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KNOWLEDGE AND HEALTH SEEKING BEHAVIOUR OF PREGNANT WOMEN ABOUT PREGNANCY INDUCED HYPERTENSION IN THE TAMALE METROPOLIS

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AWARENESS AND HEALTH SEEKING BEHAVIOUR OF PREGNANT WOMEN ABOUT PREGNANCY INDUCED HYPERTENSION IN THE TAMALE METROPOLIS

BY

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DECLARATION

I, hereby declare that this thesis is my own work towards the award of Master of philosophy degree in Community Health and Development and that, to the best of my knowledge it contains no materials previously published by another person nor material which has been presented for the award of any degree of the University, except where due acknowledgement has been made in the text.

Wunpini Dale Sayibu Imoro …… ……

(**Student**) Signature Date

Dr Ziblim Shamsu -Deen …… ……

(**Supervisor**) Signature Date

ABSTRACT

Pregnancy induced hypertension is one of the common and serious complications encountered in pregnancy and contributes significantly to the maternal and perinatal morbidity and mortality. This study was conducted to assess the knowledge and health seeking behavior of pregnant women about pregnancy induced hypertension in the Tamale Metropolis. Descriptive cross sectional survey design was used to conduct the study with simple random sampling technique used to sample the respondents from the study area. The study employed mixed approach for data collection. In all, 200 respondents were sampled from the study area. Findings from the research revealed that knowledge level of respondents concerning pregnancy induced hypertension was high but with low awareness on identifications of signs/symptoms on PIH. From the results, majority of the respondents (70.5%) indicated that the cause of PIH is not known. From the results, there was a statistical relationship between occupational status of respondents and knowledge of causes of PIH (χ^2=17.63; $p < 0.01$). Additionally, there was a statistical relationship between educational status of respondents and preferred place of health care (χ^2=8.91; $p < 0.05$). From the analyses, 23% respondents did not think nausea and vomiting are signs/symptoms of PIH. From the analyses, majority of the respondents (57%) said they often visited the health centres whilst others visited Faith based healers and Herbalist before going to hospital. The study recommends that Faith based healers and husbands/family members should be encouraged to allow pregnant women to seek health care at health centres only.

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Special thanks to my family; Rev. Thomas Sayibu, Madam Samata Mahama, Dr. Princess Nasara and Vincent Taalimbo for their support, suggestions and prayers. God could not have given me a better family.

DEDICATION

To my parents. This is a product of all their sacrifices.

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LIST OF ACRONYMS

ANC	Antenatal Clinic
DBP	Diastolic Blood Pressure
GHS	Ghana Health Service
GSS	Ghana Statistical Service
HBM	Health Belief Model
IUGR	Intrauterine Growth Restriction
MoH	Ministry of Health
OTC	Over The Counter treatment
PIH	Pregnancy Induced Hypertension
SPSS	Statistical Package for Social Science
SBP	Systolic Blood Pressure
WHO	World Health Organization

CHAPTER ONE

1.1 Introduction

This chapter contains the background of study, the problem statement, the research objectives and questions, the significance of the study, the delimitations of the study and the theoretical foundation underpinning the study. The chapter concludes with the presentation of the operational definitions that are used in the study as well as the organization of the research report.

1.2 Background of study

Globally, maternal mortality rates are unacceptably high in rural communities in low resource countries (WHO, 2012). In the year 2012, about 287,000 women died during pregnancy and childbirth with 99% of these deaths occurring in low resource countries (WHO, 2012). Pregnancy induced hypertension, a condition specific to pregnancy, includes gestational hypertension, pre-eclampsia and eclampsia (Singh and Srivastava, 2015; Olusanya and Solanke, 2012).

Gestational hypertension also known as pregnancy induced hypertension (PIH) includes all women who were non-hypertensive early in pregnancy, but who eventually develop hypertension without proteinuria (Olusanya and Solanke, 2012; WHO, 2013; Rahimi, Mozafari and Parsian, 2013). Maternal deaths from pregnancy induced hypertension result from complications such as renal failure, heart failure, placenta abruptio and disseminated intravascular coagulation (Rahimi, et al., 2013; Singh and Srivastava, 2015).

As a result of poor placental perfusion, there is intrauterine growth retardation, preterm birth, birth asphyxia and perinatal death (Conde and Belizan, 2000; Brazy; Olusanya and

Solanke, 2012). In PIH there is appearance of hypertension after 20 weeks gestation without proteinuria (Olusanya and Solanke, 2012; Bangal, Giri and Mahajan, 2011). The hypertension subsides after delivery within 12 weeks (Olusanya and Solanke, 2012). The term gestational hypertension or pregnancy induced hypertension (PIH) and pre-eclampsia are clinically more often considered as same with reference to management (Bangal, Giri and Mahajan, 2011). The transition from pregnancy induced hypertension to pre-eclampsia is ill defined so both are considered as one for management (Bangal, Giri and Mahajan, 2011). But prognosis for pregnancy induced hypertension is better than pre-eclampsia (Olusanya and Solanke, 2012; Bangal, Giri and Mahajan, 2011).

According to Anorlu, Iwuala and Odum (2011), PIH is a syndrome of hypertension with or without proteinuria and edema, with the clinical manifestation usually occurring late in pregnancy and regressing after delivery of the conceptus. It is a major pregnancy complication, causing premature delivery, fetal growth retardation, abruptio placentae, and fetal death, as well as maternal morbidity and mortality.

PIH is defined as the 'occurrence of hypertension after 20 weeks of gestation in a woman without prior hypertension' (Aziga et al., 2011; p34). According to Conde and Belizan (2010), PIH is defined as systolic blood pressure of at least 140 mmHg and/or diastolic blood pressure of at least 90 mmHg. When accompanied by proteinuria, the disorder is termed preeclampsia and when it is without significant proteinuria it is termed gestational or transient hypertension (Conde and Belizan, 2010; Aziga et al., 2011).

It is diagnosed when after resting the woman's blood pressure rises above 140/90 mmHg on at least two occasions, no more than one week apart after 20 weeks of pregnancy, in a woman known to be normotensive (Bangal, Giri and Mahajan, 2011). Pregnancy induced

hypertension (PIH) develops during pregnancy due to failure of trophoblast to completely invade and thereby destroying the spiral arteries by 20-24 weeks of pregnancy (Brown et al., 2013; Olusanya and Solanke, 2012).

Maternal deaths due to complications of hypertension occur in women less than 20 years when compared with the general pregnant population (Olusanya and Solanke, 2012). Most women are unaware of its presence while others have different views on the physiological and pathological cause and others associate its signs with superstitions (Brown et al., 2013). In Sub-saharan Africa pregnant women were reported taking minimum appropriate actions to reduce PIH as they particularly blame evil spirits and witchcraft for the condition (Conde and Belizan, 2010).

In Ghana the incidence of PIH is reported to be around the range of 9-10% of all pregnancies (Osei-Nketiah, 2011). This percentage varies among hospitals, clinics and communities and even regional and district levels (Osei-Nketiah, 2011). Globally, literature to confirm the magnitude of uncontrolled blood pressure among PIH patients appears to be scarce (Conde and Belizan, 2010). Empirical evidence suggests that PIH patients use religious beliefs to protect themselves from harm, to control disease and cope with hypertension (Conde and Belizan, 2010). Some use traditional herbs to control hypertension (Conde and Belizan, 2010).

PIH has been recognized for centuries, however, the etiology of this syndrome remains uncertain, limiting effective intervention. The most comprehensive epidemiologic work on PIH is still credited to Chesley, whose classic masterpiece was published in 1978 (Osei-Nketiah, 2011). In the two decades since then, numerous clinical and

epidemiologic studies have been undertaken, and laboratory research has been resolving some of the mysteries surrounding PIH (Poon et al. 2010).

From the discovery of the imbalance between thromboxane A2 and prostacyclin (prostaglandin I2) (Poon et al. 2010; Rahimi, Mozafari and Parsian, 2013) to the theory of trophoblastic hypoperfusion and endothelial dysfunction (Rahimi, Mozafari and Parsian, 2013), knowledge of the pathogenesis of PIH has been advanced.

New epidemiologic risk factors have also been identified. Based on several carefully designed, well-controlled recent clinical trials (Riaz, Habib and Jabeen, 2011; Osei-Nketiah, 2011), the incidence of PIH appears to range from 5 percent to 9 percent for gestational hypertension and from 5 percent to 7 percent for preeclampsia among nulliparous women without chronic hypertensive disease or diabetes mellitus (Rahimi et al. 2013).

The incidence of PIH in nulliparous women is 4-5 times higher than that in multipara (Rahimi et al. 2013). Despite the significant morbidity associated with new-onset of hypertension in pregnancy, the pathogenesis remains unclear, which limits the ability to prevent and treat this disorder. According to Singh and Srivastava (2015) although the cause of PIH is unknown, certain factors are known to increase the risk of PIH.

These identified risk factors include young women with a first pregnancy, pregnant women younger than 20 years and those older than 40 years, women with multiple fetuses, pregnant diabetics, pregnant women with pre-existing hypertension or previous episodes of pre-eclampsia or PIH and pregnant women with pre-existing renal disease (Singh and Srivastava, 2015).The significant morbidities associated with PIH make it a priority in all maternal health intervention programs.

Although it is widely accepted that PIH is unique to pregnancy and regresses after delivery, a large proportion of eclampsia patients have their first seizure during the puerperium (Rehana, Tanveer, Nasreen, 2010). Therefore, based on empirical observations, PIH consists of a matrix of subcategories characterized by the severity of hypertension and proteinuria (mild vs. severe) and the timing of onset (antepartum, intrapartum, or puerperium), and landmarked by the presence or absence of proteinuria and seizure. However, it is unclear whether these subcategories have truly distinct etiologies or simply reflect the continuous nature of the severity of this disorder (Männistö et al., 2013).

1.3 Problem statement

Globally, pregnancy induced hypertension is a significant maternal life threatening complication associated with an increased risk of maternal and perinatal mortality and morbidity (Rehana, et al., 2010). Causes of pregnancy induced hypertension are unknown. With early diagnosis, more severe complications like imminent eclampsia, eclampsia and Hellp syndrome can be averted (Männistö et al., 2013). In Netherlands 5% of all pregnancies were complicated by eclampsia and Hellp Syndrome (Männistö et al., 2013).

In Sub Saharan Africa, over 585000 women die annually from childbirth complications (WHO, 2010). Pregnancy induced hypertension complications contribute about 15% of the total deaths (WHO, 2010). Elevated blood pressure (BP) at early or mid-pregnancy is a risk factor for PIH.

However, the association between blood pressure changes during the first half of pregnancy and subsequent PIH development is unknown (Männistö et al., 2013).

Available literature from Botswana showed no association between PIH self-care knowledge and blood pressure control among pregnant women (Olusanya and Solanke, 2012).

In Ghana, available literature failed to reveal studies that focused on the relationship between PIH self-care knowledge and hypertension control among pregnant women. Studies carried out by Osei-Nketiah (2011) revealed that in Ghana, 40% of maternal deaths are as a result of hypertensive pregnancy, antepartum haemorrhage and post-partum haemorrhage.

Similarly, in a study conducted in the Tamale Metropolis among women concerning PIH it was found that 60% of the study participants lack knowledge on self-care management of PIH (Muzakiel, 2013). Available data from a study conducted by Musah and Iddrisu (2013) in the Tamale Teaching Hospital revealed that about 40% of pregnant women who attended ANC lack knowledge of self-care management of PIH and some of the pregnant women even considered oedema and weight gain as normal conditions of pregnancy.

Therefore, this study which seeks to assess the awareness and health seeking behavior of pregnant women about pregnancy induced hypertension in the Tamale Metropolis which nothing is known about is selected to address this important information gap in the literature.

1.4 Research questions

1. What is the knowledge level of pregnant women regarding pregnancy induced hypertension in the Tamale Metropolis?
2. What is the level of self-care management of PIH among pregnant women in the Tamale Metropolis?

3. How do pregnant women control PIH in the Tamale Metropolis?

1.5 Research objectives

1.5.1 General objective

The main objective of this study is to assess the knowledge and health seeking behavior of pregnant women about pregnancy induced hypertension in the Tamale Metropolis.

1.5.2 Specific objectives

1. To determine the knowledge level of pregnant women on pregnancy induced hypertension in the Tamale Metropolis
2. To assess the self-care management of PIH among pregnant women in the Tamale Metropolis
3. To examine how pregnant women control PIH in the Tamale Metropolis

1.6 Significance of the study

This study was conducted to provide local and contextual expressions by pregnant women on PIH in their reproductive age that could be incorporated locally into the design, administration and implementation of child birth programs in communities in Ghana and other rural settings. The findings would also inform policy makers and programme managers of the missed opportunities worthy of consideration in the implementation of programmes related to pregnant women perception of PIH.

Governmental organizations such as Ministry of Health (MoH), Ghana Health Service (GHS) and the Tamale Health Directorate, and other non-governmental organisations would find information from this research useful in the design and planning of their health programs especially concerning PIH.

The study identified places where pregnant women sought health care to manage PIH complications. These would guide health workers to design individualized care for pregnant women, thereby enhancing their use of health care facilities.

It would yield information that would add to the existing knowledge in academia and research in the field of child birth practices among women and related issues in the Tamale Metropolis and Ghana as whole. Other researchers would also use the findings to advance their arguments on related matters in maternal health care.

1.7 Delimitations of the study

Within the context of this research work, the focus was on assessing the knowledge and health seeking behavior of pregnant women about pregnancy induced hypertension in the Tamale Metropolis. The study examined the knowledge level of pregnant women on pregnancy induced hypertension, assess the self-care management of PIH among pregnant women and examined how pregnant women control PIH in the Tamale Metropolis. Only selected health centres were used as contact points to sample respondents. This delimitation of the study was done to manage the data collection considering the time and the resources of the researcher.

1.8 Theoretical foundation of the study

Health Belief Model (HBM) by Rosenstock (1966) was used to guide this study. The need to borrow some insights from social psychological models, particularly the Health Belief Model (HBM), to understand and predict health care seeking behaviour and health behaviour change has been suggested by Olusanya and Solanke (2012) especially among pregnant women. This follows increased emphasis on interdisciplinary approach to the understanding of health behaviour change especially among women.

HBM has been adjudged to be a useful tool in predicting health behaviour change (Rosenstock, 1966). It remains the most widely used theory in predicting and understanding health behaviour change in relation to most diseases (Olusanya and Solanke, 2012) and food handling behaviours (Olusanya and Solanke, 2012).

HBM assumes that health seeking behaviour or health behaviour change is influenced by certain cognitive variables as well as established mechanisms to minimize the occurrence of disease within the social system (Rosenstock, 1966).HBM suggests that individuals faced with alternatives would choose the action that would lead most likely to positive outcomes (Rosenstock, 1966). For a change to occur in health behaviour (in this case, for pregnant women to use seek health care to prevent PIH complications), HBM holds that the person must hold the following beliefs:

- Perceived susceptibility to a particular health problem, in this case PIH – whether they are at risk of PIH.
- Perceived seriousness of the health condition - how severe is PIH in pregnancy? What are the social and health consequences of PIH?
- Belief in effectiveness of the new behaviour – whether seeking health care are effective against PIH.
- Cues to action - witnessing the death or illness of a relative due to PIH.
- Perceived benefits of preventive action - if using treatment can prevent PIH in pregnancy.
- Barriers to taking action – impediments to seeking health care.

Therefore, the health belief model appears to be a landmark and powerful theoretical framework in social psychology capable of predicting and understanding health

behaviour change, particularly where the individual weighs the benefits against the perceived costs and barriers to change, to the extent that, the benefits outweigh costs.

Therefore it is important for pregnant women to understand the importance and meaning of knowledge of complications so that they can make a rational and appropriate care seeking behaviour concerning PIH. However, there is a dearth of PIH and health seeking behavior among pregnant women studies in the Tamale Metropolis where HBM has been used to understand and predict the health seeking behaviour in the prevention of PIH. This study attempts to fill this gap.

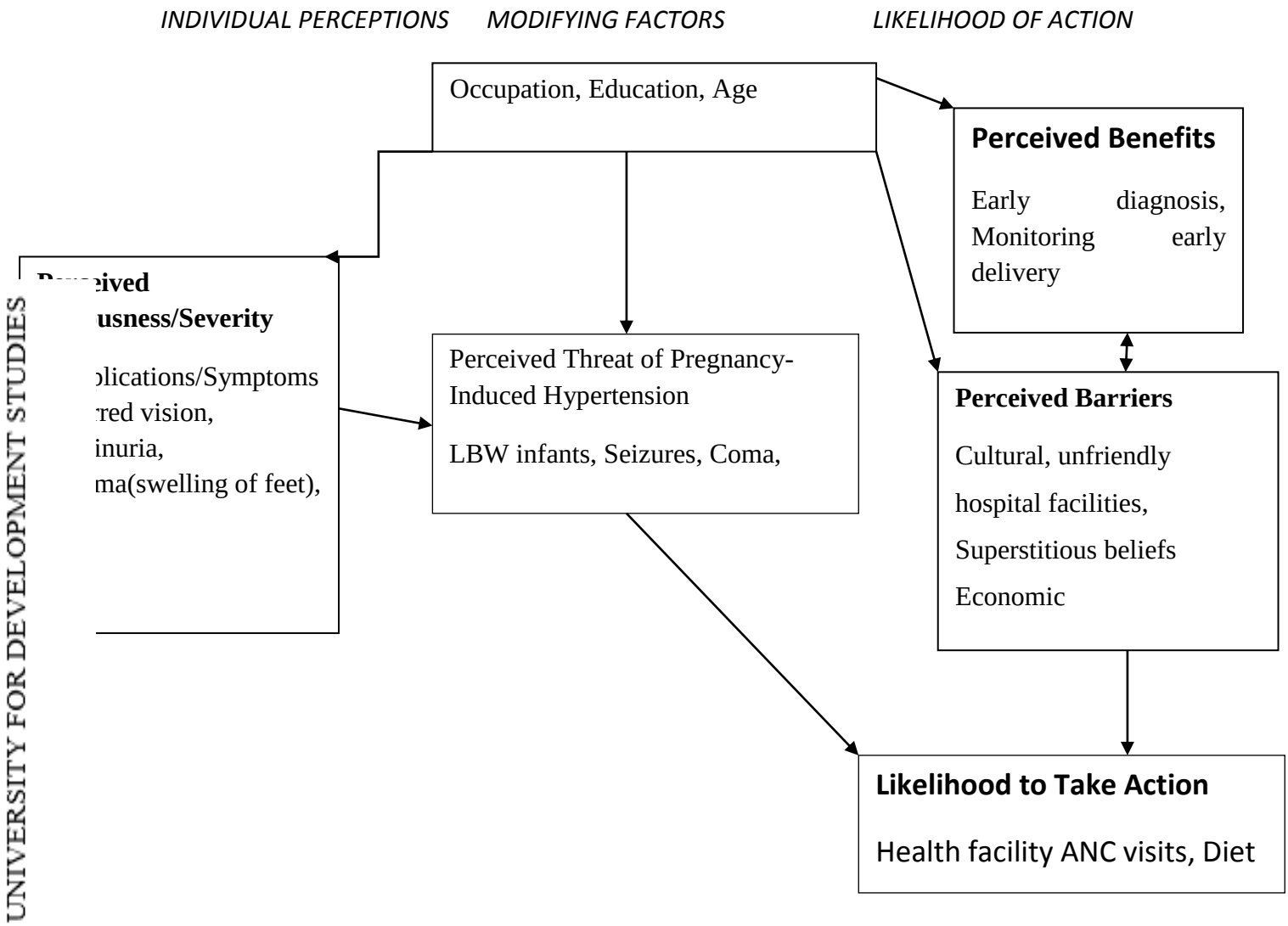


Figure 1.1: Conceptual framework on Health belief Model

Source: (Adapted from Strecher and Rosenstock, 1997)

1.9 Operational definition of terms

Operational definition means defining a concept or variable in terms of the operation or procedure by which it is to be measured. This research explained the following concepts as they are used in the research work for the sake of clarity.

- **Pregnancy Induced Hypertension (PIH):** A condition specific to pregnancy where there is development of hypertension at or after 20 weeks gestation.
- **Pre-eclampsia:** A multi-system disorder, which can affect the placenta, kidneys, brain and other organs.
- **Eclampsia:** The new onset of seizures during pregnancy or postpartum, unrelated to other cerebral pathological conditions in a woman with pre-eclampsia.
- **Health Seeking Behaviour**: An activity undertaken by individuals who perceives themselves to have a health problem to be ill for the purpose of finding a remedy.

1.10 Organization of the study

The research is organized into six chapters. Chapter one contains the introduction, background of study, the objectives of the study, research questions, significance of the research and delimitations of the study. Chapter two presents the literature review in relation to the issue under investigation possibly putting key issues and concepts under headings and subheadings for easy reading.

Chapter three presents a clear methodology that was used in conducting the study. Subsections such as profile of study area, research design, study population, sampling technique, sample size determination, data collection procedures, sources of data collection, data validity and reliability, limitations of the study, data processing and analysis and ethical considerations are discussed in the chapter.

