women who agreed to what one of their colleague said:

“Nilipewa vidonge kadhaa na nilielekezwa kutumia kidonge kimoja kila siku kwa muda wa mwezi mmoja, ikimaanisha kuna wakina mama wajawazito ambao wamepewa dawa kwa kipindi cha mwezi mzima”

“I was given several pills and instructed to take one pill per day for a period of one month, thus there are some women who were being prescribed for a month period”

One participant in the same discussion differed from above respondent in a following way:

“Mimi dozi yangu imekuwa ndefu, nimeanza tumia hizi dawa tangu siku nilipogundulika kuwa nina ujauzito, na nikaambiwa ninaweza tumia hiyo dawa mpaka pale nitakapomaliza jifungua mtoto, hivyo ukiniambia dozi ni kiasi gani sitoweza jua kwa kweli ila nachojua ni kuwa kila siku natumia kidonge kimoja asubuhi”

“My dosage was quite long, i was given some pills to take since day one i was tested pregnant i was told that i may not stop using pills till i deliver, so if you ask me what is my dosage i may not be able to know, What i know is that i would be using one pill daily in the morning”

The remaining five respondents agreed that:

“Wajawazito wanapimwa kiasi chao cha damu na madaktari na kupewa dawa stahiki”

“Pregnant women are tested their level of blood and the doctor would prescribe to them accordingly.”

The difference in responses signifies that most of the women are not aware of the dosage they are getting although it shows that they are adhering to what their doctors are advising them to do. Hence, the health these pregnant women rely on the expertise of the doctors. The prescription of the supplement is normally done by health providers such as nurses in ANC and Post Natal’s clinics. Medicines are also

available at Pharmaceutical. Pregnant women sometimes buy medicines from pharmacy especially when Health Facilities run out of stock therefore regardless of where to get or buy medicine yet the medicines would be provided following the prescription given by health provider.

These finding are supported by majority of pregnant women from all the four Hospitals visited during research that they are being instructed by the health providers such as nurses or doctor. This is evidenced by one respondent from Mbagala Hospital who argued that:

Ndiyo, nazijua hizi dawa tunapewa haswa kipindi cha kujifungua ila pia kipindi cha miezi 3 ya mwanzo na mwisho wa mimba, nilielekezwa na nesi muuguzi nitumia kidonge kimoja kila siku na baadae dozi ikabadilika, mara ya kwanza nilizitumia kwa mda wa mwezi mmoja na baadae nikapewa vidonge 30 kwa siku tano

“Yes, i know these medicines we are being provided with especially during labour but also during our first and last trimester, I was instructed by nurses, each day one pill and later on the Dosage changed.” The first time i per take for one month consecutively and the second time i was prescribed 30 pills for 5 days only”

The finding also signifies the two availabilities of the supplements as well as the nature of the patients. If the patients is detected to have low blood level that is hemoglobin concentration below 11 g/dL that she should be pre scribed at 600

micrograms (mcg) of folic acid a day and above but not more than 1000 mcg per day as that is recorded to be the usual dosage for women at child bearing age.

However, some literatures supported the findings that: the recommended daily intake of folic acid for all women of childbearing age is at least 400 micrograms (mcg), or 0.4 milligrams (mg). During pregnancy, the recommended dose is 600 – 800 mcg, or 0.6 – 0.8 mg, a day. In case of a family history of neural-tube defects, one should probably get 4,000 mcg (or 4 mg) of folic acid a day. Most prenatal vitamins contain the appropriate dosage of folic acid along with other vitamins that will help a baby stay healthy, (CDC, 2008).