Chapter four deals with the data analysis and presentation and chapter five presents the discussion of the data from the respondents with specific references to the reviewed literature. Chapter six contains the summary of the research findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The primary purpose of a literature review is to generate information on what is known and not known about the subject of interest, so that a broad understanding of the information is gained (Polit and Beck, 2008). A review of relevant literature assists the investigator to identify research methods used by others, weaknesses and strengths of chosen research designs so that one can avoid them in similar studies (Polit and Beck, 2008).

The overall goals of this chapter were firstly to establish the significance of the general field of study, and then identify a place where a new contribution could be made. The bulk of the chapter was on critically evaluating the different research methodologies that have been used in similar studies so as to identify the appropriate approach for investigating the research questions in this study.

2.2 Historical perspective of hypertension

The specific aetiology of preeclampsia has evaded scientists and physicians from the time of Hippocrates and since then, various models have been advanced. The symptoms of preeclampsia and eclampsia were previously described by the ancient Greeks (Easterling, et al. 2010) but eclampsia (preeclampsia with seizures) was differentiated from epilepsy first in 1739 by the French obstetrician Sauvages, and later termed eclampsia parturentium (Easterling, et al. 2010). After the detection of eclamptic hypertension at the end of the nineteenth century, the disease was considered a manifestation of essential hypertension, brought to light and particularly coloured by pregnancy.

2.3 Pregnancy Induced Hypertension explained

Pregnancy-induced hypertension (PIH) complicates 6-10% of all pregnancies (Duckitt and Harrington, 2014). It is defined as systolic blood pressure (SBP) >140 mmHg and diastolic blood pressure (DBP) >90 mmHg. It is classified as mild when it ranges from (SBP 140-149 and DBP 90-99 mm Hg), moderate when it is from (SBP 150-159 and DBP 100- 109 mmHg) and severe when it is within or above (SBP ≥160 and DBP ≥110 mm Hg) (Easterling, et al. 2010). PIH refers to one of four conditions:

- Pre-existing hypertension
- Gestational hypertension and preeclampsia
- Pre-existing hypertension plus superimposed gestational hypertension with proteinuria and
- Unclassifiable hypertension (WHO, 2011; Duckitt and Harrington, 2014). PIH is a major cause of maternal, fetal and newborn morbidity and mortality (Ahmad and Samuelsen, 2012; Conde and Belizan, 2010). Women with PIH are at a greater risk of abruptio placentae, cerebrovascular events, organ failure and disseminated intravascular coagulation (Ahmad and Samuelsen, 2012; Easterling, et al. 2010). Fetuses of these mothers are at greater risk of intrauterine growth retardation, prematurity and intrauterine death (Ahmad and Samuelsen, 2012). Worldwide approximately 76,000 women and 500,000 babies die yearly due to preeclampsia (WHO, 2011). In Sub-Saharan Africa more than 270,000 women die from maternal deaths mostly related to PIH (WHO, 2011). Studies have shown that up to 77% women affected with preeclampsia lack knowledge about

preeclampsia, and therefore cannot take preventative measures (Singh and Srivastava, 2015; Bakker*et al.* 2011).

It is believed that preeclampsia affects approximately 6-8% of all pregnancies, though the exact incidence rate remains unknown (Ahmad and Samuelsen, 2012; Bakker, *et al.*, 2011, Brazy, Grimm and Little, 2013, WHO, 2011). In Finland about 5% of all pregnant women are affected by PIH (Aziga*et al.* 2011).

Until the mid-1990s, PIH was a disease of first pregnancies, affecting most women's first pregnancy (Rahimi, Mozafari and Parsian, 2013). The pathophysiology of preeclampsia is still unknown (Aziga *et al.*, 2011; Mekbed and Ketsela, 2011). 'Preeclampsia has been described as a disease of theories, because the cause is unknown' (Feig, Shah and Lipscombe, 2013, Liu, Chang and Cheng, 2012, Mekbed and Ketsela, 2011).

2.4 Classification of hypertensive disorders in pregnancy

There are various classifications for hypertensive disorders in pregnancy based on diagnostic criteria (WHO, 2011; Roberts and Lain, 2012, Tuovinen, Raikkonen and Pesonen, 2012; You, Huo and Wang, 2012; Poon*et al.*, 2010). The widely accepted classification presently is International Society for the Study of Hypertension in Pregnancy (ISSHP) (Singh and Srivastava, 2015). According to this classification there are four categories:

2.4.1 Pre-eclampsia

Preeclampsia (PE) is defined as a serious complication of pregnancy (Poon*et al.*, 2010). It is a multisystem disorder characterized by the onset of gestational hypertension (140/90 mm Hg or more, measured in two separate readings taken at least 6 hours apart) and the presence of protein in the urine – proteinuria (defined as reading greater than 300 mg in a

24 hour urine collection; 1+ or more on dipstick testing or a protein: creatinine ratio ≥ 30 mg/mmol on a random sample) (Mekbed and Ketsela, 2011).

Preeclampsia occurs after 20 weeks' gestation. It may also occur up to six weeks after child birth (postpartum) (Mekbed and Ketsela, 2011). Other organs of the body such as kidney and liver may be damaged (Poon et *al.* 2010). Pregnancy complications due to preeclampsia include low birth weight, pre-term birth and still births. PE may have further consequences to the mother (Singh and Srivastava, 2015).

2.4.2 Chronic hypertension–essential or secondary

Chronic hypertension is defined as BP > 140/90 mm of Hg before pregnancy or before 20 weeks gestation, it complicates 3% of pregnancies (You, Huoand Wang, 2012). Most studies in the literature show that women who have had PIH have a higher mean blood pressure and 3-20 times higher risks of developing chronic hypertension in later life, in comparison with women who have been normotensive during pregnancy (Tuovinen, Raikkonen and Pesonen, 2012).

Women who have had recurrent PIH in subsequent pregnancies carry a especially high risk (Mekbed and Ketsela, 2011). Likewise, women who have had eclampsia as well as recurrent PIH in subsequent pregnancies have a much higher probability of developing chronic hypertension (Visintinet al., 2010). In addition, a study found that the earlier in gestation the eclampsia occurred, the higher the prevalence of chronic hypertension in later life (You, Huoand Wang, 2012).

2.4.3 Pre-eclampsia superimposed on chronic hypertension

When there is proteinuria of more than 300 mg/day or evidence of foetal growth restriction in cases of chronic hypertension this condition is termed as pre-eclampsia

superimposed on chronic hypertension (Mekbed and Ketsela, 2011). It is also explained as pre-eclampsia that develops in a woman with chronic renal disease (You, Huoand Wang, 2012).

2.4.4 Gestational/pregnancy induced hypertension

The term gestational hypertension was adopted by working group of NHBPEP (2000) to replace pregnancy induced hypertension but both are used concurrently (Brown et al., 2013; Roberts and Lain, 2012). Pre-eclampsia as per ISSHP classification is defined as new onset hypertension of more than 140/90 mm of Hg after 20 weeks gestation, proteinuria more than 300mg/day or a spot urine protein/creatinine ratio ≥ 30 mg protein/mmol creatinine (Singh and Srivastava, 2015; Buga and Shumu, 2011).

But when there is evidence of foetal growth restriction or end organ damage without proteinuria, the said clinical condition is branded clinically as pre-eclampsia as per ISSHP (Buga and Shumu, 1999). Chronic hypertension is defined as BP > 140/90 mm of Hg before pregnancy or before 20 weeks gestation, complicates 3% of pregnancies (Brown et al. 2013). When there is proteinuria of more than 300 mg/day or evidence of foetal growth restriction in cases of chronic hypertension this condition is termed as pre-eclampsia superimposed on chronic hypertension (Brown et al. 2013).

In gestational hypertension there is appearance of hypertension after 20 weeks gestation without proteinuria (Brown et al. 2013; Duckitt and Harrington, 2014; Jaramill, Garic, and Lopez, 2011). The hypertension subsides after delivery within 12 weeks (Jaramill, Garic, and Lopez, 2011).

2.5 Aetiology of PIH

There are various etiological factors for pregnancy induced hypertension. This is a disorder of hypothesis and affliction to involve all organs in the body (Jaramill, Garic, and Lopez, 2011). The potential causes of pregnancy induced hypertension are;

- Abnormal placentation (Tuovinen, Raikkonen and Pesonen, 2012)
- Vasculopathy and inflammatory changes (Poon *et al.*, 2010)
- Immunological factors (Obed and Patience, 2010)
- Genetic factors (Liu, Chang and Cheng, 2012)
- Nutritional factors (Poon*et al.*, 2010)

2.6 Pregnancy associated risk factors

- Multiple pregnancies (Tuovinen, Raikkonen and Pesonen, 2012)
- Structural anomalies (Poon *et al.* 2010)
- Gestational trophoblastic diseases (Tuovinen, Raikkonen and Pesonen, 2012)
- Urinary tract infection (Rahimi, Mozafari and Parsian, 2013)
- Chromosomal anomalies (trisomy 13, triploidy) (Rahimi, Mozafari and Parsian, 2013)

2.7 Health Seeking Behaviour explained briefly

Health seeking behaviour is an activity undertaken by individuals who perceive themselves to have a health problem or are ill for the purpose of finding appropriate remedy (Rosenstock 1966, Stretcher and Rosenstock, 1997). The purpose of this study was to determine what activities are undertaken by pregnant women with knowledge of PIH complications at the Tamale Metropolis. According to Rosenstok and Stretcher(1997) and Feig, Shah and Lipscombe (2013) pregnant women who knew the

complications associated with PIHbought anadin or aspirin (O.T.C) to relieve headaches, seek help from relatives for oedema, reduced urine output, epigastric pain and blurred vision. Spiritual healers or traditional healers were consulted on convulsing before going to hospital (Riaz, Habib and Jabeen, 2011).

This pattern of seeking health care causes pregnant women with pregnancy induced hypertension or with the knowledge of PIH to delay in seeking health care (Riaz, Habib and Jabeen, 2011). This could increase their risk of dying from complications such as renal failure, heart failure, placenta abruptio and disseminated intravascular coagulation or having a permanent ill health (Miettola, Hartikainen and Vaarasmaki, 2013). It could thwart the goals of safe motherhood introduced in 1997 to reduce maternal mortality and morbidity (Knight and Hay, 1999; Camazine, 2000).

2.7.1 The Health Belief Model

The Health Belief Model was used by White et al., (2012) to determine social psychological correlates of health behaviour and knowledge of breast self-examination techniques among black women in America. The study examined relationship between fear, perceived susceptibility and belief in self-efficacy of early detection of breast cancer as correlates of the likelihood that a procedure for self-examination will actively be known.

Three indices were constructed for the analysis index on knowledge of breast examination (dependant variable) was developed from two independent items in the interview. The first asked respondents to name a test used for early detection of breast cancer and the second whether the respondent would prefer self-examination. Two independent variables were constructed from attitudinal items perceived threat and

perceived susceptibility to breast cancer and basis for these perceptions (White et al., 2012).

The second belief system was a compilation of three items dealing with belief that breast cancer can be detected early and if treated effects of the disease are mitigated (perceived benefit). The classic paradigm associated with this research postulated a curvilinear relationship between perceived threat and behavior (White et al., 2012). A study by Goldstein et al (2012) used the HBM to explore the factors associated with participating in the screening programme for Tay-Sachs Disease among Jewish University Students. Hundred students (23.8%) of the students were among the 1845 subjects who opted to be tested. Those students who chose to be screened were significantly different from those who did not choose to be tested that is by increased desire to have children, their knowledge about Tay-Sachs Disease and their identity as Jews (Goldstein et al, 2012). Discriminate analysis showed that Jewish identity was by far the most important variable. Three variables in the HBM used were perceived susceptibility, perceived seriousness and social psychological factors which were found not to be associated with predicting which students would take the test or not.

The three variables knowledge of Tay - Sachs disease, desire to have children and Jewish identity were strongly associated with participating in the screening. The other study which used the HBM was by Simkhada et al., (2013) on its relevance to Australian smokers whose results showed that there was an increased awareness of smoking behaviours showing that modifying factors were the most important predicting factors.

Health beliefs about childbirth are as old as human history itself (Atinga and Baku, 2013). Globally, studies have indicated that there is often a conflict between the orthodox

medicine and the traditional beliefs of women (Atinga and Baku, 2013). In developed countries, most births take place in hospitals or delivery centres, where the available nurses, midwives and obstetricians follow the biomedical model of practice.

Furthermore, in these countries, pregnancy is seen as a medical condition which is largely treated using the biomedical model, with scientific explanations of procedures involved as well as the complications that may occur (Adjiwanou and LeGrand, 2013). However, as a result of globalisation, these developed countries frequently have community members from other cultures with health beliefs that need recognition and appropriate responses (Adjiwanou and LeGrand, 2013).

Studies have revealed certain health beliefs that pose a danger to the health of the woman (Atinga and Baku, 2013). In Tanzania, a study revealed increased mortality when women or their husbands followed traditional customs of administering traditional medicine to the woman during pregnancy and post-delivery (Kisuule *et al*. 2013).

A study conducted in Uganda showed that there was poor utilisation of the available Western maternal services, as most women preferred to give birth on their own at home, using a relative, a traditional birth attendant or another unqualified practitioner (Kisuule *et al*. 2013). Maternal death was seen as a 'sad but normal event' (Kisuule *et al*. 2013).

2.8 Knowledge level of pregnant women regarding PIH

Knowledge has been defined as possessions of relevant factors about the disease and knowledge of utilization of the health care facilities for treatment (Yucesoy, Ozkan and Bodur, 2010). Knowledge about PIH and its management is important as it influences health seeking behaviour of all pregnant women in the world (Tuovinen, Raikkonen and Pesonen, 2012).

Pre-eclampsia presents as hypertension associated with proteinuria (Rahimi, Mozafari and Parsian, 2013). Hypertension is a blood pressure of over 140/90 mm Hg on at least two separate occasions, 6 hours apart (Tuovinen, Raikkonen and Pesonen, 2012; Riaz, Habib and Jabeen, 2011).

It can also be a significant increase in either the systolic or diastolic readings (Visintin, et al., 2010; Riaz, Habib and Jabeen, 2011). The National High Blood Pressure Education programme classifies proteinuria as '1+ (300 mg/L or more) on dipstick testing, a protein: creatinine ratio of ≥ 30 mg/mmol on a random sample, or a urine protein excretion of ≥ 300mg/24 hours' (Visintin, et al., 2010).

Pregnancy induced hypertension (PIH) can be diagnosed without the onset of proteinuria with the following symptoms: severe headaches, blurred vision, upper abdominal pain, and/or altered biochemistry (Visintin, et al., 2010). These include raised urates, low platelet counts and abnormal liver enzyme levels (Feig, Shah and Lipscombe, 2013, You, Huo and Wang, 2012; Yucesoy, Ozkan and Bodur, 2010).

Eclampsia is defined as the new onset of convulsions during pregnancy or postpartum, unrelated to other cerebral pathological conditions in a woman with pre-eclampsia. It is one of the obstetrical emergencies (WHO, 2011). Eclampsia is a significant maternal life threatening complication associated with an increased risk of maternal and perinatal mortality and morbidity (Yucesoy, Ozkan and Bodur, 2010).

Causes of pregnancy induced hypertension are unknown (Visintin, et al., 2010). With early diagnosis, more severe complications like imminent eclampsia and Haemolytic anaemia, Elevated Liver enzymes and Low Platelet Count (HELLP) syndrome can be averted (Visintin, et al., 2010).

According to Maternal and Perinatal Mortality National Study of (2007) conducted in Zimbabwe,364 mothers died in 2006, 15.7% of these died from PIH placing PIH among the top five causes of maternal deaths in Zimbabwe (East et al. 2011). In South Africa, preeclampsia remains the most common cause of perinatal mortality and morbidity in KwaZulu Natal region (Conde and Belizan, 2010; Feig, Shah and Lipscombe, 2013).

In Netherlands 5% of all pregnancies are complicated by eclampsia and HELLP Syndrome (Duley, Meher and Abalos, 2014). In Brazil, Venezuela and Mexico, it is estimated that 22%-35% of all maternal deaths are associated with pre-eclampsia complications (Chhabra and Kakan, 2013; Conde and Belizan, 2010). Many studies have shown a relationship between dietary deficiencies and incidence of pregnancy induced hypertension.

A diet high in fruits and vegetables that have antioxidant activity is associated with decrease in the incidence of pregnancy induced hypertension (Good, 2013). Antioxidants enzymes and antioxidant nutrients, including carotenoids, alpha-tocopherol and thiols are the primary defence against oxidative stress and free radical induced damage (Mannisto, Mendola and Vaarasmaki, 2013). Antioxidants protect the endothelial cell membrane against free radical damage by their quenching abilities (Mannisto, Mendola and Vaarasmaki, 2013).

When protective mechanisms are compromised, the products of lipid peroxidation increase with decrease in antioxidant carotenoids. This imbalance leads to oxidative stress and tissue injury (Obed and Patience, 2010; Miettola, Hartikainen and Vaarasmaki, 2013). Protective antioxidant systems are deficient in pregnancy induced hypertension as low placental tissue and maternal serum carotenoid level such as β carotenes; lycopene

and canthaxanthin have been observed in pregnancy induced hypertension (Miettola, Hartikainen and Vaarasmaki, 2013).

Vitamin C and Vitamin E supplementation between 16 to 22 weeks gestation decreases the incidence of pregnancy induced hypertension by more than 50% (Olusanya and Solanke, 2012). A study in Tanzania by Jaramill, Garic, and Lopez (2011) showed that lack of information about seriousness of heredity component of hypertension delayed the women from seeking care early during pregnancy.

Many did not associate certain symptoms with pregnancy to PIH but instead with normality making symptoms of PIH less serious in their eyes. Even serious complications like imminent eclampsia, blurred vision, reduced urine output and confusion were not identified by the pregnant women (Jaramill, Garic, and Lopez, 2011).

Therefore it is important that pregnant women understand the importance and meaning of complications so that they can make a rational and appropriate care seeking behaviour concerning PIH (Visintin et al., 2010). This should assist midwives to note that an individual's behavior occurs against a background of their past experiences, stresses, social relations, knowledge within the cultural, political and economic and environment characteristics of the society concerned.

A research in Bangaladesh by Ahmed et al. (2011) showed that women of child bearing age die from eclampsia. More than half of these maternal deaths cases were due to delay in seeking care as they would have failed to identify earlier symptoms of PIH complications and other conditions. A study in Nigeria by Anorlu, Iwuala and Odum (2011) showed that most pregnant women die of preeclampsia and bleeding.

More than half of these maternal deaths were due to delay in seeking care as they would have failed to identify earlier symptoms of PIH complications and other diseases. A study in Bangladesh by Ahmed et al. (2011) concerning factors determining Health Care Utilization by pregnant women who developed pregnancy complications showed that for each reported complication those who had convulsions/fits and bleeding, 32.6% sought care from a doctor, nurse or a village health worker the previous day, 46% did not seek care and 21.6% sought care from either a village doctor (traditional healer) or herbalist or any other source from unqualified people to take care of the complication.

Among those who reported high risk complications such as oedema more than 73% did not seek health care and only 14% sought healthcare from a doctor or nurse. Over 62% respondents who reported having excessive vomiting did not seek any medical care, while only 17% sought care from a nurse or doctor (Ahmed et al. 2011). In a population based, retrospective, cohort study based on 16,936, intrauterine growth retardation secondary to pregnancy induced hypertension was associated with significantly increased perinatal mortality (Aziga et al. 2011).

A study by Buga and Shumu (2011) on health seeking behaviour of patients with obstetric complications in Zambia showed that majority (75%) of the pregnant women first went to a traditional healer or some other persons or relatives who had some knowledge on herbs before going to the primary health care. Only 25% reported first to health centre for treatment.

In a study to determine the risk factors, prevalence, epidemiological parameters and maternal-perinatal outcome in pregnant women with hypertensive disorder, found that 24 cases of intrauterine foetal demise out of 255 cases, and 10 foetuses died during the

intrapartum period. Perinatal mortality rate was found to be 144/1,000 births (Duckitt and Harrington, 2014). Knowledge of causes and prevention of pregnancy induced hypertension disease increase with increasing level of education.

A statistically significant association between knowledge of PIH and educational status of subjects was found in a study conducted by Kinoti and Padachy (1997) in Zimbabwe. The findings revealed that educated pregnant women were better informed of PIH than their counterparts who were not educated.

The knowledge of causes and management of pregnancy induced hypertension by education level (illiterate compared with educated), showed a highly statistically significant association among subjects concerning PIH. This association was also apparent when knowledge of causes and prevention of subjects were analysed. Findings showed that educated study participants were 12 times more likely to know how to prevent PIH during pregnancy (OR; 12.0; P=0.012).

A research in India by Camazine (2010) revealed that majority of pregnant women with obstetric complications including those with PIH, 90% had a poor overall knowledge about the obstetric complications while the rest had only a satisfactory level. Over two-thirds (77.7%) were unable to name one or more PIH complications.

Of those who at least named one complication, 69% named convulsions, 51.1% stated retinopathy, 34.3% cited reduced fetal movements and 28.6% cited renal failure. Very few 10% stated fetal complications and abruption of placenta.

Only 17% of patients were able to cite death as a complication. However 66.05% were aware of generalized oedema. Very few were aware that confusion and headache were complications of PIH. Seeing flashes before the eyes was mentioned by 8.7% of patients.

Less than one-third (31.7%) were able to mention heart-failure as a complication of PIH. In a cross-sectional study conducted by Ahenkorah et al. (2011) among Ghanaian women concerning PIH, findings revealed that most of the women did not consider convulsions as a complication of PIH during pregnancy but as a cause of witchcrafts.

However the majority (96.3%) were able to cite abnormally high blood pressure as a sign of PIH during pregnancy (Ahenkorah et al., 2011). Only 17.7% knew that nausea and vomiting were associated with PIH complications. In a study to evaluate the knowledge of pregnant women concerning what causes PIH in Tanzania, most (80%) of the pregnant women mentioned that PIH was caused by stress, few (12%) mentioned witchcraft whilst the rest identified that the real cause was not known.

In a related survey conducted by Mekbed and Ketsela (2011), concerning what causes PIH among pregnant women in Zimbabwe, majority of the study participant identified witchcraft, others stated that PIH was normal in pregnancy whilst others identified stress.

In a descriptive cross sectional study conducted by Anorlu, Iwuala and Odum (2013) concerning signs and symptoms of PIH in Lagos, Nigeria among pregnant women, more than half of the study participants (78%) did not consider nausea and vomiting as signs and symptom of PIH, 20% of the study participants did not consider reduced urine output as signs and symptoms of PIH and only 2% of the study participants considered abdominal or epigastric pain as sign and symptom of PIH.

In a cross sectional survey conducted by Good (2013) in Zambia concerning pregnant women knowledge of signs and symptoms of PIH, findings revealed that majority of the study participants did not have the knowledge to identified signs and symptoms of PIH whilst a relatively few study participants mentioned oedema.

In Nepal, most study participants in a descriptive cross sectional study had adequate knowledge concerning signs and symptoms of PIH (Anorlu, Iwuala and Odum, 2013). In Ghana, most women in a descriptive cross sectional study had knowledge in identifying signs and symptoms of PIH (Osei-Nketiah, 2011). Most of them identified confusion, blurred vision and death of woman (Osei-Nketiah, 2011). According to a study conducted by You, Huo and Wang (2012) among pregnant women in Henan Province in China, most of the study participants mentioned that nausea and vomiting was not considered as a complication in pregnancy and was not related to PIH.

In a population based study in Addis Ababa by Mekbed and Ketsela (2011) concerning pregnant women knowledge of PIH complications findings revealed that majority of the study participants' mentioned that confusion during pregnancy was a punishment from evil spirits. According to Feig, Shah and Lipscombe (2013) most pregnant women considered continuous frontal headache as a punishment by bad witches during pregnancy and other jealousy rivals which was not considered as health centre "sickness". Similarly, a large cohort study in Latin America and Carribean among women by Conde and Belizan (2010) revealed that most of the women considered the swelling of face and fingers during pregnancy as a complication of PIH. Camazine (2010) found that among the Zuni Indians of New Mexico, pregnant women considered deaths of fetus inside the uterus as a sign of complication of PIH.

Studies have shown that generalized body weakness, very high blood pressure, deaths of fetus inside the uterus and drowsiness/feeling sleepy were considered normal in pregnancy among pregnant women and not as a complication related to PIH which needed to go to health centre for treatment (Feig, Shah and Lipscombe, 2013). Most

pregnant women did not consider rapid weight gain in pregnancy as part of signs and symptoms of PIH but very normal in every pregnancy which need to be given medical attention (Ahmad and Samuelsen, 2012).

2.9 Self-care management of PIH among pregnant women

Globally, people health seeking behaviour is related to their activities undertaken by individuals who perceive themselves to have a health problem, or are ill for the purpose of finding an appropriate remedy (Dolea and AbouZahr, 2013; Feig, Shah and Lipscombe, 2013). Different sources from which people seek health care are grouped as popular, folk and professional sectors (Ahmad and Samuelsen, 2012).

Popular sector includes therapeutic options such as self-treatment and advice from friends and relatives (Ashford, 2014). Folk sectors include street market drug vendors, as well as different traditional and spiritual healers (Ashford, 2014). Professional sector is the officially sanctioned health facilities including public health centres, hospitals and private clinics (Ashford, 2014, Bakker *et al.*, 2011; Conde and Belizan, 2010).

A study on health seeking behaviour of pregnant women with PIH related complications in the Zambia showed that 61% of the clients had taken some kind of medication before coming to hospital, forty percent had taken over the counter treatment and 24% had used traditional healers (spiritual and n'angas) substances to administer on themselves.

Studies by Duley, Meher and Abalos (2014) and Anorlu, Iwuala and Odum (2011), aimed at finding out what transpires during an illness among pregnant women in Lagos, Nigeria revealed that when treatment is sought a pattern or sequence is followed by the pregnant

women. They rely to a greater extent on home remedies, followed by traditional care, use of unqualified medical staff and finally use of professionals.

In a descriptive cross sectional study conducted by Bangal, Giri and Mahajan (2011) among Urban Slum women in New Delhi, findings revealed that most of the women considered blurred vision as dangerous and usually has to seek treatment at the health centre. In a related development, most pregnant women in Northern India according to a study carried out by Awashi, Verma and Agarwal (2013) revealed that pregnant women as part of self-management considered good diet and regular ANC visits as the best way to management PIH.

According to the WHO (2011) knowledge of pregnant women concerning how to manage pregnancy induced hypertension was common on the global perspectives. In a survey conducted by Bakker, *et al.,* (2011) on knowledge of PIH management among pregnant women in Kenya, it was revealed that 60% of the pregnant women did not know anything about PIH whilst the rest claimed they could manage PIH. Similarly, in a study conducted by Conde-Agudelo and Belizan (2010) revealed that knowledge of pregnant women on PIH management was very low in Uganda among pregnant women. It is also revealed that believes and negative attitude of pregnant women was related to the issues of pregnancy induced hypertension.

In Zimbabwe Dolea and AbouZahr (2013) found out that many Shona pregnant women believe that illness may either have a normal or abnormal cause. Illness could be caused by angered or aggrieved spirits that return to punish the wrongdoer or his kinsmen. The guilt or his kinsmen become sick. Diviners are consulted and advice on steps to take in order to satisfy angered spirits (Dolea and AbouZahr, 2013).

It was observed that convulsions were believed to be caused by evil spirits (Good, 2013). Khumanthem, Chanam and Samjetshabam (2012), revealed that nearly all the study participants who were pregnant women believed that any time a woman has signs and symptoms of PIH, she was advised to see a witch doctor before going to the health centre. Furthermore, studies also revealed that most pregnant women in Tanzania, believed that any time a pregnant woman has signs and symptoms of PIH, the best way to manage it to see a native doctor or see a herbalist before going to health centre (Gillies, 2010; Good, 2013).

In Bangladesh Matsuda et al. (2011) revealed that self-care treatment was the most common choice of treatment irrespective of age group among pregnant women. For both groups the most commonly consulted type of care provider was a health worker Matsuda et al. (2011). In a related development most pregnant women did not consider generalized oedema during pregnancy as a serious complication that needs to be managed in the health centre (Olusanya and Solanke, 2012).

In an editorial article regarding the use of antihypertensive drugs in pregnancy, it was stressed that there is an urgent need to treat hypertension in pregnancy when blood pressure is more than 170/110 mm of Hg to prevent cerebral vascular damage (Miettola, Hartikainen and Vaarasmaki, 2013). Other studies recommended Labetolol intravenous to be safe and effective in acute severe cases (Good, 2013).

After initial treatment the maintenance oral therapy is considered. The drugs advised for oral therapy include methyl dopa and Labetolol. The indications for antihypertensive drugs for mild to moderate cases are less clear (Olusanya and Solanke, 2012). The main role of antihypertensive drugs is to control hypertension not the evolution of disease in

pregnancy induced hypertension (Olusanya and Solanke, 2012; Rehana, Tanveer, and Nasreen, 2010).

A health survey carried out by Kawuwa, Maringa and Usman, (2010), Jaramill, Garic, and Lopez, (2011) revealed that extra costs incurred such as transportation and loss of income in making the visit to hospital is critical to the poor hence affect utilization of health care services among pregnant women. The costs of services determine whether treatment would be sought and at what place. Location of the facility where the treatment is sought (clinic, home treatment, hospital, traditional healer etc), the person doing the PIH management (traditional, professional practitioners, nurse).

A positive association was indicated between household consumption levels (measured by household consumption expenditures) and the incidence of using health care facility or health seeking behavior during illness. Management of PIH was frequently given at home by family members and traditional practitioners if the house hold is poor (Jaramill, Garic, and Lopez, 2011). In a study to assess pregnant women knowledge on self-care management of PIH in Africa, diverse results were found.

In Tanzania, 34% of pregnant women had the attitude of adding salt to food before tasting it and 23% had the attitude of putting plenty salt in food before eating whiles 43% of mothers had the attitude of eating wrong diets and never thought of engaging in any form of exercise. All these were not considered as ways of managing PIH (Obed and Patience, 2010; Khumanthem, Chanam and Samjetshabam, 2012).

Pregnant women in Tanzania feared taking their drugs because of side effects. A good number also skipped their drugs and some refused to attend antenatal care if they notice PIH complications because they could manage it at home (Miettola, Hartikainen and

Vaarasmaki, 2013). A survey conducted by Anorlu, Iwuala and Odum (2011) revealed that pregnant women had a poor knowledge of common and serious related pregnancy induced hypertension complications and how to manage them.

It was revealed that Fifty-six percent of pregnant women perceived absent or decreased fetal movement as a danger sign of pregnancy induced hypertension but lack the knowledge to manage it (Anorlu, Iwuala and Odum (2011). In Ghana, studies carried out by Osei-Nketiah (2011) on pregnancy induced hypertension revealed that pregnant women knowledge on self-manage PIH was not encouraging. Similarly, in a study conducted in Pakistan among women on PIH it was found that 40% of mothers lack knowledge on self-care management of PIH (Liu, Chang and Cheng, 2012).

Several studies on PIH among pregnant women seem not to produce a uniform response of universal knowledge.Mannisto, Mendola and Vaarasmaki (2013) studied patterns of self-care knowledge levels among 64 mothers with PIH in Tanzania, indicated that 54% mothers had knowledge on pregnancy-induced hypertension and not PIH self-care. Olusanya and Solanke, (2012) expressed similar findings and reported that in Uganda, 44% of mothers with PIH were knowledgeable on PIH and not PIH self-care.

Pregnancy induced hypertension has always been linked to evils spirits, witchcrafts and dwarfs hunts (Olusanya and Solanke, 2012) relating its management to choice of certain places. In a survey conducted by Liu, Chang and Cheng (2012) on pregnancy induced hypertension among pregnant women in China, it was revealed that, 45% of the pregnant women associated the high pressure they were experiencing to evil spirits, 55% attributed signs of PIH to witchcraft and 5% said PIH was normal in every pregnancy and hence had to manage it in a particular way very common to them.

Similarly, pregnant women in Sub-Saharan Africa were particularly reported to take minimum appropriate actions to reduce PIH as they particularly blame evil spirits and witchcraft for signs and symptoms (Olusanya and Solanke, 2012). In India, a survey conducted by Rahimi, Mozafari and Parsian (2013) revealed that pregnant women had very poor knowledge related to the symptoms of PIH and hence took minimal steps to manage it.

In their study to establish the knowledge and practice of 70 pregnant women about PIH, 55% were found to be unaware of PIH conditions whilst the rest knew of the condition but took minimal steps to manage certain signs of PIH (Aziga, et al. 2013). Anecdotal evidence suggests that women at Chitungwiza Central Hospital have health seeking behaviours which range from buying over the counter drugs to relieve headache during pregnancy, consulting relatives on what to do with odema during pregnancy, epigastric pain and blurred vision, consulting a spiritual or traditional healer on convulsing before going to hospital (Riaz, Habib and Jabeen, 2011).

All these health-seeking behaviours may delay pregnant women from coming to hospital early to seek treatment, worsening the PIH complications. According to Tuovinen, Raikkonen and Pesonen (2012) a significant proportion of women did not perceive obstetric complications on time which led to delay in seeking help. In other cases obstetric complications were perceived but care was not sought (Yucesoy, Ozkan and Bodur, 2010).

Similarly a research by You, Huo and Wang (2012) found that in rural Zimbabwe 96.6% of women of childbearing age indicated that they go to traditional health specialists for unnatural diseases such as convulsions or unexplained symptoms during pregnancy

especially on complications related to PIH. About 3.05% purported to be seeking professional health care only, 0.05% said they never consulted traditional healers nor went to hospital since their religion did not allow.

They consulted faith healers or use self-treatment (You, Huo and Wang, 2012). Contrary to You, Huo and Wang, (2012) findings, Miettola, Hartikainen and Vaarasmaki (2013) and Kawuwa, Maringa and Usman (2010) found out that dual use of traditional medicine and professional care were thought to complement each other among pregnant women as self-management options during PIH complications.

A health cross sectional survey conducted by Khumanthem, Chanam and Samjetshabam (2012) showed varied responses among the study participants. Findings from the research examined health seeking behavior in Maternal Child Health and health seeking behaviour. They found the following health seeking behaviours for obstetric complications including PIH complications in order of their preference.

It was discovered that most of the study participants (64%) opted for home or self-care treatment before going to the nearest health centre, indigenous practitioner treatment accounted for 30%, intermediate practitioner treatment accounted for 4%, and medical practitioner treatment was 2%. Depending on etiological causes of illness attached to it medical care was sought first for natural causes of illness like nausea and vomiting during pregnancy. Supernatural causes called “maraz” (evil spirits, bad airs and witchcraft) they sought indigenous practitioner treatment.

Confusion and continuous headache (both attributed to evil spirits/ possession) the pregnant woman was taken to for traditional healing (Khumanthem, Chanam and Samjetshabam, 2012). This pattern of health care seeking delay women from seek

medical treatment increasing the number of women with pregnancy induced hypertension dying from abruptio placenta, convulsions, renal failure and disseminated intravascular coagulation.

Convulsions, stomach aches, headaches and eye problems were never taken to hospital before traditional healers as they were better treated there than in hospitals, according to (Good, 2013). In a landmark survey conducted by Ahmedet al. (2011) on whether pregnant women with pregnancy induced hypertension in Burundi had any self-care management alternatives, it was found that 68% of the pregnant women said they managed to control their blood pressure, 22% failed to control their blood pressure and 10% of them said they had control their hypertensive disorders. According to Easterling et al. (2010) self-care knowledge increased hypertension control among pregnant women in Nigeria and stated that self-care knowledge was good among the pregnant women.

In a similar research conducted by Conde-Agudelo and Belizan (2010) in Canada among pregnant women about pregnancy induced hypertension, most lack the knowledge of identifying ways of managing PIH. In Japan, only 20% of pregnant women said they were reducing plenty salt in their food intake and do occasional walk around their houses as a form of exercise to manage PIH. Most pregnant women in Bindura district for example appeared to lack appreciation of the need for medication, constant follow up visits and diet in managing PIH (Conde-Agudelo andBelizan, 2010).

As a result, self-care activities such as frequent visits to ante natal clinics were not adhered to.As noted by Duckitt and Harrington (2014), misconceptions about PIH lead to lack of general awareness and pregnant women went to health centres when it was too late with pregnancy induced hypertension. A study by Ahmed, Bremer, Magazoals and

Nouri (2003) to determine diabetic knowledge of disease and their management behaviour revealed that no significant linear association was observed between the overall knowledge level and the behaviour related to diabetes mellitus management (x^2 = 0.93).

On the contrary, a research by Kasule et al (1997) on symptoms and consequences of sexually transmitted diseases was very low but overall knowledge increased with age. In this study the investigator will determine whether there is any relationship between age and knowledge of PIH complications (Bradshaw, Laubscher, and Fourie, 2014).

Jaramill, Garic, and Lopez (2011) expressed similar findings and noted that 60% of pregnant women in Zimbabwe possess knowledge on prevention of cancer but lacked knowledge on self-care management of PIH. Pregnant women who develop PIH complications at Chitungwiza Central Hospital were found to be delaying to seek health care from professionals (Jaramill, Garic, and Lopez, 2011).

After developing a severe headache (one of the symptoms of imminent eclampsia) the pregnant women with PIH would buy over the counter treatment (O.T.C) like aspirin, anadin etc to relieve the headache instead of quickly reporting to hospital for proper care.

For abdominal pain, they ignored the symptoms after being told by friends or relatives that it happens in pregnancy (Jaramill, Garic, and Lopez, 2011). For blurred vision, confusion and convulsions they were taken to a faith healer who immersed them in water as part of a cleansing ceremony as these were attributed to evil spirits or bad airs during the cleansing ceremony these women risk aspirating and dying.

All these delayed pregnant women from seeking health care on time (Jaramill, Garic, and Lopez, 2011). Elderly pregnant women were less likely to choose self-care treatment and

were more likely to seek professional treatment as compare to the younger ones (Jaramill, Garic, and Lopez, 2011).

Similar findings have been reported from rural Ghana where economic ability of women was found to be a major factor affecting health (Atinga and Baku, 2013). Financial dependence of women on their husbands affects their decision making because health care options must be supported by their husbands. Women lack the power to spend money on health care without their husbands' permission. Similar findings have been reported elsewhere in Uganda (Adjiwanou and LeGrand, 2013).

Similarly, although Kisuule *et al.* (2013) found that though parity significantly influenced antenatal care attendance, level of education, religion and marital status did not. Hence, the differences in the antenatal care seeking behaviour among women could be more attributed to other factors like pregnancy perceptions and experiences than educational differences (Kisuule *et al.* 2013).

Perceptions of men and women depict the agitation of men to deny their wives or daughters-in-law from seeking antenatal care to avoid exposing their genitals to other men who are not their husbands because (Tetui, et al., 2012). Most women prefer TBAs and herbalist, who are dominantly older women, to doctors/midwives/nurses (Tetui, et al., 2012).

Usually Traditional Birth Attendants do not see private parts during attendance, except they just feel by touching which is more common in the rural parts of the country. Hence, it is imperative for the health care takers of expectant women to be aware of these contextual and cultural realities as they welcome, teach, sensitize and assist women during antenatal care visits.

Health beliefs about pregnancy and childbirth affect the woman's choice to use healthcare facilities and the acceptance of the advice given by healthcare practitioners at a facility (Atinga and Baku, 2013). In other cultures in Russia, health beliefs about pregnancy and the biomedical model of practice have been integrated successfully, in that women are allowed to practice their traditional customs as long as they prove to have no detrimental effect on the health of either the mother or the baby (Adjiwanou and LeGrand, 2013).

This indicates that healthcare practitioners have to be aware of the beliefs held and practised by pregnant women in the community and what can be done to address these in a way that enhances both cooperation and the wellbeing of the mother and baby. At Chawama Health Centre, the principal researcher frequently encountered health beliefs that were expressed by the attending women or their relatives.

Kisuuleet al. (2013) noted that health beliefs could ultimately affect health outcomes as they influence behaviour. Since health beliefs at the health centre related to diet, behaviour and the use of medicinal herbs during pregnancy and post-delivery, they could have a direct effect on both mother and baby. Therefore, a need was identified to elucidate and determine to what extent each belief was held (Kisuuleet al. 2013).

2.10 How pregnant women control PIH

Preference for a certain belief system is thought to be influenced by modern or traditional thinking and education (Bakker, Steegers, Hofman, Jaddoe, 2011; Aziga et al. 2011). Attitudes leads to a tendency not to seek help or delay seeking help until the condition is too serious to ignore (Aziga et al. 2013). Black people have culturally developed an increased tolerance for illness (Ahmad and Samuelsen, 2012).

It can also be the same with pregnant women with PIH complications at Chitungwiza Central Hospital. Serious PIH complications may affect a considerable proportion of pregnant mothers with pregnancy induced hypertension if the disease is not properly managed. The success in treatment of PIH complications depends largely upon the health seeking behaviour of the pregnant women (Olusanya and Solanke, 2012).

In a study carried out by Rahimi, Mozafari and Parsian (2013) the results indicated that pregnant women prevented pregnancy induced hypertension by attending ante natal care and engaging in less vigorous exercise (77%) and 23% said they avoided stress. In a related survey carried out by Oppong (2010) it was found out that dissatisfaction with previous treatment in hospitals was the reason why most pregnant women who develop complications chose to consult traditional healers as a way of controlling PIH.

In a culturally homogenous society the secondary therapeutic effects of making the patient feel that the unseen world is supporting the therapist and involved with him/her in the treatment make them seek care elsewhere (Ahmad and Samuelsen, 2012; Oppong, 2010).

The traditional healers are believed to obtain knowledge of secret or future and reveal the natural origin of disease and able to see the course of disease and its prognosis, then design the most effective remedies for treating it (Ahmad and Samuelsen, 2012). Problems associated with headache, stomach ache, mental problems are associated with evil spirits.

The treatment of ailments was cheaper and in cash and kind and sometimes a chicken (Ahmed, et al. 2011). Results from the study also revealed that women in gainful employment were most likely to use qualified personnel for their pregnancy

complications and were empowered to make decisions concerning their use of health care facilities as compared to their counterparts.