The findings on the side of health providers showed that 30.0% of the pregnant women prescribed with supplement do not finish the dose, they assert that it brings nausea and affect their digestive system and therefore decide not to continue taking them. The study reveals that the Blood Shortage (Anaemia) will still be a problem among pregnant women but affecting a large number of women who are not educated. The findings also signifies that regardless of the education provided to people (Pregnant women) yet it's upon the understanding of women to determine their fate as you cannot force them. One pregnant woman aged 27 years had this to say during an in-depth interview held at Mbagala Hospital who argued that:

“Hizi dawa zina harufu mbaya kitu ambacho kinasababisha wengi wetu haswaaa mimi mwenyewe nisitumie, hata hivyo wengine wetu hawatumii kwani hawasikii dalili yote ya kuumwa mwilini mwao hivyo hawaoni nini sababu ya kutumia kabisa dawa hizo, japo wapo wachache ambao wao husahau tu na si kuwa wanaacha kutumia”

“These supplements has bad smell which hold backs most of us and particularly me from using them and nearly every one of us do not use the supplements since they do not feel sick and therefore sees no reasons of using them but also some of them happen to forget”

Majority of the women in Tanzania appear to have very low or rather poor social economic situation to enable them from getting the right food which is necessary for their health so whenever tested pregnant positive, Health providers’ prescribe the supplement since the first trimester to the last one for the purpose of rescuing the fetus. This is supported by the statement of one interviewee at Mbagala Hospital during an in- depth interview whereby he had this to say:

“ Kwa kawaida huwa tunawapa hizi dawa mara tu wanapogundulika kuwa wana ujauzito, na huwa tunawaambia kuwa wanapaswa kuutumia hizi dawa kwa kipindi cha miezi mitatu mfululizo na baada yake wanarudi kupima kiasi cha damu kwa mara ya pili tena kujua kama damu imeongezeka au imepungua ila pia wanaweza maandikiwa kuzitumia kwa mda wa miezi yote ya mimba bila kikomo”

“ We normally offer these medications immediate the woman is tested pregnant positive and emphasize that they should be taking these medication for at least three months consecutively and come back to test their blood level when their entering their second trimester, but also they can be prescribed to be used for the whole pregnancy period”

The study reveals that the supplements are being prescribed to pregnant women depending on the seriousness of the problem. However, since some women tend to ignore these medications, therefore, the health providers are forced to come up with new strategies to help respective women. The finding from Temeke Hospital which involved the service providers from Post Natal and Ant Natal showed that, 30.0% of the pregnant women skip using their supplement and the nurses proposed the mechanism to ensure that the supplement are being used even at home, however validity and reliability of the technique is yet to be proven right. One respondent during an In-depth interview argued that:

“Tunawapa dawa kwa kiasi cha dozi ya mwezi mmoja and kwa kuzingatia kiasi cha damu kilichoonekana, ila tunawaomba wanapokuja hospitalini kwa mara ya pili wabebe vidonge vingine vilivyo baki ili kwamba tuweze japo kisia na kuamini kwamba vimetumika vingapi.”

“We give patient medication (a one month dose) and prescribe them accordingly, we ask them to carry with them the amount left when they come back for regular clinic check-up, the remaining amount would indicate the amount used and presumably whether they are used or not.”

The study reveal that there are women deliberately decide not to take the supplement and therefore the problem remained unsolved, but also the study shows that there is still very low level of understanding among the women concern the use of these supplement especially on the positive and negative effect if they are taken or ignored

respectively. These findings are supported by Shaw (2000) as cited in literature review that “it depends with the understanding of the Woman, other deliberately ignore using of these medication, despite how well they are instructed on the importance of the medication to their own selves and the unborn children”.

The findings are also supported by Beaton (2000) who postulates that most of women in south Sahara Africa tend to ignore the usage of the supplements especially during their third trimester despite the education provided to them whenever they attend clinics. Information collected from the field also shows that health providers keep on insisting on the usage of these supplement since pregnant women would need high blood level during giving birth, but also it reduces the rate of getting Anaemia and therefore it is always best to take precautions. The study reveal that Anaemia and death are expected results in case a woman suffers a severe blood loss during delivery following the previous low blood level. The information is supported by the statement of the several health providers during an in-depth interview they argued that:

“Wanawake wanaelekezwa kutumia FeFo tangu wakiwa na mimba ya mwezi mmoja na pia pale wanaposikia mabadiliko yoyote katika mwili hata hivyo bado twawahimiza kutumia dawa kwani ni lazima tu watapungukiwa na damu hususani wakati wa kujifungua, hivyo ni vyema watumie dawa ili wakati wakujifungua damu iwe sawa.”

“Women are prescribed of the FeFo Supplements since they are one month pregnant but also when they feel any body changes, although we encourage keeping using the medication since they will definitely loose

blood during birth and therefore it is good they have their blood level high so that it can be levelled after they have given birth.”

“Hivyo ili kuweza kupunguza uwezekano wa kupata Anemia kwa mama mjamzito kwa kupungukiwa na damu kabisa hususani wakati wa kujifungua, tunapendelea kuchukua tahadhari kwa kuhakikisha kuwa mama anapata dozi sawa na ushauri sawia, tunawahimiza kuwa upo uwezekano wakupata anemia na pia kifo kwa kupuuzia umuhimu wa vidonge na dawa hizi.”

“Therefore so as to reduce the risk of a mother getting Anaemia by losing more blood during labour we prefer to take prevention by ensuring that the mother get the proper dosage and council. We insist to them that they are likely to get Anaemia and face death if they ignore the importance of these supplements”

In the same view, some few women were observed not using the supplement. However, this was a result of good counselling they get from their service providers on what to eat and what not to eat the first time they had gone for consultation with their doctors before they conceive. The data indicate that these supplements are only provided to women with loss or low Hb. However, it is not a must for every pregnant woman to use folic supplement if she follows proper diet and found herself with enough blood. These data are supported by the statements of the pregnant women during in depth interview at Mbagala Hospital who argued that:

“Mimi binafsi sijawahi tumia vidonge hivi,ila wazazi wangu na marafiki

zangu fulani walishawahi zitumia, mimi binafsi sikutaka kuzitumia kwani niliambiwa zinaharufu mbaya mdomoni na hivyo niliogopa kuwa mtumwa wa kutapika, Daktari akanishauri kutumia aina fulani ya chakula nami nikawa natumia mpaka sasa na sikuwahi kupungukiwa na damu.”

“I personally have never used these Supplement before but my parents have once used but i have heard a friend who have once used these medication as supplement for blood boost, but they were complaining of the bad smell they were giving and therefore i opted not to use them, instead i consulted a doctor who advised me of what to eat and ever since i have never experienced a problem”

Information collected from the study reveal that some women drop or ignore using the medication deliberately simply because they have bad smell which make them uncomfortable, however the doctor and other health providers keep on educating these women about the importance of using folic acid regardless of the bad smell whenever they come to hospital for regular clinic check-ups as it has been explained above. The findings are supported by the statement of one Health Provider when responding to the research question which asked “*Are the pregnant women using the medicine as prescribed by the physician?*” During an in–depth interview at Kigamboni Health Hospital, whereby she elaborated the situation in a following manner:

“Hatuwezi kuwa na uhakika kama wanatumia hizi dawa ama la kwani hatukai nao majumbani kwao japokuwa kitu ambacho tuna uhakika nacho

ni kwamba tunatoa elimu ya kutosha na wanaelewa, na mara nyingi elimu tutoayo inazingatia sana afya na usalama wa mama na mtoto.”

“Kwa mtazamo wangu si wanawake wote wanatumia hizo dawa, wanawake wengine wanalalamika kuwa hizi dawa zinawafanya wajisikie vinyesi vyao ni vigumu na vikiwa na rangi kitu ambacho kinawaogopesha. Wanadhani dawa hizi zina madhara kwao na hivyo huamua kuacha kutumia japokuwa tuliwaelimisha juu ya faida ya dawa hizo kwa mama na mtoto.”