About 35% of women who worked for cash went to qualified personnel for their pregnancy complications compared with only 25.3% of those who did not work (Bangal, Giri and Mahajan, 2011). Perception of severity of diseases was found to determine whether the woman would seek care or not. It was observed that mother's education ($P < 0.05$), age ($P< 0.10$) appeared to be positively associated with treatment and used of professional staff on illness related to PIH (Oppong, 2010; Good, 2013).

In a study conducted by Kawuwa, Maringa and Usman (2010), it was revealed that a statistical relationship exist between pregnant women demographic characteristics and knowledge on how to control PIH. The use of traditional and other health services related to a number of previous pregnancies also show the same pattern (Oppong, 2010). There was a positive association between education and use of medical facilities for treatment of pregnancy complications.

The percentage of women who sought care from qualified medical personnel for treating complications increased from 26.8% among illiterate women to 34.6% among women with secondary or higher education. In a study conducted by Chhabra and Kakan (2013) it was showed that most pregnant women recommended the use of the health centre as a way of controlling PIH.

In related development, pregnant women considered the health centre as the best way to control PIH because doctors and nurses would monitor them well (Dekker, 2013; Khumanthem, Chanam, Samjetshabam, 2012). A research by Fatema, Babak, and Hamid (2013) revealed that there is a significant linear association between age and level of

knowledge concerning hypertension (x^2 = 9.14) older patients (> 60 years) tended to be less knowledgeable than younger ones.

Another significant linear association was observed between age and knowledge on how to avoid hypertension. Younger patients knew the correct management care than older ones (x^2 = 11.20). No significant linear association was observed between age and level of knowledge as regards to how to control PIH (x^2 = 0.26). Knowledge of causes and prevention of Chronic Hypertensive Diseases were stratified by age (< 20 years, 20-30 years, 35-49 years > 50 years. The study revealed that there is a significant linear association between age and level of knowledge concerning hypertension (x^2 = 9.14)

Similarly a study by Pearce, Waugh and Robson (2013) revealed that with increasing age, knowledge of hypertension complications was poor and those with poor knowledge, their risk factors were poorly controlled (Fatema, et al., 2013).

Patients had little knowledge about their chronic condition. Three percent knew that the condition causes stroke but knowledge on the consequences of untreated hypertension was poor, less than 1% knew that renal failure could reveal poor adherence to treatment. About 80% of diabetic patients in the same study had little knowledge on how to manage hyper and hypoglycaemia and inadequate knowledge on the impact of poor diabetic control.

As a result unhealthy lifestyles were common over 20% of the respondents. Their sample variance analysis showed that patients attending dedicated hypertensive clinics at the country's Health Clinics had significant lower systolic blood pressure level (6.7-mmHg, p < 0.05) than those who did not attend such clinics. The overall knowledge increased with level of education. Teenage boys knew a little more than teenage girls but the difference

was not statistically significant. While these studies were not identifying knowledge levels of complications of PIH (Rockers, et al. 2013)

The patient's knowledge about the disease and its management is important as it influences health seeking behaviour of clients. A study in rural Ghana by (Atinga and Baku, 2013) showed that lack of information about seriousness of heredity component of hypertension delayed the women from seeking care early. Many did not identify certain symptoms with pregnancy but instead with normality. Even serious complications like imminent eclampsia, blurred vision reduced urine output and confusion were not identified (Atinga and Baku, 2013).

However, a study conducted by Brazy, Grimm and Little (2013), revealed that pregnant women considered native doctors as the best place to treat and control PIH. In Tanzania, pregnant women seek early protection from native doctors before pregnancy to control PIH. In Zimbabwe, most pregnant women use the medicine from herbs to control PIH (Liu, Chang and Cheng, 2012).

Similarly, Mannisto, Mendola and Vaarasmaki (2013) found that black Americans waited for a certain period (days or weeks) before they took action, consulted for prayers or went through traditional rituals to allow, the body to heal itself. They seek advice from a family member or a friend. If the problem does not resolve, they would finally attend a health clinic or consult a family doctor. This was also observed among pregnant women with PIH complications at Chitungwiza Central Hospital.

The patient’s knowledge about the disease and its management is important as it influences the health seeking behaviour of the clients (Poonet al., 2010). A study in Tanzania by Masoura, Kalogiannidis and Margioula-Siarkou (2012) showed that lack of

information about seriousness of PIH and heredity components of hypertension delayed the pregnant women from seeking help on how to control PIH.

Many pregnant women did not identify certain symptoms with complications of pregnancy but with normality, making the symptoms less serious in their eyes and thus, did not necessitate controlling it. Even serious complications like imminent eclampsia, blurred vision, reduced urine output and confusion were not considered serious among the study participants (Miettola, Hartikainen and Vaarasmaki, 2013).

In a descriptive cross sectional survey conducted by Bangal, Giri and Mahajan (2011), most pregnant women stated that PIH could be controlled by visiting ANC regularly. There are significant variations in the incidence of PIH across districts in Ghana. More attention needs to be given to mapping and understanding local area variations in PIH within countries as well as between countries in sub-Saharan Africa (Ahmad and Samuelsen, 2012; Mekbed and Ketsela, 2011).

Possible relationships with urbanization and lifestyle changes that promote obesity should be investigated in detail to provide information to inform maternal and newborn health policy and programme decisions. This can be done with Health management information system data, but interventions need to be put in place to improve the data completeness. Attention also needs to be paid to quality of antenatal and delivery care inputs such as preventing stock out of reagents to test for urine protein (Mitka, 2013).

A research in the Latin America and Carribean by Conde and Belizan (2000) revealed that some pregnant women missed the early symptoms of reproductive health complications and only took action when they were severely ill, which may be a reflection of lack of knowledge on the early signs and symptoms of disease. Hence very

important to equip the pregnant women with PIH complications with adequate knowledge for them to be able to identify the symptoms early and take prompt action.

In a large survey of 989 female resident physicians who were pregnant during residency and 1,238 wives of male residents, Camazine (2010) found that the female residents, who worked long hours in a stressful environment, had a higher incidence of preeclampsia than the wives of male residents (8.8 percent vs. 3.5 percent; $p<0.001$). The authors attributed this excess in incidence to more vigilant diagnosis of preeclampsia among the female residents.

However, four case-control studies also showed that demanding physical work and/or job stress was associated with increased risk of PIH (Roberts and Lain, 2012). Two other studies found no relations (Rehana, Tanveer, and Nasreen, 2010). Leisure time physical activity during pregnancy was associated with reduced risks of preeclampsia (adjusted relative risk =0.67, 95 percent CI 0.46-0.96) and gestational hypertension (relative risk = 0.75, 95 percent CI 0.54-1.05) in a case-control study (Miettola, Hartikainen and Vaarasmaki, 2013).

In cross sectional survey conducted among midwives concerning how to control PIH, majority of the study participants recommended that pregnant women should be given calcium supplementation to prevent PIH (Obed and Patience, 2010). They also stated that pregnant women should be made to rest as a way of preventing PIH.

Similarly, Dekker (2013) stated that pregnant women should be given Vitamin E supplementation to prevent PIH. In the same vein, Duley, Meher and Abalos, (2014) and Easterling, et al. (2010) revealed that Low dose aspirin should be given to pregnant women to prevent PIH.

Most health workers according to a study done by Feig, Shah and Lipscombe (2013) revealed that Lycopene supplementation should be given to pregnant women to prevent PIH. Miettola, Hartikainen and Vaarasmaki (2013) revealed that out of 75 respondents, 25% did not report any knowledge of how to control PIH whilst 32% delayed to seek care for failing to identify pregnancy related risk factors. The study also revealed that women relied more on advice from their husbands, mothers, relatives and friends as a way of controlling PIH.

Most of these women coped with pregnant related complications like abdominal pain, headache, vomiting and generalised body aches by lying down or resting (Miettola, Hartikainen and Vaarasmaki, 2013). Results showed that husband's occupation is positively associated with the type of healthcare sought by their wives (Miettola, Hartikainen and Vaarasmaki, 2013). Women whose husband's had skilled jobs or working in business where there was cash, used medical services for care of their pregnancy complications than less educated women.

This was shown by 34% of wives whose husbands were in gainful employment using medical personnel for treatment during their pregnancy complications compared with 24% whose husbands were farm laborers. Some of the factors were related to social structures such as kinship, social networks, gender and economic status. Others were related to belief systems which define how people conceptualize the aetiology of diseases (Mitka, 2013). Several factors influence which treatment sources one seeks when symptoms of a disease arise. The person alone or in consultation with others decides that the illness needs attention.

Pregnant women destined to develop pregnancy induced hypertension/preeclampsia lose their refractoriness to an infusion of angiotensin between 28 and 32 weeks of gestation. Women who exhibit a pressor response with less than 8ng/kg/min, of them 90% were seen to develop the disease (Singh and Srivastava, 2015).

Another type of test is the Roll over test (Gant's roll over test): At first blood pressure is measured in left lateral position and patient is turned to supine position and blood pressure is measured again. If the rise of diastolic blood pressure is 20 mm of Hg or more, test is considered positive (Singh and Srivastava, 2015). Elevated mean arterial pressure at least 85-90 mm of Hg in second trimester has been reported to have widely varying predictive ability (Rahimi, Mozafari and Parsian, 2013; Riaz, Habib and Jabeen, 2011).

Government hospitals are usually patronized when all alternatives have been exhausted. Against the backdrop of endemic poverty, women are constrained from seeking care at the health centre or government hospital. As observed in studies study Kisuule et al (2013), the cost of transport is an additional cost to care seeking. Distance to health facility is unequal, greatest in rural areas and tends to escalate the cost of care.

Women delayed care seeking due to financial constraints; women depended mainly on their husbands to supply funds for health services. In cases where the husband was unable to pay, family members or friends may have covered the costs (Kisuule et al, 2013).

Finances were a consistent barrier to health care services for many, and this barrier was greatest for higher-level care. Teenage mothers were felt to be at particularly high risk as they were less likely to be financially prepared. Reportedly, pregnant women tended to save in the event that it is required during pregnancy. They tended to raise funds near

delivery when costs were likely to be incurred. It was perceived to be essential to have funds protected in advance as it was uncertain what might happen during pregnancy.

In addition, respondents described a belief that "hospital medications only reduce the severity of illnesses like malaria" whereas, "[a] local concoction cleanses their body of all toxins." The perception was generally held that some complications are better treated by traditional doctors. Explaining this point further, a male decision-maker described how women patronized both traditional health care providers and skilled professionals: "*once they detect that the baby is lying* across in the belly, they go to traditional doctors for care and they usually change the position of the baby to normal position".

While health care seeking behaviour is influenced by the factors mentioned above, delays are influenced by additional factors. The general view among the community and health care providers was that women accessed the formal health care system when they perceived they were at risk. Usually, this was for delivery-related care, particularly deliveries complicated by obstructed labour or retained placenta.

2.11 Summary of the literature

PIH is a common health problem with adverse effects for both mother and fetus/neonate. It is believed to be a multifactorial health condition. The pathogenetic mechanism of which is not as yet fully understood. More studies clarifying the latter would also contribute to more effective medical treatment and optimization of pregnancy outcome. The literature revealed that pattern of health seeking is similar in different parts of developing countries. A significant number showed that pregnant women use self-treatment, traditional healers, faith healers and professional care when the previous fail.

Health seeking behaviour of clients with PIH complications are a major concern to midwives as it puts the pregnant women at a higher risk of dying before getting the right care or have permanent ill health. Literature revealed that those with knowledge of disease complications have good health seeking behaviour compared to those without knowledge.

Health-seeking behavior according to Tipping and Segall (1995) is "any action undertaken by individuals who perceive themselves to have a health problem for the purpose of finding an appropriate remedy". Community ideas and attitudes toward health and illness affect the way people utilize health services. In Northern region and in many developing countries, the factors that commonly affect the way pregnant women sort for health are multi-varied and hence, produce different results.

CHAPTER THREE

STUDY AREA AND METHODOLOGY

3.1 Introduction

This chapter presents the study area and the research methodology employed to conduct the study. The sub-sections include the profile of the study area, study design, study population, sample size determination, sampling procedure, research instruments, data collection procedure, data analysis and ethical considerations.

3.2 Study settings

The study was conducted in the Tamale Metropolis. The Tamale Metropolitan Assembly was established by legislative instrument (LI, 2068) which elevated the then Municipal Assembly into a Metropolis in 2004. At present, it is one of the six Metropolitan Assemblies in the country and the only Metropolis in the three Northern regions namely: Upper East, Upper West and Northern regions. It has Tamale as the Metropolitan capital city and at the same time the regional capital of the Northern Region (GSS, 2010). The Tamale Metropolis is made up Tamale Central and Tamale South constituencies. The latter being relatively rural.

3.2.1 Location, Size and Physical Features

The Tamale Metropolis is located in the central part of the Region and shares boundaries with the Sagnarigu District to the west and north, Mion District to the east, East Gonja to the south and Central Gonja to the south-west. The Metropolis has a total estimated land size of 646.90180sqkm (GSS-2010). Geographically, the Metropolis lies between latitude 9º16 and 9º 34 North and longitudes 0º 36 and 0º 57 West.

Tamale is strategically located in the Northern Region and by this strategic location, the Metropolis has a market potential for local goods from the agricultural and commerce sectors from the other districts in the region. Besides the comparative location of the Metropolis within the region, the area stands to gain from markets within the West African region from countries such as Burkina Faso, Niger, Mali and the northern part of Togo and also en-route through the area to the southern part of Ghana(GSS, 2010).

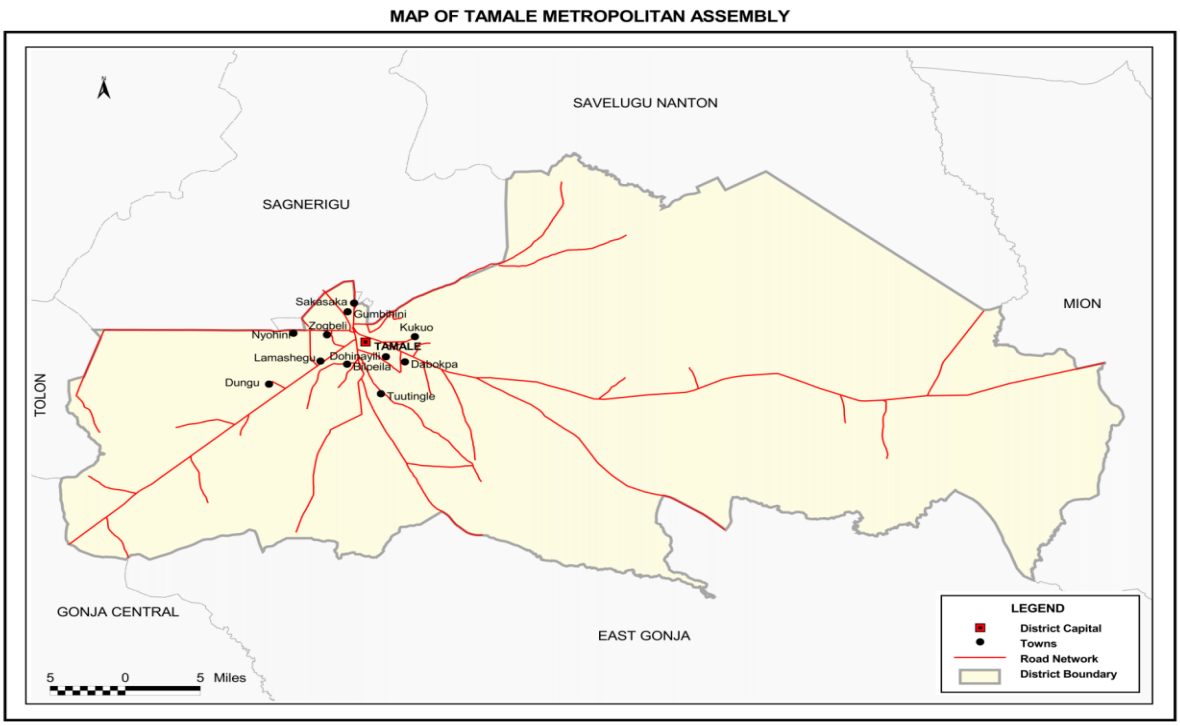


Figure 3.1: Map of Tamale Metropolis

3.2.2 Population size, structure and composition

The population of Tamale Metropolis, according to the 2010 Population and Housing Census, is 233,252 representing 9.4 percent of the region's population. Males constitute 49.7 percent and females represent 50.3 percent. The proportion of the population living

in urban localities (80.8%) is higher than that living in rural localities (19.1%) of the metropolis. The metropolis has a sex ratio of 99.1.

The population of the metropolis is youthful (almost 36.4% of the population is below 15 years) depicting a broad base population pyramid which tapers off with a small number of elderly persons (60 years and older) representing 5.1 percent. The total age dependency ratio for the district is 69.4, the age dependency ratio for rural localities is higher (86.5) than that of urban localities (65.7) (GSS, 2010).

3.2.3 Household Size, composition and structure

The metropolis has a total of 219,971 households. The average household size in the metropolis is 6.3 persons per household. Children constitute the largest proportion of the household structure accounting for 40.4 percent and heads of household make-up 16.1 percent of the household population.

Spouses form about 9.4 percent and other relatives constitute 12.9 percent of the population. The proportion of households who live in extended household structure (head, spouse(s), children and head's relatives) constitute the largest proportion (46.1%) than that of any other type of household structure. Nuclear households (head, spouse(s) and children) constitute only 19.5 percent of households in the metropolis (GSS, 2010).

3.2.4 Economic Activity Status

About 63.3 percent of the population aged 15 years and older in the metropolis is economically active and 36.7 percent are economically not active. Of the economically active population, 92.6 percent are employed while 7.4 percent are unemployed. For those who are economically not active, a larger percentage of them are students (56.0%), 20.9 percent perform household duties and 12.4 percent are either too young or old to

work. About five out of ten (52.9) of unemployed persons in the metropolis are seeking work for the first time (GSS, 2010).

3.2.5Social and Cultural Structure

Historically, the Northern Regions of the country had vast land cover with smaller population sizes and the Metropolis is of no exception. This area begun experiencing high population growth after many people with different ethnic backgrounds started migrating from other areas to settle there thus making it a cosmopolitan area.

The Dagombas are the majority and other ethnic groups such as Gonjas, Mamprusis, Akan, Dagaabas and groups from the Upper East Region are also residing in the Metropolis. Also found in the Metropolis are other nationals from Africa and other countries across the globe. The area has deep rooted cultural practices reflected in activities such as annual festivals, naming and marriage ceremonies.

Some of the festivals that are celebrated annually in the Metropolis are Damba, Bugum (fire festival) and the two Muslim Eid festivals (Eid Fitr and Eid Adha) and the Christians festivals such as (Christmas and Easter). The Metropolis is dominated by Muslims and followed by Christians, spiritualists and traditionalists (GSS, 2010).

3.2.6 Health facilities and Educational institutions

The Tamale Metropolis has a number of health facilities including private Medical Diagnostic and Laboratory centres. The prominent health facilities in the metropolis include; the Tamale Teaching Hospital, the Tamale Central Hospital, The Builpela Health centre, The Tamale West Hospital, Seventh Day Adventist Hospital (SDA), Vittin Health centre and Kabsad Scientific Hospital, among others.

There are a good number of both private and government schools comprising Secondary, Junior, Primary and Kindergarten Schools in the metropolis. Of the population, 60.1 percent are literates and 39.9 percent are non-literates. The proportion of literate males (69.2%) is higher than that of females (51.1%) (GSS, 2010).There are also reported cases of liver related diseases such as liver cirrhosis, elevated cholesterol, diabetes, sexual weakness, hypertension, PIH, and hepatitis among others in the Tamale Metropolis and Ghana as a whole (GSS, 2010).

3.2.7 Fertility, mortality and migration

The Total Fertility Rate for the metropolis (2.8) is slightly lower, compared to the regional fertility rate of 3.5. The General Fertility Rate is 79.9 births per 1000 women aged 15-49 years. The Crude Birth Rate (CBR) is 21.2 per 1000 population. The crude death rate for the metropolis is 5.6 deaths per 1000. Accident/violence/homicide/suicide account for 9.6 percent of all deaths while other causes contributes to 90.5 percent of deaths.

Majority of migrants (54.9 percent) living in the metropolis were born elsewhere in the region while 45.1 percent were born elsewhere in another region. For migrants born elsewhere in another region, those born in Northern region have the highest proportion (19.6%) followed by those who were born in the Upper East (18.7).

3.2.8 Occupation

Occupation is defined as the type of work a person is engaged in at the establishment where he/she works. This was asked of persons 5 years or older who worked in the last 7 days before the census night, and those who did not work but had a job to return to as well as those unemployed who had worked before. All persons who worked during the 7

days before the census night are classified by the kind of work they are engaged in. The emphasis was on the work the person did during the reference period and not what he/she is trained to do.

The occupation with the highest population in the Metropolis is service and sales workers (33.0%). This is followed by those in the craft and related trades works (21.5%). The proportion of the employed persons engaged in skilled agricultural forestry and fishery is 17.6 percent, which is the third largest occupation in the metropolis.

There are more males compared to females in almost all the occupations with the exception of service and sales where only 16.5 percent of males are engaged, compared to a large proportion of 50.3 percent for females. Also there are more females (11.3%) than males (6.1%) in the elementary occupation category.

3.2.9 Transport

The major transport services in the area are taxi cabs with a main taxi station at the Central Business District (CBD). State Transport Company, Metro Mass Transit, O. A. Travel and Tours and other private bus services link the Metropolis with other cities and towns in the country. Most of the people also use motorbikes as their means of transport within the Metropolis. For easy transport of goods and services, EMS, FEDEX, DHL and others offer fast and reliable express services from the Metropolis to other places (GSS, 2010).

3.3 Research design

A research design guides the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal. This study employed a descriptive cross

sectional study design using a survey to generate data to gain insight into study participants' awareness and health seeking behaviour related to PIH in the study area.

A descriptive cross sectional study designs aims to quantify the problem, giving detailed information and also taps into perceptions of communities and groups (Creswell, 2005). The study employed mixed approach for the data collection.

3.4 Research population

The study population comprised200 pregnant women who were residing at the Tamale Metropolis and attended antenatal care at selected health facility within the Tamale Metropolis. These pregnant women were sampled from the Tamale Central Hospital, Vittin Health centre, Seventh Day Adventist (SDA) Hospital and Builpela Health Centre.

3.5 Sampling criteria

Sampling criteria is the essential characteristics of the target population (Creswell, 2005). Sampling criteria refers to inclusion and exclusion criteria which help to control extraneous variables. It ensures homogeneity and provides a guideline for sample recruitment. For production of credible results, extraneous variables which could interfere with measurement were controlled.

Inclusion criteria refers to the specific characteristics the investigator wishes to include in a study (Creswell, 2005). Whereas exclusion criteria refers to characteristics not wanted in the study (Creswell, 2005).

3.5.1Inclusion criteria

- Pregnancy in whom a viable outcome was expected.
- Pregnant women who were living within the Tamale Metropolis.
- Pregnant women who were willing to participate in the study.

3.5.2 Exclusion criteria

- Pregnant women who were referred from any part of the country to seek health care within the selected health facilities.
- Pregnant women who were on admission at the selected health facility within the Tamale Metropolis.
- Pregnant women who were not willing to participate in the study.

3.6 Study variables

3.6.1 Dependent variables

The dependent variables of this study were knowledge of signs/symptoms and complications of PIH and self-care management of PIH.

3.6.2 Independent variables

The independent variables in this study were bio-data of respondents like age, educational level and occupation.

Table 3.1: Number of respondents sampled for the study

Category of respondent	Where they were sampled	Number sampled
Pregnant women	SDA Hospital	65
Pregnant women	Tamale Central Hospital	55
Pregnant women	Bilpeila Clinic	54
Pregnant women	Vittin Health centre	26
Total	**4 Health centres**	**200**

Source: Field data, 2017

3.7 Sources of data collection

Data was gathered from both primary and secondary sources.

3.7.1 Primary data

A self-designed structured questionnaire with both closed and open-ended questions were used in this study to collect the primary data. The questionnaire solicited information mainly on the quantitative aspect of the data. The idea of using questionnaire was considered because it can be administered to a large number of study participants concurrently with uniform instructions and explanations.

The questionnaire was designed in line with the study objectives as impetus for enhancing the study validity, and this was strengthened by the systematic flow of the study as a mark of reliability. Data was collected from study participants for not more than 45 minutes. Study participants were interviewed using the local language, Dagbanli or the English language where appropriate.

Respondents were allowed to attend to crucial issues first; those with personal transient factors such as wanting to solve pressing issues were not inconvenienced. Threats on internal validity were reduced by interviewing the respondents at one point in time and in the mornings only.

3.7.2 Focus Group Discussions

Focus group discussion (FGD) was used as a tool for data collection among some selected pregnant women in the study area. It was used as a qualitative tool to explore how pregnant women feel about PIH and health seeking behaviours. Probing as a communication strategy was used as a clarity seeking methods to interact with the study participants. The narrative data from the interviews were analysed qualitatively using the open coding method.

The group members did not know each other and was homogenous in terms of gender and fulfilled the inclusion criteria. Before the FGDs, the moderator introduced all participants, explained the general purpose of the study and topic of the discussions. The participants were informed about the language to use and permission to use any language or clear any information before answering a question.

The first and the fourth FGDs were held at the Kukuo Market under a shed on the 14th of April, 2017. The first one involved 18 pregnant women who opted to participate in the study while they were being told by the administrator of Vittin Health centre to wait for the Sonographer to come from the Tamale Teaching Hospital to do the obstetric scan for them. This FGD involved both educated and the uneducated at the time of the discussion. There was no difficulty in the discussion since almost all the participants said they understood the English language but only contributed in Dagbanli. The fourth one involved only 7 pregnant women, who were educated and aged between 21-35 years at the same venue on the 15th of April, 2017.

The second, third and fifth were held at Bilpeila Clinic on the 16th, 17th and 18thof April, 2017. The second FGDs involved only 20 pregnant women who met the inclusion criteria, the third one involved only 19 single pregnant women aged between 20- 31 years who also met the inclusion criteria and the fifth involved 16 educated pregnant women.

Informed verbal consent was obtained from all the individuals who participated in the discussion. Participants' conversations were not transcribed verbatim and translated because all the needed information was written during the discussions. The actual data collection stated in April and ended in April, 2017. The researcher assistants and the researcher were directly involved in the focus group discussions in order to ensure

uniformity and consistency in the questioning and interpretation of the survey data. The purpose of the FGDs was to assist in finding answers to mostly objective two and three

3.7.3 Training of research assistants

Data collection began in April after an approval by my supervisor and lasted for two weeks and three days period. Four researcher assistants who had in-depth knowledge in the research topic under investigation and have been in similar data collection activities before were contacted to assist in the data collection for the period of the two weeks and the three days. The criteria used for the selection of the research assistants were based on their ability to speak and understand the local language (Dagbani) fluently and they also had a fair knowledge of the geographical setting of the study area and the culture and religion and practices of the people in the study area. Training was provided to the research assistants to enhance their data collection skills.

The questionnaire and the focus group guide were well explained to the research assistants before data collection to avoid large missing data gaps in the questionnaires. Midwives, nurses and health volunteers were supportive by assisting the researchers' team to facilitate contact and rapport between the pregnant women and the research team.

3.7.4 Secondary data

Secondary data was obtained from reliable records and related literature, such as books, journals and internet articles.

3.7.5 Quality control

All questionnaires were cross checked to ensure that all questions applicable to the study participants were answered by the study participants and appropriately recorded or ticked. The questionnaires were put in secured places after entry into computer software for

analysis for the sake of cross-check and confidentiality. Data privacy was ensured as names of respondents were not written on the questionnaire. All transcripts were read carefully to get a sense of the whole study. Data was then grouped according to main themes.

3.8 Sampling techniques

Purposive sampling technique was used to select 2 health facilities each from the Tamale South and Tamale Central sections based on their average weekly ANC attendance in the Tamale Metropolis. The researcher did not want to select a health facility which has a very low ANC attendance in the week for fear of not meeting the required target size in that health centre because of the limited time for data collection. Simple random sampling technique was however, employed to sample the respondents who met the inclusion criteria at the various health centres.

3.9 Sample size determination

The accessible population was pregnant women who were only available in the Tamale Metropolis at the time of conducting the study. A total of 200 pregnant women were used for the study. The average antenatal attendance at Vittin Health centre in a week is 40 pregnant women (Laboratory records, 2017), at the Tamale Central Hospital, the average ANC attendance in a week is 135 (Key Informant, 2017).

The average ANC attendance in a week at Bilpeila clinic is 75 (Key Informant, 2017) and the average attendance of ANC at the SDA Hospital is 150 in a week (Hospital records, 2017). Using the weekly averages of the selected health facilities, a total of 400 target population was used for the sample size calculation.

This sample size was calculated using Sloven's formula (Yamane, 1967).

The calculation of the sample size is shown below

$$= \frac{N}{1 + N(e)^2}$$

Where;

n= Sample size

N= Weekly mean of ANC attended

e=Precision desired

Therefore;

N= 400

e= 0.05

$$n = \frac{400}{1+400\ (0.05)^2}$$

n= 200

3.10Validity and reliability of the study

Establishing validity and reliability of a study enhances its authenticity thereby making it a useful document for policy formulations, programme designing and other intervention. Reliability focuses on accuracy, precision and consistency of the measurement procedure. To establish reliability and validity of the research, the researcher adopted steps such as:

- Establishing objectives that truly reflected the focus and purpose of the study.
- Reviewed relevant literatures to make for realistic discussion.
- The initial draft of the self-designed questionnaire was subjected to face validating. They essence of validating the instrument was to ensure that it would elicit the information it was designed for.

- The self-designed questionnaires were tried and tested using 10 randomly picked pregnant women from the Tamale Teaching Hospital and the Tamale West Hospital. The pre-test assisted the researcher to reframe certain questions well before the final data collection.

3.11Limitations of the study

The following limitations were encountered in this research work. The process of selecting respondents randomly from a sample was challenging since respondents were not uniform in their attendance. It was also observed that some selected study participants were very reluctant to respond to the questionnaire. The survey relied upon respondents' self-assessment of PIH information. The reliance on self-recall of how study participants responded to certain questions could be problematic.

There was also inadequate data on the study topic especially at the study area. There were also limited time and resources constraints which could otherwise have extended the coverage of the study. Nonetheless, these limitations encountered in the study did not influence the interpretations of the findings nor inference to the entire population.

3.12 Data analysis and presentation

The completed questionnaires were crossed checked for completeness and accuracy. The data was summarized in Microsoft Excel 2013 and then coded with numbers for descriptive and inferential analysis using Statistical Package for Social Science (SPSS) software package (version 21.0). Descriptive and inferential statistics were used to describe and make inferences from the data where applicable.

All statistical tests were performed using two-sided tests at the 0.05 level of significance. P values less than 0.05 was considered significant. All the descriptive data are presented

mainly in tables and charts. All qualitative data was analyzed manually and put into common themes. Content analysis was used for the analysis. Under descriptive, pie charts, and tables are used to describe the data for easy reference and pictorial view.

Inferential statistics on the other hand uses mean, ANOVA, cross tabulations and the Pearson Product Moment Correlation Test to run a series of analysis for the variables under study. The qualitative data was analyzed manually and responses grouped into themes in line with the study objectives

3.13Ethical considerations

Permission was obtained from the health facility management especially at the ANC departments. Research involving human subjects should always be guided by good clinical practice and human right principles to ensure protection of study participants. Some of the ethical responsibilities of the researcher were to maintain privacy, informed consent-ensuring that there is voluntary participation, protection of study participants, informing study participants what the study is for, how information would be used and whether there was any potential risk expected. Participants were provided with sufficient and understandable information about participation in the study.

Confidentiality and anonymity was ensure by protecting participants' identity, privacy, worth and dignity. There was no victimization of participants who refuse to participate in the research.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the analysis and presentations of the data that was collected from the respondents.

4.2 Demographic characteristics of respondents

The demographic data of the respondents are shown in Table 4.1 in terms of the following headings; age, marital status, religious affiliations, occupation and educational level. The importance of assessing respondents' demographic data is to enable the researcher to have a fair idea about the category of people being considered as respondents in the research work.

Table 4.1: Demographic characteristics of respondents

Variable		Frequency (200)	Percent (%)
Age (years)	20-30	64	32.0
	31-40	96	48.0
	41+	40	20.0
Marital status	Single	31	15.5
	Married	169	84.5
Religion affiliation	Christian	85	42.5
	Muslims	115	57.5
Occupational status	Petty trading	88	44.0
	Salaried worker	59	29.5
	Unemployed	38	19.0
	Student	15	7.5
Educational status	No formal educ.	77	38.5
	SHS	21	10.5
	JHS	44	22.0
	Tertiary	58	29.0

Source: Field data, 2017

Age is very important factor in maternal health. From Table 4.1, the mean age of the respondents was 21.40 ± 0.71 (mean ± SD). The modal age group for the study was 31-40 years constituting 48% of all the respondents. Sixty-four (32%) respondents were between the ages of 20-30 years whilst 20% respondents were 41 years and above. Assessing the age factor in the demographic data was to assist the researcher to know the level of maturity in the provision of their responses therefore making the research findings reliable. There was a married preponderance of 84.5% whilst 15.5% respondents were single or in a consensual relationship. From the analyses, majority of the

respondents were from the Islamic faith (57.5%) whilst 42.5% respondents were from the Christianity faith.

The occupational status of the respondents was assessed. Eighty-eight (44%) of the respondents were engaged in petty trading, 29.5% respondents were salaried workers, 19% respondents were housewives (unemployed) whilst 7.5% respondents indicated they were students at various levels of educational training. The educational background of the respondents is also important since it could contribute to the reliability of the results as respondents could have a fair understanding of the variables that were investigated.

Analyses showed that 10.5% respondents had at least some form of Senior Secondary School education (SHS), 29% respondents had at least some form of tertiary education, 22% respondents had at least some form of Junior Secondary School (JHS) education and 38.5% respondents had no formal educational training.

With this analysis, it is clear that many of the respondents had a good educational background which input has been important in the research. From the analyses, 15% respondents had 1-2 children, 55% respondents said they had 1-3 children, whilst 30% said they had 4 or more children at the time of the research.

4.3 Knowledge level regarding PIH

Knowledge of PIH was operationalised using the variables on knowledge of PIH on the questionnaire, which addressed knowledge of PIH, PIH signs/symptoms and PIH complications. About five most important variables concerning PIH were investigated under knowledge. These variables were listed and respondents were supposed to indicate ‘yes’ or ‘no’ or a ‘tick’ or to provide an ‘option’ against each variable. ‘Yes’ or provision of an ‘option’ or a ‘tick’ indicated they knew it and a score of twenty was given. A ‘no’

or no 'response' indicated they did not know that it was a sign/symptom or a complication and a score of zero was given.

The scores were added to detect the average knowledge level of the respondents' on PIH sign/symptoms or complications. A composite score was generated by summation of all the scores. The maximum attainable score was 100. Respondent who scored less than 25% was graded to have scored poorly, 26 –50% as moderately good, 51–75% good while those who scored more than 75% was considered to have very good knowledge of PIH.

Table 4.2: Knowledge of PIH

Variable	Frequency (200)	Percent (%)
Meaning of PIH		
High blood pressure that occurs in pregnancy after 20 weeks	171	85.5
Blood pressure which starts when one is not pregnant	18	9.0
Both	11	5.5
Causes of PIH		
Not known	141	70.5
Stress	23	11.5
Lack of exercise	36	18.0

Source: Field data, 2017

From the analyses, all the respondents representing 100% stated that they had ever heard of PIH before. Respondents' sources of information on PIH were identified to include;

the media, health centres, previous school attended, market, friends and workshops they had ever attended. This result shows that all the respondents had at least one source of information centre that they could get health information from.

From Table 4.2, 85.5% of the respondents considered PIH to be high blood pressure that occurs in pregnancy after 20 weeks gestation to 42 days post-delivery. This is worth stating that with this huge number of respondents stating when PIH could occur is good since the first step in seeking health care is the knowledge of the condition. If these pregnant women are aware of when PIH could set in, it means they could be the possibility of most of them taking measures to prevent such occurrence or taking steps to reduce the occurrence during pregnancy.

From the analyses, 9% respondents considered PIH to be blood pressure which starts when one is not pregnant. This group of respondents, who considered PIH to be when even without pregnancy one could develop PIH, could also be in the position to check their blood pressure even if they are not pregnant.

Apart from those who might think PIH is in their family, pregnant women would be in the position to take action to minimize it especially if they are told that they have PIH when they expected that they should have not got it. Eleven (5.5%) respondents considered PIH to be high blood pressure that occurs with or without pregnancy. This group of respondent was also in the position to take action to minimize their blood pressure since they knew they could get high blood pressure even if they are not pregnant.

From the analyses also, majority of the respondents (70.5%) indicated that the cause of PIH is not known, there is the possibility that this group of respondents may not take any

action to minimize the signs/ symptoms of PIH since they could be in the position to state that you 'cannot treat what you do not know'. Twenty-three (11.5%) respondents said PIH is caused by stress. This category of respondents were more likely to take measures to reduce stress since they knew it could lead to PIH whilst 18% respondents said PIH is caused by lack of exercise.

Respondents in this category were also more likely to engage in exercise as a way of reducing PIH during pregnancy. Pregnant women very often than not do not engage in exercise and being able to identify this as a cause could place them in a better way to exercise during pregnancy. Overall knowledge score on what is PIH revealed that a relatively high proportion of the respondents (85.5%) scored 'very good' based on the preset index.

Table 4.3: Distribution of respondents on Signs and symptoms of PIH

Variables	Agree	Disagree	Neutral
Rapid weight gain	150 (75.0%)	30 (15.0%)	20 (10.0%)
Swelling of face and fingers	169 (84.5%)	0 (0.0%)	31 (15.5%)
Reduced urine output	144 (72.5%)	47 (23.0%)	9 (4.5%)
Reduced fetal movements	151 (75.5%)	38 (19.0%)	11(5.5%)
Deaths of fetus inside the uterus	200 (100.0)	0 (0.0%)	0 (0.0%)
Death of mother	200 (100.0%)	0 (0.0%)	0 (0.0%)
Abdominal or epigastric pain	176 (88.0%)	0 (0.0%)	24 (12.0%)
Confusion	40 (20.0%)	103 (51.5%)	57 (28.5%)
Drowsiness/feeling sleepy	41 (20.5%)	112 (56.0%)	47 (23.5%)
Continuous frontal headache	85 (42.5)	115 (57.5)	0 (0.0%)
Very high blood pressure	200 (100.0%)	0 (0.0%)	0 (0.0%)
Nausea and vomiting	56 (28.0%)	98 (49.0%)	46 (23.0%)
Generalized body weakness	93 (46.5%)	74 (37.0%)	33 (16.5%)

Source: Field, 2017

All the respondents representing 100% said they knew at least one sign and symptom of PIH. It is worth stating that respondents having the knowledge to identify sign/symptoms of PIH could be the first step in taking action to avert the complications of PIH. From 4.3, respondents were asked to indicate the extent to which they agree, disagree or neutral with certain variables as signs/symptoms of PIH.

All the respondents 200 (100%) agree with the statement that the deaths of fetus inside the uterus, death of the mother and very high blood pressure were signs/symptoms of PIH. Very often people associate these things with witches, rivalries and bad spirits. These respondents being able to identify these things could enhance their health seeking behavior especially if they notice these things within a family or community.

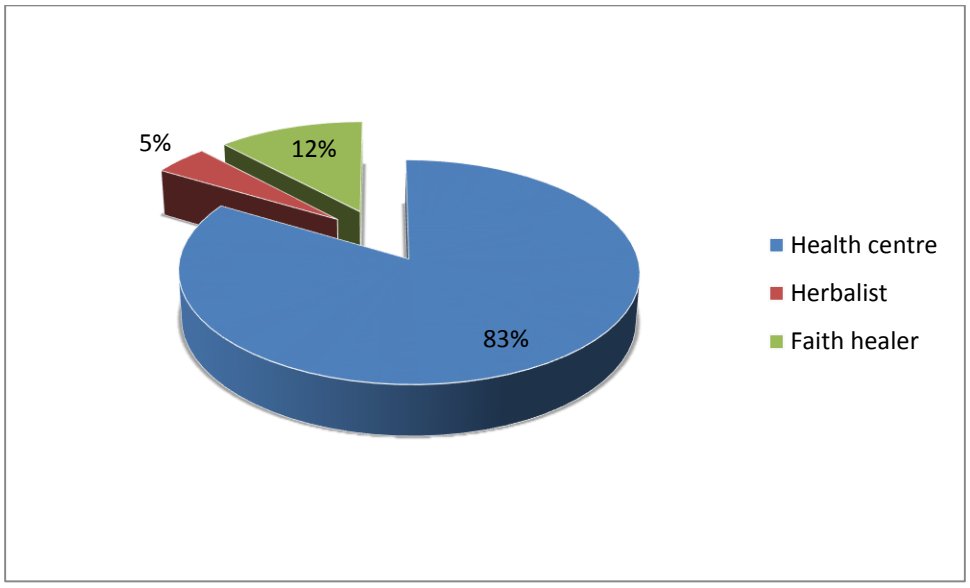
From the analyses, 46 respondent representing 23% did not know whether nausea and vomiting are signs/symptoms of PIH. Nausea and vomiting have been associated with pregnancy and this finding was not surprising since this category of respondents did not see why pregnant women who should have nausea and vomiting should be seen as a sign/symptom of PIH.

Individual health seeking behavior occurs against a background of their past experiences, perceived severity of the condition, social relations, economic and environmental characteristics of the society concerned and cultural issues. Hence assessing what pregnant women consider as "normal" may not be normal in health care and this may affect their health care seeking behaviours positively or negatively.

However, 98% respondents disagree with the statement that nausea and vomiting are sign/symptom of PIH. This category of respondents might look at the severity of the nausea and vomiting and with previous experiences state that it is not a signs/symptom of

PIH whilst 28% respondents agree with the statement that nausea and vomiting is a sign/symptom of PIH. Additionally, 28.5% were neutral to the statement that confusion during pregnancy is a sign/symptom of PIH, 51.5% respondents disagree with the statement that confusion is a sign/symptom of PIH whilst 40% respondents agree with the statement that confusion during pregnancy is a sign/symptom of PIH. The rest are shown in Table 4.3.