“We cannot be for sure whether they are using the medications since we are not staying with them at home, although what we are sure of is we are educating them enough and they understood, the education base on the importance of the medication for both the mother and the child.”

“In my own opinions not all women uses the medication since some women claims that these supplements makes their stools hard and coloured something which frightens them. They think the medication has some side effects and make them stop from using them, despite the fact that they were told of the side effect during subscription. However this has been the case to so many uneducated pregnant women while educated women seem not to find them as a problem”

The finding signifies that low education is the main hindrance towards the usage of these supplements since most of women who found to have problem with these

supplements has education level of standard seven and below. Similar observation is made by Kinasha,etal (2002) of Dar es Salaam Tanzania as indicated in chapter two that there are women who use the Blood Supplement and there are those who do not use them at all, among the reasons brought forward was the fact that they make them feel nauseas so they would start and quit.

Loss of life is one among identified problem caused by excessive loss of blood among pregnant women but also it can lead to the death of the unborn child. The problem is excavated by the low level of knowledge among pregnant women which cause them ignoring using the medicine for their own benefits. Unfortunately, the problem will still persist as it has been noticed that the adopted modern culture makes most of Tanzania women lack the important nutrients as most of them are eating less nutritious foods. The finding is supported by one pregnant woman during an in-depth interview at Kigamboni hospital who argued that:

“Tatizo ni kubwa zaidi hasa kwakuwa wanawake wengi wetu tunaelewa mdogo kuhusu hatari ya kuwa na upungufu wa damu na matokeo yake,baadhi ya wanawake wanashauriwa kutumia mboga za majani na vyakula vyenye wingi wa madini ya chuma japokuwa wapo wanawake wanaohudhuria klinik and bado wana amua kutotumia hizi dawa ambazo ni muhimu kwa kiwango chao cha damu na hali hii inawafanya kwa muda mrefu kuwa na kiwango pungufu cha damu kinachopeleka kuhatarishamaisha yao wakati kujifungua”

“The problem is also very serious since most of us women have low knowledge on risks of having low blood and the result consequences,

some women are advised to use a lot of vegetables and other kind of foods with high amount of Iron Minerals although they are other women who attend clinics and yet decide not to use the medications necessary for their blood level and this situations makes them experience constant low blood level which endangers their lives during birth”

4.4 Accessibility of Folic Supplement in ANC

The finding on the accessibility and availability of the supplement showed that majority of the pregnant women who have had their daily clinic routine have never suffered loss of the medicines. However, this is not the case to some of the peripherals hospitals such as Kigamboni where the study reveal that some women are given half dosage and asked to incur cost of buying the remaining dosage from the private Pharmacies

However in other hospitals such as Temeke they have enough supply of these supplement, pregnant women who went to Temeke hospital have never run short of these dosages and instead they are all supplied of all the medicines at once. This is evidenced by the statement of one pregnant woman aged 25years old during an in-depth interview at Temeke Hospital who argued that:

“Tangu nimeanza kuja hii hospitali sijawahi kuona upungufu wa hizi dawa za kuongeza damu, kwa mtazamo wangu hizi dawa ni nyingi na zinatolewa wakati wote tunapokuja hospitalini, mfano nimepewa vidonge 10 kila kidonge siku moja na imekuwa hivyo kwa kila mgonjwa na tangu siku ambazo nimeanza kuja hapa”

“Ever since i started coming to this hospital i have never experienced shortage of these supplements in my view these medicines are plenty and we are being provided whenever we come to hospital for regular clinic check-ups, for instance i have been provided with 10 tablets each tablet one day and that has been the tendency for every patient ”

Above explanation shows that the supplements are available in hospitals and pregnant women are provided with supplements whenever attends clinics. Majority of the respondents during an in-depth interviews, argued that: there is high availability of Fe-Fo supplements to cutter for the need of all pregnant women who attend and being administered in RCH Clinics. One respondent had this to say during in-depth interview question which asked “In your opinions, Explain on the availability and accessibility of Fe-Fo Supplements at RCH Clinics at Temeke Hospital”

‘ Kiukweli tunazo dawa nyingi katika kliniki yetu na hii ni kutokana na shirika lisilo la kiserikali MDH linasaidia kutoa dawa hizi na nyinginezo muhimu ‘

“To be honest we have abundance of the Supplements in our Clinic and this is due to the fact that MDH also assist in providing the medication and the entire necessary supplement needed.”

CHAPTER FIVE

5.0. DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter presents the summary of the findings and researcher opinions, apart from respondents' views and experience, the researcher is of the opinion that the government should careful take into consideration to provide adequate services and education on the use of folic acid to decrease death of pregnant women and the unborn children in Tanzania caused by anemia. The ignorance level among pregnant women over the use and importance of Folic acid is moderately low. However, the findings have shown that average high numbers of women are aware of the importance of the Folic Acid Supplements as the supplement necessary for blood increase during pregnancy and post natal period. One woman supported the argument above by saying that:

“Dawa hizi ni kama muokoaji wa maisha kwa wanawake wengi wajawazito has wale wanaopimwa na kukutwa wanawana wana kiwango kidogo cha damu wakati wa kujifungua

“The supplements are like life saver to most of us pregnant women especially the ones examined to have low HB level during giving birth”

5.2. Usage of the Folic Supplements

However the usage of the Supplement is found to be a problem among few pregnant women. A reasonable number of women are observed to ignore using the supplement out of their poor reasons irrelevant to the effects pregnant women are likely to meet from refraining from using them. Apart from above explanation on the

perception and awareness of the Supplement, majority of women are found to be aware of the effect of Anemia to pregnant women. Anaemia is argued to have several effects to pregnant women especially at their third trimester.

During giving birth, women are likely to die during giving birth due to loss of blood. Most of women are tested to reach the Hb below 7g/DL which is nearly the below 8 g/DL the extreme below level where a woman would need a special attention by health providers. Women experiences severe loss of blood as well as giving birth at a very low weight condition which hampers the proper growth of children. Women are said to have very low blood as a result of a poor food as well as during giving birth where by women loose blood due to bleeding during delivery. These two can be ruled out as the main causes of Anemia among women however the unborn child is likely to be affected as it feeds from its mother. These observations can be supported by the study from USA CDC (2008) which suggests that:

“The Delivery itself is a factor as even in women with normal hemoglobin in the last trimester of pregnancy, almost a quarter (21%) had anemia at their first postpartum visit. Indeed, among low income women, the USA Centers of Disease Control and Prevention (CDC) found the prevalence of anemia to increase with gestation, noting 8%, 12%, and 29% in the first, second, and third trimester, respectively.

‘There is a real risk of transfusion, particularly among patients who have cesarean delivery where a preoperative hematocrit of 25% or less was associated with more than a third (36%) of the women receiving a blood transfusion CDC, (2008)’

Therefore the whole process of giving education to pregnant women however have resulted to improvement and let majority of women to be aware of the effect of Anemia especially during pregnancy. The government is trying its best to ensure there are enough of these supplements in the hospital and other health facilities. The government is making it possible to ensure that it stops or reduce the death of pregnant women during birth and after birth resulted from loss of blood. The only tasks the health providers are left with is to ensure they provide enough education to these women on importance of FeFo and side effect likely to get them in failure of using these supplements.