Figure 4.1: Sources of health care for pregnant women in Tamale metropolis



Source: Field data, 2017

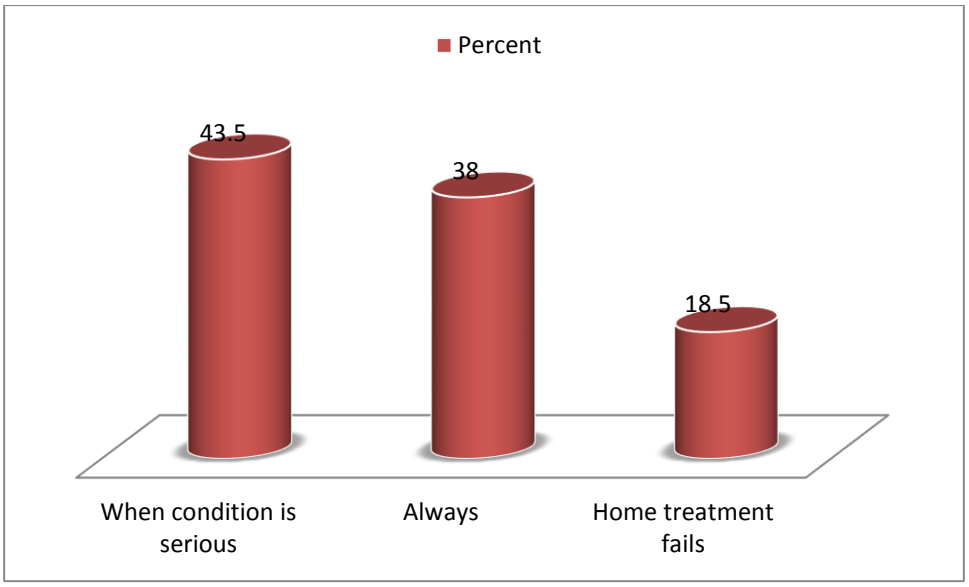
From Figure 4.1, majority of the respondents (83%) said that pregnant women could seek health care from health centres when they notice any sign/symptoms of PIH. Health centres have been considered the ideal place to go when any person notice any sign/symptom of a condition. With this number, it could mean that most of them normally go to the health centre and seek treatment since they are not even restricted to come to only one hospital.

The finding is not also surprised since all the respondents were sampled in the health centres which perhaps might have influenced their responses in this manner. Five percent respondents said pregnant women could seek health care from herbalist whilst 12% respondents said pregnant women could seek health care from Faith based healers such as the Pastors and Mallams in their locality or elsewhere. Health seeking behavior of people is normally influenced by their beliefs and practices and sometimes even norms in the house or community.

The danger of pregnant women seeking health care from such places is the possibility of not getting the right treatment and may later present themselves at health centres when the condition is worst and no better treatment may be offered at that time.

From the analyses, majority of the respondents (57%) said they often visited the health centres whilst 43% respondents said they only visited the health centres when they are ill. From the analyses also, 85% of the respondents said they had ever experienced signs/symptoms similar to those associated with PIH whilst 15% respondents said they had never experienced any signs/symptoms similar to those associated with PIH. Majority of those who said they had sign/symptoms similar to PIH said they sought treatment at health centres (75%) and at Faith healers places (25%).

Figure 4.2: Treatment regimen of PIH



Source: Field data, 2017

Serious PIH complications may affect a considerable proportion of pregnant mothers with pregnancy induced hypertension if the disease is not properly managed. The success in treatment of PIH complications depends largely upon the health seeking behaviour of pregnant women. Since health seeking behaviour is an activity undertaken by individuals who perceive themselves to have a health problem or are ill for the purpose of finding appropriate remedy, respondents were asked to state when treatment is sought upon noticing the signs and symptoms of PIH. From Figure 4.2, 43.5% respondents said that when their condition is serious. Delaying for the condition to be serious before seeking health care at a health centre could be that pregnant women usually have to try home management of those sign/symptoms before attempting to seek better health care elsewhere.

Whilst 18.5% respondents said when home treatment fails. Home treatment may not be the best way to treat complications of PIH. It is important to mention that respondents'

knowledge about the disease and its management could influence their health seeking behaviour. Yet these pregnant women defined their conditions from their socio-cultural or values system perspective (when home management fails).

Such women believed in cultural facts about pregnancy. These were taboos, customs and rituals supposed to be practiced by the expectant women in order to avert any bad omen likely to harm a mother and unborn child before, during birth and after child birth. These beliefs were reflected or manifested in the 'do's' and 'don'ts' reported or observed during pregnancy and child birth.

In Africa culture like most other Ghanaians cultures, there is a widely held belief that the use of herbs averts bad omen likely to cause harm to a mother and the unborn child before, during and after child birth (Aziga et al. 2013). The beliefs about pregnancy become visible through the "dos and don'ts" observed during pregnancy which include the use of (the preservation of herbal medicine by mixing it with substances for the woman to drink or bath) (Liu, Chang and Cheng, 2012)

The beliefs were culturally constructed and passed on from one generation to another through customs and traditions. Through the different ethnic groups although not assessed, it was possible to observe the different cultural orientations among the pregnant women that are useful in understanding the general belief system as socially constructed, defined and perceived.

About 38% respondents said they sought health care at the health centres or at the Faith based healer's places always. In addition, cultural values on signs/symptoms of a disease in terms of definitions and perceptions influenced the decision to seek health care in several ways.

4.3.1 Choice of place of management of PIH

In the study, respondents reported that they had ever used Holy water or *Mallam water* for different purposes including treating diseases. This was observed in one of the responses in the FGDs held with the educated respondents at the Kukuo Market.

- *.....When I used the water and am feeling well and has no pain, there is no reason to attend antenatal care as long as I have believed that it will work".* **Respondent A**

Furthermore, one participant also commented on the use of herbs as follows:

- "*Some pregnant women strongly believe in the herbs and the rituals they perform when they are expectant. This obstructs them from attending antenatal care clinics because the people who provide them with the herbs are friendly to them and at times they pay by credit or in kind or are even provided by their husbands to take*. **Respondent B**

Encouraging pregnant women to seek early treatment upon recognizing the sign/symptom of PIH is good since delay could lead to complications. All the respondents (100%) admitted that they knew the complications associated with PIH. From the results, 83 (41.5%) citing death of fetus, whilst 117 (58.5%) cited death of the mother as complications of PIH.

On average knowledge of respondents concerning identification and perception of what constitute a sign/symptom of PIH was not encouraging (49.8%). This is because respondents considered certain signs as being normal occurrences in pregnancy and wondered why it should be associated with PIH. In addition to cultural values on personal

definition of illness, there were also cultural beliefs that define what should and should not be done during pregnancy.

Table 4.4: Age and frequency of health care of pregnant women

Variable	Frequency	
	Often	When ill
20-30	51.6%	48.4%
31-40	59.4%	40.6%
41+	60.0%	40.0%

Source: Field data, 2017

There was no statistical relationship between age of respondents and frequency of seeking health care at any recognized health centre (χ^2=1.41; p=0.60). But there appears to be like those who are aged between 31-40 years seems to patronize health care more often than those in the other age categories. Age of a woman could influence the knowledge of and attitude towards antenatal care. The young and adolescent mothers tend to lack knowledge and importance of ANC services. Adolescent mothers may face domestic and family influence, economic and health service problems when they are pregnant.

These problems traumatise and stigmatise the young girls and constrain their options to the extent of going frequently to seek health care at health centres. Older mothers tend to be chief custodians of strongly held cultural beliefs and values that may/ may not favour using modern health care services including antenatal care. Particularly amidst the socio-economic challenges that mostly affect most women. Hence, service providers need to bear in mind the needs of women of different reproductive age groups.

Table 4.5: Occupation and causes of PIH

Variable	Causes of PIH		
	Unknown	Stress	Lack of exercise
Petty trading	64.8%	14.8%	20.5%
Salaried worker	83.1%	13.6%	3.4%
Unemployed	65.8%	2.6%	31.6%
Student	66.7%	6.7%	26.6%

Source: Field data, 2017

There was a statistical relationship between occupational status of respondents and knowledge of causes of PIH (χ^2=17.63; $p < 0.01$). This statistical relation could be based on the fact that most of the respondents were educated and their knowledge might have been informed by their exposure. Few were also nurses and their knowledge on PIH could have been informed by their practices and the other respondents knowledge on PIH could have also be informed by their day to day contact with their colleagues in their work place.

From the analyses, majority of those who were salaried workers (83.1%) knew that the causes of PIH are unknown as against 64.8% in petty trading, 66.7% in students and 65.8% in unemployed. Women occupations affect utilisation of antenatal care seeking patterns in terms of affordability and time. A majority tends to be housewives without independent and stable financial or other resources position which limits their independent decision making on seeking antenatal care services.

As a result most mothers depend on their husbands or other relatives to access essential services beyond the households including health services. Differences in occupations

influence time availability and access to vital information on ANC as well as general accessibility for health services. A woman involved in gainful employment finds it comparatively easier to meet costs for health needs and to access information needed on ANC services than a large number of women who stay at home as housewives.

Table 4.6: One way ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.447	1	0.447	0.879	0.350
Within Groups	100.673	198	0.508		
Total	101.120	199			

Source: Field data, 2017

From Table 4.6 one way ANOVA of the results showed that there was a statistical significant association in terms of age of respondents and frequency of health care at the health centres both within and between age groups (p =0.350). This analysis probably shows that within the age groups respondents who were younger intended to patronize health centre much more than those who were older. And between age groups, analyses also showed that those who were aged 41 years or more did not patronize health care at health facilities.

There was also a statistical relationship between educational status of respondents and knowledge on the causes of PIH (p =0.021). This could probably be due to the fact that educated respondents might have read about it or were even professional in the health sector and their knowledge could have been informed by their exposure to the PIH both in practice or by managing the condition with patients.

The result of the study illustrates that highest knowledge was in the area of knowledge associated with PIH as high blood pressure, the mean percentage was 93.66 with mean and SD of 1.97± 0.38. In the area of sign/symptoms associated with PIH the mean percentage was 49.33 with mean and SD of 0.71 ± 0.66, which was the lowest. In the area of complications of PIH, the mean percentage was 53.85 with mean and SD of 1.66 ± 0.66. The study shows that participants had very good knowledge on PIH. They had moderately good knowledge on the aspects of both signs/symptoms and complications of PIH.

4.3.2 Knowledge of respondents on PIH

This part of the study presents the qualitative responses of the respondents

- *I have ever heard of PIH in many sources, I think my last pregnancy, I has signs similar to those we are discussion now…, PIH is when a woman who had not got high blood pressure suddenly develops it because she has become pregnant…….* **Respondent C**
- *….I think PIH is when a person experiences high blood pressure for more than two separate readings at a health centre.* **Respondent D**

4.3.3 Signs of PIH

- *… One sign/symptom of PIH I think which is common is death of the fetus inside the uterus which most people often associate with witches even though witches sometimes can do that too especially if you have problem with them*. **Respondent E**

- *Sometimes…., weight gain is perceived as the baby is growing well in the womb of the mother. But I think rapid weight gain is a sign/symptom of PIH.* **Respondent F**
- *…Having very high blood pressure is a sign/symptom of PIH.***Respondent G.**
- *During my last pregnancy, I visited the health centre with swollen leg, no health worker said anything about it. So I perceived it as being normal in every pregnancy……..*

  Respondent H

Complications of PIH

I think uncontrolled bleeding of sudden onset is a complication of PIH. **Respondent J**

- *...PIH is a multi-system disorder and it affects the fetus because of utero-placental insufficiency….* **Respondent K**

4.4 Self-care management of PIH among pregnant women

Pregnant women use self-care to management PIH especially if they have adequate knowledge to identify signs and symptoms of PIH and the needed assistance provided for them to seek prompt and appropriate care. The possibility that women do not seek timely care may be increased if women have a poor understanding of signs and symptoms of PIH.

Table 4.7: Self-care of PIH

Variable		Frequency (200)	Percent (%)
Preferred place	Health centre	161	80.5
	Home management	14	7.0
	Faith healers	25	12.5
Measures against PIH	Regular ANC visit	105	52.5
	Good diet	30	15.0
	Faith healer	22	11.0
	Take prescribed drugs	43	21.5

Source: Field data, 2017

All the respondents (100%) said that controlling blood pressure could assist to prevent PIH. This could probably be due to the fact that all the respondents associated PIH with high blood pressure. If respondents had the knowledge to identify ways to minimize high blood pressure during pregnancy, it could be the first step towards reducing PIH.

From Table 4.7, majority of the respondents (80.5%) said that they preferred the health centre as the best place to go if they have signs/symptoms of PIH. This could probably be due to the fact that respondents are informed of the benefits of seeking health care at a recognized health facility. The less influence of background characteristics on antenatal care attendance points to the importance of the individual experiences by pregnant women.

Painful experience of pregnancy causes and/or is characterised by suffering, sadness, misery, fear and being uncomfortable. Many pregnant women tend to experience nausea, dizziness, headache, loss of appetite, general physical weakness, vomiting and having cravings for peculiar foods.

Such experiences by expectant women may force them to hate the pregnancy subsequently resulting into failure to care for it and to shun antenatal clinics. On the other hand, a lovely and memorable experience motivates expectant women to seek all help including antenatal care to safeguard the expected child. However, all these perceptions tend to be cushioned in cultural value systems (Aziga et al. 2013).

Accordingly, socio-cultural belief systems, values, and practices also shape an individual's knowledge and perception of health and illness/disease, and health care seeking practices and behaviours. These value and belief systems are shaped by the dominant societal philosophy. In dominant patriarchal cultures such as those found in Northern Ghana, for example, men constitute a strong determinant factor in the definition of a health care need and how it is met given that they control almost all the resources in or for the family.

From the results also, 12.5% respondents identified Faith based healers as their preferred place to go for the management of PIH signs/symptoms. The cultural practices of people not only affect their health but also affect all aspects of life including social relationships, contribution to societal functioning and disease condition. Illness is believed to have its origin in a primary supernatural cause. The people see the causes of illness from viruses, bacteria and parasites as secondary causes.

Since Traditional African Medicine (TAM) has been with the rural dwellers for generations and also for the fact that orthodox medicine is often in short supply, expensive and often times fake, the people's approach in terms of ill-health is first turned towards patronizing the easily accessible traditional African medicines.

Fundamentally, most Africans specifically belief in the efficacy of African Traditional Medicine and as enunciated earlier this belief and practice have long been with them and have affected or influenced to a greater extent their attitudes and behaviors to themselves and others around.

An average rural dweller before now in Ghana for instance belief, utilizes and concentrates on traditional medicines like for the cure/treatment of illnesses, unexplainable ailments, poison and even infertility to mention but a few. Although through development, civilization and education among other factors have helped to introduce change tremendously towards these beliefs and behavior to orthodox medicine patronage.

Studies though show that considerable positive results had been attained by this practice, also issues of complications, standardization, efficacy, etc. have hindered the progressively positive results that are being envisaged, hence due to fake claims of its all-purpose efficacy in illness treatment more deaths have been recorded in and amongst rural dwellers who are noted as higher percentage of those who patronize them.

It is when this fails that they resort to chemist shops or medicine vendors and then the hospital as the last resort. In TAM, divination (consulting the oracles enchantments), confession, ritual sacrifices, incantations and portions made from plants and animal parts are essential components of illness management. These are aimed at restoring the patient to a harmonious relationship with his environment and to counteract the effect of evil forces. The clear and very enticing reason for patronage is that almost every illness condition is interpreted as a spiritual (evil) attack that needs traditional healing powers (Aziga et al. 2013).

From the analyses, 7% respondents said they preferred home management of PIH signs and symptoms. This could probably be due to the fact that people have difference beliefs and preference when it comes to health seeking behavior. It should also be emphasized that people do not think that certain illnesses are for hospital treatment and so have to go to Faith based healers first before seeking health care later at a health centre.

Preference for a certain belief system is thought to be influenced by modern or traditional thinking and education. Attitudes leads to a tendency not to seek help or delay seeking help until the condition is too serious to ignore. Many people have culturally developed an increased tolerance for illness. It can also be the same with pregnant women with PIH complications at the study area.

Also, 52.5% respondents stated that regular ANC visit would assist pregnant women to reduce PIH complications especially during the early stages of clinical manifestations. Early booking, regular antenatal clinic attendance and contextual health education should be encouraged to assist pregnant women identify early signs of PIH and report to the nearest health centre for the necessary action to be taken. Analyses also showed that, 21.5% respondents said that when pregnant women take their right prescription it would assist them to reduce PIH complications, 15% respondents said good diet would assist in reducing PIH whilst 11% respondents said going to Faith based healers could also assist to reduce PIH complications.

Table 4.8: Education and preferred place of health care of pregnant women

Variable	Causes of PIH		
	Health centre	Home management	Faith healers
No formal education	74.0%	9.1%	16.9%
SHS	81.0%	9.5%	9.5%
JHS	84.1%	0.0%	15.9%
Tertiary	86.2%	8.6%	5.2%

Source: Field data, 2017

There was a statistical relationship between educational status of respondents and preferred place of health care (χ^2=8.91; p=0.05). This results could probably be due to the fact that educated people knew the advantages of going to a health centre to seek treatment as compare to the uneducated who may perceived certain signs/symptoms as not being associated with hospital treatment and so may not make the attempt to seek treatment in those places. Knowledge empowers the people to be decisive and to take informed decisions. This is significant because an increase in the level of knowledge empowers people to make informed decisions.

An increase in knowledge and an increase in interventions were found to lead to a rise in health seeking behaviours of pregnant women. It should be noted that knowledge of PIH alone does not predict actual use. This has been demonstrated in the study by Sebone (2001) who cites the World Health Organization/University of Botswana KAP study (2000) which states that there is high knowledge (e.g. PIH awareness of 95%).

However, this knowledge has not been found to be congruent with the actual practices of the pregnant women seeking health care at health centres. This, therefore, implies that the relationship between knowledge and practice is complex. There was however, no statistical association between age and preferred place of health care (χ^2=0.35; p=0.99). This could probably be due to the reason that both the young and the older sought health care from both health centres and at Faith based healers place.

4.4.2 Importance of ANC visits

- *I attend ANC regularly if I notice any sign/symptoms of PIH for treatment.*

  Respondent N

4.5 How pregnant women control PIH

Pregnant women could only know how to control PIH if they are adequately educated on the seriousness of complications of PIH. Respondents were asked to indicate the advantages of going to hospital if pregnant women recognized any sign/symptom of PIH. Respondents identified the advantages to include; pregnant women would be given correct treatment in the health centres, their condition would be monitored by a nurse/doctor, fatal complications would be prevented, convulsions can be prevented, baby can be delivered quickly before it dies, pregnancy can be prolonged to allow the baby to grow.

Respondents clearly distinguish a healthy pregnancy from one with complications. A healthy pregnancy is defined and characterised as one in which there is movement of the foetus (67%) whilst 33% respondents said when problems are associated with the pregnancy. Other signs of a healthy pregnancy include feeling strong, freedom from malaria, fevers, vomiting, headache and anaemia.

During the FGDs discussion with participants, they argue that a healthy pregnancy imply that one does not need to visit the health centre for ANC checkups, meaning that such a construction of pregnancy negatively influenced ANC health seeking behaviour. In many circumstances poor health is the outcome of many forces beyond a person's control. These forces may be associated with disease environment, family circumstances and personal vulnerability. In all this, however, the individual behaviour stands out to be the greatest factor of growing importance to health during pregnant.

4.5.1 How pregnant women control PIH

- *I think pregnant women could control PIH, if they report to the nearest health centre early with any recognized PIH signs/symptoms.* **Respondent O**

4.5.2 How to control PIH

- *…..Pregnant women should try to do exercise once a while.* **Respondent P**
- *Pregnant women should take a rest.* **Respondent Q**
- *I think pregnant women should take Calcium supplementation when given by a health worker….* **Respondent R**
- *Although, it is doubtful if PIH can be prevented, the incidence appears to be reduced if pregnant woman restricts the weight gain to about 0.5 kg/week in the second half of pregnancy*. **Respondent S**
- *At the clinic level too, we advise pregnant women who are at risk not to take salt to prevent fluid retention and pre-eclampsia*. **Respondent T**

4.6 Health Seeking Behaviour

The study employed the HBM. The Health Belief Model (HBM) by Rosenstock (1966) is beneficial in assessing health protection or disease prevention behaviour. In this study it

was used to assess the health seeking behaviours of pregnant women on pregnancy induced hypertension concerning knowledge of signs/symptoms and complications and actions to avert the symptoms.

Components of the Health belief model are; perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, cues to action, modifying factors and likelihood of action. This study focused on perceived seriousness, perceived benefits, perceived barriers and likelihood to take action.

4.6.1 Perceived benefits

Perceived benefits or preventive action refers to how various beneficial alternatives are believed to be feasible, acceptable and or desirable. These are the person's beliefs about the availability and effectiveness of various sources of health care and not the objective facts about the effectiveness of action determine what course of action one will take. In addition the norms and pressures of social groups influence individual behaviour on seeking care.