5.3 Accessibility of Folic Supplements

The supplements are at abundance level at all hospital however there are other hospitals observed to have once experience shortage of these supplements although it was for a very short period of time. These findings are supported by the statement of one Clinical officer from Kigamboni during in-depth interview who argued that:

‘Vizuri, ni mara chache tunakuwa na upungufu wa dawa hizi lakini tangu nimeanza kufanya kazi hapa tumekuwa na upungufu wa hizi dawa mara mbili japokuwa haikuchukua muda mrefu kabla hawaja tuletwa kutoka Manispaa

“Well it’s rare to experience shortage of these supplement but ever since I started working here we have experience this shortage twice although it did not take long time before they were brought to us from Municipal”

The study reveal that some do lack these supplement for a while though it takes some times for the medicines to arrive and this may cause some of the pregnant women not complete the dose as required due to the shortage of supplements, this is also supported by the statement of one pregnant woman during a FGD consisting of 6 pregnant women who had this to say and she was supported by her fellow women that:

“mh mwenzangu zinatolewa bure ila kuna kipindi huisha na zinauzwa madukani, tena wala si hela ndogo kama huwezi nunua ndo imekula kwako hivyo, mimi binafsi ishanitokea na nimeshasikia rafiki yangu pia akisema imemtokea”

“Mh my fellow, these Supplements are offered free of charge but sometimes are not available, the good thing is that they can be found at the shops but the price is very high and if you cannot afford then you won't get them, it has once happened to me and my friend as well

Therefore the issue of availability and accessibility of the FeFo Supplements to Pregnant women is not a problem as there are very rare cases the women have experience shortage of these supplement. The study also reveal that there are women deliberately decide not to partake the supplement and therefore the problem remained unsolved, but also the study shows that that there is still very low level of understanding among the women concern the use of these supplements especially on the positive and negative effect if they are taken or ignored respectively.

CHAPTER SIX

6.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary of the findings of the study, conclusions and recommendations for further research.

6.2 Summary of the Study

The purpose of this study was to explore the perception and understanding of pregnant women towards the use of folic acid supplement in Temeke District. The study focuses on three specific objectives namely: exploration of pregnant women perception towards the use of Folic Supplement, to assess pregnant women's understanding toward the effect of Anemia, to examine accessibility of Folic supplement in ANC, three research questions were formulated to guide data collection and analysis.

The study examines pregnant women perception and understanding on the use of folic acid, pregnant women understanding towards the effect of Anemia, folic supplements availability at the Ant Natal Clinic. The study used both in-depth interviews which most of them lasted for 10 up to 15 minutes and FGD consisting of 7-8 respondents. The FGD focused more on the pregnant women rather than health providers.

6.3 The Main Findings of the Study

Majority of women administered during in-depth and Focused Group Discussions are knowledgeable on the supplements FeFo as the medication used by pregnant

women before, during and after pregnancy period. They are aware of the dosage and the function of the supplement they also know that these supplements were of two kinds, one being in liquid form and the other one in tablets form. The pregnant women perceive these medications as the supplement necessary for their lack of blood although some of them decided not to continue using them with reasons such as bad taste, unpleasant smell and has effect on their digestive system.

Pregnant women understand that, severe loss of blood is dangerous and a serious problem among women, but also viewed that the anaemia examined to read $8 < \text{g/DL}$ is the worst situation and thus both parent and the unborn child could suffer severe and serious problems such as loss of weight or death. The pregnant women view that these medicines are available to all hospitals and RCH clinics, the supplement are available to all health facilities at large however encase the hospital run short of these supplement, they could still be found at the pharmaceutical at one's own cost but this is a rare case or someone's own wishes and willingness since they can still be obtained for free from a neighbouring public clinic.