In this study the perceived benefits of using any of the sources of health care provision by the pregnant women with pregnancy induced hypertension with sign/symptom or complication were a desire to feel how well to prevent fatal complications, deliver baby before baby dies, be examined by a doctor or nurse, given correct treatment and to allow the baby to grow.

Analyses revealed that, 185 (92.5%) respondents stated that reporting to the health centre early with PIH complications or signs/symptoms would prevent fatal complications whilst 15 (7.5%) respondents said early treatment may not prevent fatal complications. Analyses also showed that 177 (88.5%) respondents said reporting early to the health

centre would assist the nurse/doctor to monitor the condition well whilst 23 (11.5%) respondents said contrary. From the results also, 195 (97.5%) respondents said that reporting early to the health centre would assist pregnant women to get correct treatment whilst 5 (2.5%) said contrary.

4.6.1.1 Pearson Product Moment Correlation test

The Pearson Product-Moment Correlation analysis was done to establish if there was a statistical relationship between respondents knowledge of PIH signs/symptoms or complications and health seeking behavior. The results showed a positive correlation ($r = 0.142$; $p = 0.02$), which shows a positive relationship between knowledge of PIH signs/symptoms or complications and health seeking behavior of respondents.

As knowledge of PIH signs/symptoms or complications increases, there is the likelihood that pregnant women health seeking behavior would improve. The results could not only establish which place pregnant women were more likely to make the choice to go especially that pregnant women have identified more than one place of seeking health care at the study area.

4.6.2 Perceived seriousness with which pregnant women view PIH complications

Perceived seriousness refers to perceived severity of a health condition linked to an individual's knowledge about the condition and its possible consequences. In this study, perceived seriousness was the seriousness with which the pregnant women would view the preceding signs and symptoms of pregnancy induced hypertension complications, like eclampsia, continuous frontal or occipital headache, epigastric/abdominal pain, and confusion among others.

From the results, all the respondents (100%) stated that having a continuous head ache is something to worry about. This result supports the fact that pregnant women perceive this condition as serious and would likely take action to stop it. From the analyses also, 175 (87.5%) respondents stated that having reduced fetal movements is not normal in pregnancy whilst only 25 (12.5%) respondents said that having reduced fetal movements is normal in pregnancy.

From the analyses, 125 (62.5%) respondents said that generalized oedema is part of normal happening in pregnancy whilst 75 (37.5%) respondents said it is not. Additionally, 185 (92.5%) respondents said that reduced urine output means a serious complication whilst 15 (7.5%) respondents said it is not serious complication of PIH. All the respondents (100%) considered blurred vision and fetal death as complications of PIH.

4.6.2.1 Pearson Product Moment Correlation test

A Pearson Product-Moment Correlation was run to determine the relationship between perceived severity of a sign/symptom of PIH and health seeking behavior of pregnant women. There was a strong, positive correlation between perceived severity and health seeking behavior of pregnant women, which was statistically significant ($r= 0.14$, $n = 200$, $p = 0.005$). As knowledge of PIH signs/symptoms or complications increases, there is the likelihood that pregnant women health seeking behavior would improve. Results support that knowledge of perceived severity of PIH signs and symptoms has a positive effect on health seeking behavior of pregnant women.

4.6.3 Barriers to action

Analyses revealed that 150 (75%) respondents said waiting time to get treatment is too long at health centres whilst 50 (25%) respondents said waiting time is not too long. From the results, 115 (57.5%) respondents said some of the diseases are not for hospital treatment whilst 85 (42.5%) said contrary. From the results also, 157 (78.5%) respondents said that Faith healers do not offer free treatment whilst 43 (21.5%) respondents said Faith healers offer free treatment. From the results, 45 (22.5%) respondents said decision to go to hospital has to be made by husband or significant others whilst 155 (77.5%) said contrary. Ten (5%) respondents said that their family do not use medical treatment whilst 190 (95%) said contrary. Sixty-five (32.5%) respondents said they did not have money to pay for transport whilst 135 (67.5%) respondents said contrary.

From the results also, 14 (7%) respondents said that they only come to hospital when home treatment has failed whilst 186 (93%) respondents said contrary. From the results, 150 (75%) respondents said the reception at the hospital is poor/unfriendly health personnel whilst 50 (25%) respondents said contrary. It is important to state that the health care centre is the only customer care centre where bad customer relation among patients and health staff could lead to death.

4.6.3.1 Pearson Product Moment Correlation test

A Pearson Product-Moment Correlation was run to determine the relationship between perceived barriers and health seeking behavior of pregnant women. There was a strong, positive correlation between perceived barriers and health seeking behavior of pregnant women, which was statistically significant ($r = 0.10$, $n = 200$, $p = 0.000$).

Probably health seeking behavior of pregnant women is also influenced by significant others especially the husband in cases where pregnant women by themselves cannot afford transportation cost or has to follow the husband to Faith based healer before being allow to seek health care at a health centre could influence her health seeking behavior.

4.6.3.1 Influence of significant others on PIH management

This part of the data analysis presents the responses of respondents on how they were said

- *...If my husband tells me, let go to the Mallam, what can I do? I would have to follow him to the Mallam place to see what can be done to save my life and my unborn baby.* **Respondent V**

4.6.3.1 Places of health care

- *I think sometimes illnesses that are not normal, you could also visit the Faith based healers to control it…,.***Respondent U**
- *If I also know that the condition can be treated in the health centre, then I would go there. Infact, not all sicknesses can be treated in the Health centre.* **Respondent W**
- *Sometimes, too if the distance from my place to the health centre is far, then I have to look for alternate ways of solving my problems.* **Respondent X**
- *..., If I would get all the medications at the health centres, not the usual one drug that is given to us then I would go to the health centre for the treatment.* **Respondent Y**

4.6.4 Likelihood of taking action

In this study likelihood that the person will take any action is the likelihood that pregnant women with the knowledge of PIH sign/symptom will report for professional treatment. From the results all the respondents (100%) stated that pregnant women would take action if they have the knowledge to identify signs/symptoms of PIH and also perceive PIH condition as being severe. From the results, respondents identified good medical care at health centres, less waiting time, significant others support, absence of alternative treatment options, closeness to health centres and timely recognition of signs of PIH as motivating factors to health care.

4.6.4.1 Pearson Product Moment Correlation test

A Pearson product-moment correlation was run to determine the relationship between likelihood of taking action and health seeking behavior of pregnant women. There was a positive correlation between likelihood of taking action and health seeking behavior of pregnant women, which was statistically significant (r =1.12, n =200, p = 0.003).

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

This chapter presents the discussion of the results from the study. The discussion of the results was done specifically according to the study objectives. The discussion examines how key findings have agreed with or at variance with available literature in this research work.

5.2 Knowledge level regarding PIH

The Cambridge Dictionary of the English language defines knowledge as awareness that something exists; or an understanding of a situation or subject based on the available information and experience (Dekker, 2013). Basic information that a product exists is at the lower end of an awareness continuum scale for a product; at the higher end of the awareness continuum scale is high level of familiarity of the product including its prior use (Dekker, 2013).

Knowledge of PIH is therefore the logical first step necessary for pregnant women to take measures to safe guard themselves against developing PIH complications. Since intensity of knowledge is related to the available information and experience, the extent of health seeking behaviour is also dependent on the intensity of knowledge of PIH signs/symptoms. Identification of PIH signs/symptoms plays a crucial role in self-care management and health seeking behavior of pregnant women.

The definition and classification of PIH continues to generate controversy because of the limited knowledge of the etiology of PIH and the continuous nature of the signs and symptoms used for diagnosis. While the prevention of PIH continues to elude us,

meticulous medical management of the mother and surveillance of the fetus would contribute to an overall lowering of its contribution to perinatal and maternal morbidity and mortality.

Respondents of this study area displayed adequate knowledge towards PIH. Findings from the study revealed that most (85.5%)of the respondents had adequate knowledge on PIH. All the respondents admitted to have ever heard of it with almost every one identifying at least one source of information concerning PIH. Being able to identify the condition and also perceiving themselves susceptible to the condition could influence them in their health seeking behavior. This finding from the study supports the study done by Tuovinen, Raikkonen and Pesonen (2012).

From the analyses, majority (85.5%) of the respondents explained PIH to be high blood pressure that occurs in pregnancy after 20 weeks gestation to 42 days post delivery whilst others also considered PIH to be any high blood at any time. This is not surprising as most of the respondents considered PIH as ‘zim doro’ in the local dialect. This awareness of respondents could probably have been informed by their exposure to relatives and friends who talk about it at every day of their encounter with people and even those who go to visit their relatives at health centres.

From the results, respondents had inadequate knowledge on sign/symptoms of PIH. From the interaction with respondents especially at the focus group discussions, it was evident that most respondents considered certain things as normal in every pregnancy.

This was succinctly presented by one respondent in the focus group discussion as such;

- *During my last pregnancy, I visited the health centre with swollen leg, no health worker said anything about it. So I perceived it as being normal in every pregnancy.*

Considering certain signs/symptoms as being normal in pregnancy could influence their health seeking behavior negatively. It is equally worth stating that there was no difference in knowledge scores amongst respondents who suffered PIH before and those who did not suffer PIH before in terms of identification of signs/symptoms of PIH.

This finding from the results supports the study done by Good (2013) where in Zambia pregnant women knowledge concerning signs and symptoms of PIH, was found to be inadequate. It also concurs with the findings presented by Anorlu, Iwuala and Odum (2013) where over 78% pregnant women did not consider certain signs/symptoms as PIH. The findings however is at variance with the findings presented by Osei-Nketiah (2011) where pregnant women in Ghana could identify signs/symptoms of PIH in a descriptive cross sectional study. Even though the data collected was health facility based-rather than community-based.

It is reasonable to assume that the pregnant women in the study are representative of women in the community because the Ghana Demographic and Health Surveys (GDHS, 2008) showed that more than 95% of Ghanaian women attended antenatal care and this could perhaps be a general picture of how the larger cohort of the study population also perceive about PIH signs/symptoms. From the results, all the respondents agree with the statement that the deaths of a foetus inside the uterus, death of the mother and very high blood pressure were signs/symptoms of PIH. This finding from the study supports the

study done by Camazine (2010) where pregnant women in Zuni Indians of New Mexico considered deaths of fetus inside the uterus as a sign of complication of PIH.

PIH is one of the most common causes ofboth maternal and neonatal morbidity and mortality. While few respondents were aware that they could experience maternal complications during pregnancy as a result of PIH, majority could not name specific risks to the fetus/baby. It was often expressed that PIH causes direct risk to the mother mostly. This was evident in one participant who had to say when asked about the knowledge they have on the impact of PIH on the unborn baby during a focus group discussion.

- *"I didn't know that when theblood pressure is high I can even loose thebaby".*

Effect of PIH on the fetus, the predominant etiologic theory of preeclampsia is that the reduced uteroplacental perfusion is the unique pathogenic process in the development of preeclampsia. Fetal prognosis is poor because of hypoxia and fetal acidosis. The fetus may face risks of fetal immaturity. Fetal mortality is approximately 10 percent if PIH develops, and increases as high as 25 percent (Bangal et al. 2011). Decreased uteroplacental blood flow would result in intrauterine growth restriction, low birth weight and may be delivered prematurely (Feig, Shah and Lipscombe, 2013)

From the results, respondents identified certain places where pregnant women could seek for health care in times of need. These places were health centre (83%), herbalist (5%) and Faith based healers (12%). Even though, all the respondents admitted going to the health centres to seek health care was the best, they still maintain that they had their preferred places they go for treatment.

This finding from the study is similar to the report by Buga and Shumu (2011) where pregnant women sought health care first at Traditional birth attendants and herbalist

before reporting to the health centre. Antenatal care seeking behaviour patterns of expectant women do not conform to the medical recommendations. Most pregnant women do not go for antenatal care when expected, a number of pregnant women report late while some pregnant women report for less than the four visits recommended by the (WHO, 2003).

This could possibly be due to the fact that most of them would have to revert to other places first to seek treatment before blending the health care system of managing their conditions. It is important to note that inconsistence in attending ANC clinics to address certain signs/symptoms of an illness needs to be understood from the way the individual mothers perceive and define their pregnancies as either normal or being abnormal.

According to Safadi (2014) model, there are different reasons that may compel a patient to seek for medical attention. One of the aspects is time and mode of onset of symptoms such as the nature or type of pregnancy complications that occur. Experiences of abdominal pains or other complications and fear of caesarean section during delivery, for example, may not motivate women to contact medical professional for ANC services.

On the other hand, women who do not experience pregnancy complications and also have normal child delivery tend to take it for granted and may see the health professionals less for ANC. Women continuously use their cultural value systems to interpret the meaning and perceptions of their pregnancy and the need for medical attention including antenatal care.

There is a strong interaction of social perceptions and definitions of expectant women, their culture and how they seek antenatal care. A joyous experience, for example, obliges the father to the unborn baby and his family to support the expecting wife. One reason

why the husband and family support the expecting wife is to eliminate genetic decay which also qualifies the husband as a man.

Whereas a painful experience of pregnancy may encourage some women to seek for antenatal care, it may also discourage others especially the adolescent mothers who often meet unfriendly reactions to their pregnancy from their family and health providers.

5.3 Self-care management of PIH

Health-seeking behavior refers to all those things people do to prevent diseases and to maintain health. It is clear that every individual desires a healthy living and society. This is altruism because the cultural practice which is a way of life determines the health condition, strength and activities of the people in any developing or developed societies. Some of these cultural practices, which have endured centuries of practice work for the people.

It is not uncommon to think of something crude and bad whenever one talks about cultural practices as it concerns health. Not all cultural/traditional practices are bad however, some have stood the test of time and have positive values, others are uncertain and negatively harmful. It is essential to have an idea about cultural practices of some communities because the practices a community adopts fulfill certain purposes for the culture bearers.

Hypertensive disorders of pregnancy remain the commonest direct cause of maternal mortality in the world. Information about Pregnancy-induced hypertension has not reached many pregnant women in the world. Pregnancy-induced hypertension is particularly sinister in its early stages as a woman may be totally unaware of its presence. Maternal and fetal complications increase with an increase in PIH, but appropriate

maternal and perinatal care management can prevent dangerous outcomes such as eclampsia and maternal death.

With reference to dietary and lifestyle changes there is insufficient evidence to make recommendations about the usefulness of the following. Salt restriction among women with pre-existing hypertension, heart healthy diet, calorie restriction for obese women, exercise, workload reduction or stress reduction and bed rest especially among pregnant women.

A component of care through hospital day units or home care can be considered for women with non-severe preeclampsia or hypertension. Respondents reported patronizing multiple types of health care providers in pregnancy. Some women preferred services offered at the health centre or government hospital, most favoured Faith based healers and herbalists in pregnancy to manage PIH signs/symptoms.

The use of Faith based healers does not reportedly prevent pregnant women from registering at the health centre, and it was rare to find pregnant women who patronized only one type of service provider as a way of managing PIH during pregnancy. From the results, 80.5% respondents stated that their preferred place of seeking health care is at the health centre, 7% respondents said home management whilst 12.5% respondents said Faith based healers. This finding from the study is similar to the finings made by Ashford (2014) and also concurs with the findings made by Anorlu, Iwuala and Odum (2013).

It is important to state that certain cultural practices are still underpinning pregnancy and childbirth in Ghana especially in the study area where male domination is still much felt. This was evident in one of the participants remarked;

- *If my husband tells me, let go to the Mallam, what can I do? I would have to follow him to the Mallam place to see what can be done to save my life and my unborn baby.*

And also;

- *If I also know that the condition can be treated in the health centre, then I would go there. Infact, not all sicknesses can be treated in the Health centre.*

The implications of such a finding affirm the belief that cultural factors influence choice of places of managing PIH signs/symptoms and this may influence pregnant women to make the choice based on the cultural belief to seek health care at any places of their choice. Strong patriarchal cultures also influence women's health seeking behaviour patterns.

In certain cultures, expectant women must observe certain taboos during the pregnancy period, in the process of preparing for birth, during child delivery and after birth. It is believed that once these taboos are observed, the health of the mother and child will be assured. The influence of cultural values and belief systems is much more qualitative than quantitative, varies from context to context and hence not standard and is more endogenous than exogenous in terms of bias.

From the results, 15% respondents said good diet would assist in reducing PIH among pregnant women. This finding from the study is similar to the findings presented by Awashi, Verma and Agarwal (2013) where pregnant women as part of self care management considered good diet and regular ANC visits as the best way to management PIH. Others 21.5% respondents said that when pregnant women take their right prescription it would assist them to reduce PIH. Practitioners should evaluate each

clinical situation balancing the positive and negative aspects of each medication with gestational age to determine which agent may be most suitable.

A meta-analysis concluded that hydralazine may have an increased incidence of maternal hypotension, headaches, and tachycardia. Labetalol was found to have an increased risk of neonatal hypotension and may lead to increased incidence of intrauterine growth restriction (Bakker, et al., 2011).

Methyldopa has long been used to treat blood pressure conditions during pregnancy and is often considered to be the most commonly used antihypertensive agent during pregnancy (Bakker, *et al.,* 2011). It has been found to have minimal effects on the fetus/neonate in a long term follow-up study. Nicardipine and nifedipine may cause reflex tachycardia, decreased uterine tone, and vasodilation (Bakker, *et al.,* (2011).

Although adverse neonatal effects have been noted in some studies, it may be difficult to discern if these were due to the medication itself, maternal disease, or effects of pre-maturity. The results also showed that most of them also go to ANC regularly as a way of managing PIH signs/symptoms. This was shown in the response of one participant in the focus group discussion held with the pregnant women.

- I *attend ANC regularly if I notice any sign/symptoms of PIH for treatment.*

This finding from the study is at variance with the findings presented by Conde-Agudelo and Belizan (2010) were pregnant women in Uganda did not know how to manage PIH. There was a statistical relationship between educational status of respondents and preferred place of health care (χ^2=8.91; p=0.05). This finding from the study is similar to the study done by Kinoti and Padachy (1997) where educated study participants were 12

times more likely to know how to control PIH during pregnancy than those who were not educated (OR; 12.0; P=0.012).

The study area had a dominant culture of patriarchy, and the man's consent played a significant role in determining where and when a woman could seek health care. During the focus group discussions with some of the educated pregnant women at the Kukuo Market showed that some women would not start ANC until they were permitted to do so by their husbands. This they said was preventing pregnant women from effectively managing the PIH condition. Women who made independent health care decisions were considered to be arrogant, disrespectful and in the word of one female participant,

- *"She is now of her own"*.

Such systems make expectant women take their socio-economic and physical vulnerability as normal. To believe that a true woman should go unsupported through pregnancy to safe child delivery implies that the woman takes the blame for a bad pregnancy or unsuccessful child delivery while success usually goes to the man and his family. This is part of patriarchal domination and exploitation though the perception is gradually weakening among women of the contemporary society because of western formal education and more exposure to health information.

The practice is still lingering its heads in certain families or communities. Cultural value systems expose women to barriers that lie beyond lack of resources in healthcare services or accessibility to such services. Cultural barriers force women to adhere to very traditional practices of child birth. This cultural view also hinders the chances of women seeking professional maternal care.

The socio-cultural beliefs that women hold on pregnancy are culturally constructed and reconstructed and further rooted in taboos, rituals and practices of their communities. Hence, the service providers to expectant women need to be trained to be aware of and understand these dynamics in order to appropriately respond the antenatal care needs of women.

5.4 How pregnant women control PIH

Pregnancy-induced hypertension is associated with multiple complications in the mother and baby, and particularly pre-term delivery. Therefore, the timely diagnosis of PIH and provision of specialized antenatal maternal care could reduce the impacts of such complications. From the results, respondents identified the importance of seeking health care at the health centres as a way of controlling PIH during pregnancies. One respondent suggested;

- *I think pregnant women could control PIH, if they report to the nearest health centre early with any recognized PIH signs/symptoms.*

This finding is similar to the findings presented by Rahimi, Mozafari and Parsian (2013) where pregnant women suggested that PIH could be prevented by attending ANC regularly. Early booking and regular antenatal care attendance should be encouraged. Early identification of women at risk of PIH may help to prevent complications of the condition. The antenatal care service constitutes screening for health and socio-economic conditions that are likely to increase the possibility of specific adverse pregnancy outcomes.

It is the services that focus on the identification of risk factors, early diagnosis of pregnancy complications, appropriate management, and health education. During

antenatal care attendance, education about warning symptoms is also important because early recognition may help women receive treatment and prevent worsening of the condition.

When pregnant women are having mild hypertension with the Blood pressure of 140/90 mmHg – 140/ 99 mmHg, the client should be seen more frequent at the clinic. The woman should be advice to visit the clinic more than once a week for blood pressure monitoring and for urine testing. When pregnant women report to the health centre early with PIH signs/symptoms, urine examination would be done for the presence of protein.

PIH causes vasospasm of the afferent arterioles and this result in decreased renal blood flow. When there's a decrease amount of urine to less than 500 ml in 24 hours, this causes damage to the glomerular endothelial. When the glomerular endothelial is damaged, this allows plasma proteins in the form of albumin to filter into urine, hence protein in urine (Olusanya and Solanke, 2012).