The study reveal that there are women deliberately decide not to take the supplement and therefore the problem remained unsolved, but also the study shows that there is still very low level of understanding among the women concern the use of these supplement especially on the positive and negative effect if they are taken or ignored respectively. The findings on the side of health providers showed that 30.0% of the pregnant women prescribed with supplement do not finish the dose, they assert that it brings nausea and affect their digestive system and therefore decide not to continue taking them. The study reveals that the Blood Shortage (Anaemia) will still

be a problem among pregnant women but affecting a large number of women who are not educated. The findings also signifies that regardless of the education provided to people especially Pregnant women yet it's upon the understanding of women to determine their fate as you cannot force them. Majority of the women in Tanzania appear to have very low or rather poor social economic situation to enable them from getting the right food which is necessary for their health

6.4 Conclusion

Based on the mentioned findings, it can be argued that there is high understanding on the knowledge of the blood supplement (FeFo) among the pregnant women in Temeke district however there are very few women who claimed not to have known supplements before even using them, the main argument was that they were very careful in following the doctor's instructions on what kind of food to eat which could help in boosting the Iron minerals in the body. The study also revealed that poor knowledge and poor education are among the reasons for some of the women to ignore using the supplements.

Information from the field also suggest that almost all women are aware of the Anaemia to both pregnant women as well as the unborn child, deaths of women following excessive bleeding, giving birth to low birth weight babies, premature and sometimes pregnant women get miscarriage and lastly it is concluded that there are plenty of the supplements in health facilities such as hospital, clinics and pharmaceuticals, although in health facilities which are in peripheral occasionally experience shortage of supplements.

Moreover health providers showed that 30.0% of the pregnant women prescribed with supplement do not finish the dose, they assert that it brings nausea and affect their digestive system and therefore decide not to continue taking them. The study reveals that the Blood Shortage (Anaemia) will still be a problem among pregnant women but affecting a large number of women who are not educated.

The findings also signifies that regardless of the education provided to people especially Pregnant women yet it's upon the understanding of women to determine their fate as you cannot force them. This shows that despite of the effort of the Government to provide folic supplements free to pregnant women yet there is a need of pregnant women and women at bearing age to adhere with the use of folic acid in order to reduce the burden of anemia.

The study also reveal that there are women deliberately decide not to take the supplement and therefore the problem remained unsolved, but also the study shows that there is still very low level of understanding among the women concern the use of these supplement especially on the positive and negative effect if they are taken or ignored respectively.

6.5.Recommendation

It is suggested that, further more education should be provided to the pregnant women concerning the use of the supplement, since most of Pregnant mothers deaths are caused by the Anemia and the pregnant women who died of anemia are once prescribed FeFo supplement and yet they ignored using them. The Government may consider making sure that each facility has to be provided with enough supplements

since it was observed that some of the facilities run out of supplements and these cause pregnant women to purchase supplements as against the policy of the Government that pregnant women should be provided with folic acid freely. If possible, the Medical store department should reconsider manufacturing the FeFo with flavours which would attract more women who have been refusing using them due to bad smell. They should be educated that the supplements are more important than the side effect they are facing and instead they would prefer them instead of ignoring them.

Further researches are recommended to be conducted in the remaining two municipalities of Dar es Salaam (Ilala and Kinondoni) to assess perception and understanding of pregnant women towards the use of folic supplements. Areas of study should focus on strategies which could be used to reach out more pregnant women and bring more impact to their life.

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APPENDIX

Age:.....

Marital status:.....

Level of Education:.....

Area of Residence:.....

Professional:.....

Number of children:.....

Type of respondent:.....

KNOWLEDGE

Interview guideline to Nurse midwives and Focus Group Discussion

1. In your opinion, could you elaborate generally the availability of folic supplement in Ant Natal Clinic
2. Do you think Anemia is a health problem threatening life of pregnant women?
3. In your opinion, could you elaborate why anemia is still one of the major health problems threatening life of pregnant women?
4. Do you think pregnant women take folic supplement as per instruction? Please explain
5. Do you provide education on the importance of folic supplement to pregnant women?

Interview guide to pregnant women, women at bearing age and Focus Group Discussion

1. What do you know about folic supplement?
2. How do you use it?

3. Who told you about folic supplement?
4. Do you think folic supplement has effect to your life?
5. Do you think folic supplement are available in Ant- Natal Clinics.