From the results respondents also recommended exercise for pregnant women as a way of controlling PIH. This was evident in one of the responses in the focus group discussion with married women at the Bilpeila Clinic.

- *I think pregnant women should try to do exercise once a while*

This finding from the study supports the study done by Rahimi, Mozafari and Parsian (2013) where 77% pregnant women recommended that the only way to control PIH is for pregnant women to attend ANC regularly and do more of less vigorous exercise. It is worth stating that usually most pregnant women consider pregnancy as a form of illness. During such occurrences, hardly would you see pregnant women engaging in any form of exercise.

This is usually, in line with the health model of health and illness, where the expectant women evaluate rationale for their pregnancy, causes of their pregnancy complications and make decisions on the appropriate treatment for desired outcomes. What is important is not whether a woman has a positive or negative experience but how positive experiences can be harnessed and how the causes of negative experiences can be removed or managed under a decentralized health care delivery system.

Given that such social definitions of pregnancy held by pregnant women influence their engagement in any form of exercise, it is important to sensitize women and those who attend to them to understand the importance of engaging in less vigorous exercises in order to motivate pregnant women or mothers to do it for better maternal and child health. From the results also, it was also observed that respondents also visited certain places such as the Faith based healers and Herbalist centres to control their blood pressure.

This was evident in one of the responses of a participant during the focus group discussion.

- *I think sometimes illnesses that are not normal, you could also visit the Faith based healers to control it.*

This finding from the study supports the study done by Ahmad and Samuelsen (2012) and Oppong (2010) where patients stated that certain illnesses had supernatural causes. Everywhere, the quest for health easily shades into issues of morality and religion which play a significant aspect of social life. The basic explanation is that in serious illness there is an underpinning of the supernatural, the most frequently evoked agency is ancestral

spirit anger. Ancestral spirit constitutes part of the ordered structure of the African religion.

People believe that upsetting the ancestors produces a disturbance of this order and hence disharmony and illness occur. In African thoughts, all living things including man are linked in harmonious relationship with the gods and the spirits, such relationship is ascribed to vital forces which each entity generates.

A state of health exists when there is perfect harmony between man and his environment. This belief is inherent in those who practice African traditional religion as well as in many Christians and Muslims religious practices at one point in time or the other. Ill-health and other misfortunes, which often times defile scientific and orthodox treatments are explained as spiritual forces directed by witches, wizards, sorcerers, evil spirits or angered ancestors. The popular notion is that people do not just suffer illness by chance.

Self medication is common practice in by women. For this reason, the role of culture and religion in influencing health-seeking behaviours is important to understand. For example, health is commonly associated with spiritual balance as opposed to factors surrounding nutrition, hygiene and healthcare practices.

Some, including healthcare workers, also believe that traditional medicine offers the possibility of cure where modern medicine cannot. The general beliefs and perceptions surrounding health, a high illiteracy rate and difficulties in access to health services further aggravate the already low level of healthcare utilisation. Traditional medicine receives strong support from both pregnant women and their family members.

Reasons for its use include perceived efficacy, cultural acceptance, minimal side effects, accessibility and lower cost in comparison to modern medicine.

Majority of the rural dwellers in Ghana are at variance with reality when it comes to treatment of chronic diseases such as diabetes mellitus, bronchial asthma, hypertension, arthritis and epilepsy (Atinga and Baku, 2013).

On repeated follow-up treatment and check-ups, the people concluded wrongly, that orthodox medicine does not have effective remedy for such diseases, therefore they opted for TAM. Whenever the people envisage that treatment outcome may be unsuccessful example during critical illnesses like PIH, they decide to go home from hospital to seek traditional medicine attention with the hope that herbalists can restore life.

From the results, respondents also stated that pregnant women could take drugs to control PIH. This was again observed in one response as;

- *I think pregnant women should take Calcium supplementation when given by a health worker*.

This finding from the study is at variance with the findings made by Atinga and Baku (2013) where patients thought that even drugs could not treat a condition that has no cause. From this result, pregnant women may believe to taking certain drugs with the hope that it would prevent PIH. It is worth stating that while acknowledging the importance of drugs in controlling PIH, not drugs are good for pregnant women in controlling PIH.

Research has centered around early screening utilizing various markers to attempt to predict preeclampsia, such as placental growth factor (PIGF), free β human Chorionic Gonadotropin (β-hCG), Pregnancy-Associated Plasma Protein-A (PAPP-A), A Disintegrin And Metalloprotease 12 (ADAM12), Inhibin A, Activin A, uterine artery Doppler, mean arterial pressure, and maternal factors (Singh and Srivastava, 2015).

5.5 Empirical support of the theoretical foundation of the study

Health care decisions in pregnancy can be explained by the use of the Health Belief Model, which states that individuals weigh the potential benefits against the psychological, physical and financial costs when making decision to seek care, as was reflected in these findings. This study seeks to examine whether perceived seriousness, perceived threat and perceived benefits were strongly correlated with health seeking behavior of respondents.

The independent variables perceived seriousness, perceived threat and perceived benefits each were found to be strongly correlated with health seeking behavior of respondents. A certain minimum amount of awareness about a sign/symptom is necessary before a pregnant woman can seek health care. Hence, the researcher used the Pearson Product Moment Correlation test to analyse awareness and health seeking behaviour of pregnant women at the study area based on the sample selection model and the assumptions underpinning the analyses of Pearson Product Moment Correlation test. The model is a one-stage estimation procedure.

In all the correlation results, it is postulated that the likelihood of seeking health care was dependent on the level of awareness of PIH sign/symptoms and the complications associated with it.

5.5.1 Perceived benefits

In perceived benefits, the results established a statistical relationship between knowledge of PIH signs/symptoms or complications of respondents and health seeking behavior. The results showed a positive correlation ($r = 0.142$; $p = 0.02$). From analyses, 185 (92.5%)

respondents stated that reporting to the health centre early with PIH complications or signs/symptoms would prevent fatal complications.

This finding from the study supports the studies done by Goldstein et al. (2012) where the HBM was used to explore the factors associated with participating in the screening programme for Tay-Sachs disease among Jewish University Students. Those who perceived the benefits of the screening participated fully. From the results, 195 (97.5%) respondents said that reporting early to the health centre would assist pregnant women to get correct treatment.

This finding from the study supports the study done by Scott (2012) and Poon et al. (2010) where patients weighed the benefits of taking action to avert ill health. The results suggest that in generality the health seeking behavior of respondents is dependent on the intensity of awareness of PIH, and the ability to identify and associate certain signs/symptoms to PIH.

The significance of the person's relevance of a threat of illness has been repeatedly found to affect behaviour in many studies (Scott, 2012). It was observed that patients weighed the benefits against the cost of not taking action. This gives the investigator an idea that the HBM variables perceived susceptibility, perceived threat and perceived benefit are able to detect relationship between knowledge and health seeking behaviour among pregnant women with PIH.

5.5.2 Perceived seriousness with which pregnant women view PIH

In perceived seriousness with which pregnant women view PIH complications, the results showed a strong, positive correlation between perceived severity and health seeking behavior

(r=0.14, n=200, p=0.005). From few of the analyses under this category, 175 (87.5%) respondents stated that having reduced fetal movements is not normal in pregnancy. This finding from the study supports the study done by Atinga and Baku (2013) where perceived severity of the condition was a motivating factor for health care. A statistical linear association was observed between the respondents knowledge about pregnancy induced hypertension as a pregnancy complication and reporting to seek health care.

Those who knew about PIH complications tended to have very good behaviour while those lacking knowledge were more likely to be categorized as having a poor health care seeking behaviour. A significant linear association was observed between knowledge about severity of PIH and positive health seeking behavior (r=0.14, n=200, p=0.005).

Those who lacked knowledge tended to have a poor health seeking behaviour while those who were aware of PIH were more likely to be classified as having very good or satisfactory healthcare seeking behaviour. It was observed that women generally believed that they would be deprived of medical care if they divulged to a healthcare practitioner that they had visited a traditional healer before the consultation.

The possible effects of knowledge and sophistication as measured by education were of interest on the relationship between moderately perceived threats, perceived benefit, perceived susceptibility and knowledge of PIH. The results were consistent with those of researchers dealing with patients delaying in seeking treatment in the face of possible other symptoms of health conditions. Other socio-economic factors such as age, education, employment status, location and cultural practices exert important influences on the health seeking behavior of pregnant women.

5.5.3 Barriers to action

Concerning barriers to action, there was a strong, positive correlation between perceived barriers and health seeking behavior of pregnant women (r =0.10, n= 200, p = 0.000).One significant barrier to pregnant women health seeking behavior is the role of other significant others. From the results, 45 (22.5%) respondents said decision to go to hospital has to be made by husband or significant others.

This finding from the study supports the study done by Kisuule et al, (2013) where husbands' and family members played a major role in pregnant women health seeking behavior. In most African societies, the status of women is low and families are patriarchal, with men responsible for key decisions. The patriarchal family structure rests on men's control over property, this often extends to the wife as his possession.

It is within this cultural milieu of male-dominance that women enter into marriage, child bearing and child rearing in Northern Ghana. The patriarchal culture gives women little or no power to decide when they become pregnant, or how, when, and where to seek care during complications. While patriarchy is a culturally entrenched factor that subjugates women, lack of financial empowerment further compounds women's inabilities to determine where, when and how they may seek care during pregnancy.

From the results also, 32.5% respondents said they did not have money to pay for transport. This finding from the study supports the study done by Kisuule et al (2013) where transportation was a major factor influencing health care among women. Against the backdrop of endemic poverty, women are constrained from seeking care at the health centre or government hospital.

As observed in this study, the cost of transport is an additional cost to health care seeking. Distance to health facility is unequal, greatest in rural areas and tends to escalate the cost of care. From the results, 21.5% respondents said Faith based healers offer free treatment. This could be a possible barrier to women seeking health care in health centers.

Faith healers were preferred because they did not ask for payment before attending to the women. This finding from the study supports the study done by Safadi (2014) where women were said to patronize Faith based healers. Several factors influence which treatment sources one seeks when symptoms of a disease arise. The person alone or in consultation with others decides that the illness needs attention. Some of the factors are related to social structures such as kinship, social networks, gender and economic status. Others are related to belief systems which define how people conceptualize the aetiology of diseases.

5.5.4 Likelihood of taking action

The likelihood of pregnant women taking action if they knew those sign/symptoms or perceived those conditions as being severe was found to be statistically significant (r =1.12, n =200, p=0.003). Health seeking behaviour of respondents with PIH complications are a major concern to midwives as it puts the pregnant women at a higher risk of dying before getting the right care or have permanent ill health.

From the results, respondents with knowledge of PIH complications have good health seeking behaviour compared to those without knowledge, hence the likelihood of taking action to avert any serious consequences. From the study, before respondents would take action, they would have to consult for prayers or go through traditional rituals to allow, the body to undergone certain rituals. They seek advice from a family member or a

friend. If the problem does not resolve, they will finally attend a health clinic or see a herbalist.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of the key findings, draw conclusions based on the findings and presents recommendations for policy action.

6.2 Summary of results

Regarding knowledge of PIH, all the respondents had good knowledge on PIH since most of them scored above 50%. The study revealed that the modal age group was 31-40 years constituting 48% of all the respondents. Majority (57.5%) of the respondents were practicing Islam. The educational status of respondents was fairly balance. From the analyses, 15% respondents had 1-2 children, 55% respondents said they had 1-3 children, whilst 30% said they had 4 or more children.

Of particular concern was the fact that majority of the respondents did not know/ or perhaps did not consider certain sign/symptoms as PIH but normal happenings in pregnancy. From the analyses, 85.5% of the respondents considered PIH to be high blood pressure that occurs in pregnancy after 20 weeks gestation to 42 days post delivery. Also, 43.5% respondents sought health care only when their condition was serious, 38% respondents said they sought health care always whilst 18.5% respondents said when home management fails.

There was a strong, positive correlation between perceived severity and health seeking behavior of respondents, which was statistically significant at ($r= 0.14$, $n = 200$, $p = 0.005$). There was a strong, positive correlation between perceived barriers and health seeking behavior of respondents, which was statistically significant at ($r =0.10$, $n= 200$, p

= 0.000). There was also a positive correlation between likelihood of taking action and health seeking behavior of respondents, which was statistically significant at (r =1.12, n =200, p = 0.003).

The study used the Health Belief Model, which states that individuals weigh the potential benefits against the psychological, physical and financial costs when making decision to seek health care, as was reflected in these findings. In most African societies, the status of women is low and families are patriarchal, with men responsible for key decisions. The patriarchal family structure rests on men's control over property; this often extends to the wife as his possession. It is within this cultural milieu of male dominance that women enter into marriage, child bearing and child rearing in Ghana.

The patriarchal culture gives women little or no power to decide when they become pregnant, or how, when, and where to seek care during complications. While patriarchy is a culturally entrenched factor that subjugates women, lack of financial empowerment further compounds women's inabilities to determine where, when and how they may seek care during pregnancy. Thus the inability of most pregnant women to pay for transportation cost and health care services drives them to alternatives such as the use of local herbs and consultation with Faith healers and herbalist.

6.3 Conclusion

Based on the findings and discussions, the following conclusions are drawn from the study;

1. Knowledge level of respondents concerning PIH was high but this did not translate into identifying sign/symptoms of PIH.

2. Knowledge level on the causes of PIH was low (29.5%) among respondents in the study area. This suggests that respondents may be inadequate in terms of knowledge in putting in place preventive measures against PIH.
3. The health seeking behavior of respondents was good as 83% of them sought health care from health facilities. This finding is however not suggestive of complaisance, as this gain can be reversed within a couple of days.
4. Husbands play a role in the health seeking behavior of pregnant women especially at the place where health care should be sought.
5. There is a general delay among respondents in seeking health care with PIH. Majority only rush to seek care at the health facility when the condition is serious or when home management fails.
6. Educational level of respondent and occupation of respondent where identified as factors that determine place of seeking care and knowledge on the causes of PIH respectively.
7. PIH may be effectively controlled if the following could be done; early reporting to the nearest health facility, regular exercise by pregnant women, frequent rest by pregnant women and reduce salt intake when pregnant.

6.4 Recommendations

In line with the findings and conclusions drawn, the following recommendations are proposed to enable the Ghana Health Service, Funding Agencies, Policy makers and other health partners to design and implement appropriate and relevant strategies that will serve to improve PIH service utilization in the Tamale Metropolitan Assembly.

1. The Tamale Health Directorate should embark on public awareness and health education campaigns stressing the importance of pregnant women reporting to hospital early on observing PIH signs/symptoms to reduce maternal and perinatal mortality and morbidity related to PIH complications.
2. The Tamale Health Directorate should make use of the numerous FM stations to encourage husbands and faith based healers to dispel negative cultural beliefs attached to certain illnesses and allow their wives to seek early health care at health facilities.
3. The Tamale Health Directorate should conduct periodic staff orientation, especially for newly posted Midwifes and CHOs to refresh their skills in providing PIH service.
4. Midwifes should encourage pregnant women to take measures to reduce PIH signs/symptoms by restricting salt intake, taking time to rest and doing less vigorous exercise.
5. Midwives in the various health centres in the Tamale metropolis should increase their health education activities at the ANC service centres to dispel the myths attached to the perceptions that certain conditions such as generalized oedema and reduced fetal movements are normal happening in pregnancy.
6. Health partners should encourage the mass media in the Tamale metropolis to contribute to the fight against PIH by intensifying education on how pregnant women could identify all PIH signs / symptoms and also raise the importance of seeking health care in health centres.

6.5 Implications of the study and further research

This study focused on assessing the awareness and health seeking behaviour of pregnant women about pregnancy induced hypertension in the Tamale Metropolis. This study would be an addition to the public health research particularly in Ghana where scientific research in general, is important. The findings of the study reflected moderate knowledge of PIH signs/symptoms issues among the respondents and this has influenced their health seeking practices. Thus, major stakeholders such as opinion leaders, family heads, health centers, hospitals and DMHT can use the information to design evidence based interventions for this category of respondents in their service areas. Similarly, this study brought forth the common places of utilization of health care by pregnant women. The study also identified social importance of other significant figures in the health seeking behaviours of pregnant women and belief associated with ascertains signs/symptoms associated with PIH.

Addressing such issues and beliefs through community and cultural events could be useful in promoting health seeking behaviours of pregnant women especially at the health centre. This information could motivate NGOs and community based organization and Ghana government to design and implement programs which could address such issues. Furthermore the study highlighted almost non existing efficacy of the potency of drugs used to treat signs/symptoms associated with PIH in Faith based healers' places and herbalist camps/homes, which explained the need of evaluating such existing drugs. Further research is recommended to identify the weaknesses in structure and efficacy of the drug used by Faith based healers and Herbalist in treating PIH signs/symptoms.

Information from this study could contribute to the body of knowledge of the health discipline.

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APPENDIX I

University for Development Studies

School of Allied Health Sciences

Tamale Campus

Questionnaire

Assessing the awareness and health seeking behaviour of pregnant women about pregnancy induced hypertension in the Tamale Metropolis

Informed consent

My name is……. am a student of the above University and am carrying out this research as part of an academic work towards the awards of an Mphil. Could you please spare me few minutes of your time and respond to the items below as honestly as possible. Your knowledge on pregnancy induced hypertension complications and the care which you seek when you notice the complications will be recorded. This will provide valuable information for improvement for the future planning and implementation of health education for mothers with pregnant induced hypertension. You have the right to withdraw anytime. The services you receive and your relationship with the health care providers will not be affected in any way.

All study data will not include your name. **Date**:……/……./……..

Signature of interviewer:_____

Section A: Socio-demographic characteristics of respondents

1. What is your age? (years)……..……
2. Religion affiliation a. Christian ( ) b. Muslim ( ) c. Traditionalist ( ) d. Others (specify)……..

3. Marital status a. Married ( ) b. Single ( ) c. Widowed ( ) d. Divorced ( ) e. Separated ( )
4. Occupational status? a. Farming ( ) b. Petty trading ( ) c. Public/civil servant ( ) d. others (specify)……
5. Parity a. 1- 2 ( ) b. 1-3 ( ) c. 4+ ( )
6. Highest education level a. Non-formal education ( ) b. Junior High School ( ) c. Senior High School ( ) d. Tertiary education ( ) e. others (specify)…….

Section B: knowledge level regarding PIH

7. Have you ever heard ofPIH? a. yes ( ) b. no ( )
8. If yes where? (**can tick more than one**) a. Health centre ( ) b. School ( ) c. Market ( ) d. Friend ( ) e. Workshop ( )
9. If yes what is PIH? a. High blood pressure that occurs in pregnancy after 20 weeks gestation to 42 days post delivery ( ) b. Blood pressure which starts when one is not pregnant ( ) c. both ( ) d. none ( )
10. Have you ever suffered from PIH before? a. yes ( ) b. No ( ) c. do not know ( )
11. How often do you visit the health centre? a. Often ( ) b. Rare ( ) c. Others (specify)…..
12. Which of this causes PIH? a. real cause not known ( ) b. stress ( ) c. witchcrafts ( ) d. Others (specify)……
13. Do you know any sign and symptom of PIH? a. yes ( ) b. No ( ) c. do not know ( )
14. If yes, which of the following are signs and symptoms of PIH?

Section C: Signs and symptoms of PIH

Variables	Agree	Disagree	Neutral
Rapid weight gain			
Swelling of face and fingers			
Reduced urine output			
Reduced fetal movements			
Deaths of fetus inside the uterus			
Death of mother			
Abdominal or epigastric pain			
Confusion			
Drowsiness/feeling sleepy			
Continuous frontal headache			
Very high blood pressure			
Nausea and vomiting			
Generalized body weakness			

15. When you have any of these signs and symptoms where do you seek health care? a. health centre ( ) b. herbalist ( ) C. Mallam ( ) d. pastors ( ) e. others (specify)……

16. When do you seek treatment of these signs? a. When condition is serious ( ) b. all the time ( ) c. any time ( ) d. others (specify)……

17. Do know complications of PIH? a. yes ( ) b. no ( ) c. do not know ( )

18. If yes, mention them……..

Section D: Self-care management of PIH among pregnant women

19. Do you think controlling blood pressure can help to manage PIH? a. yes ( ) b. no ( ) c. do not know ( )

20. Which of these do you think can aid in reducing PIH? a. regular ANC visit ( ) b. see a native Doctor ( ) c. see a herbalist ( ) d. good diet ( )

21. What is your preferred place of health care if you have PIH signs and symptoms?

a. Health centre ( ) b. Spiritual centre ( ) c. others ( )

Section E: Health Seeking Behaviour

Perceived benefits

I. Fatal complications are prevented a. yes ( ) b. no ( )

II. Convulsions can be prevented a. yes ( ) b. no ( )

III. My baby can be delivered quickly before it dies a. yes ( ) b. no ( )

IV. My condition is monitored by a nurse/doctor a. yes ( ) b. no ( )

V. I am given correct treatment a. yes ( ) b. no ( )

VI. My pregnancy can be prolonged to allow my baby to grow a. yes ( ) b. no ()

Section F: Perceived seriousness with which pregnant women view PIH complications

I. Having a continuous head ache is nothing to worry about a. yes ( ) b. no ( )

II. Blurred vision can be ignored, resolves on its own a. yes ( ) b. no ( )

III. Reduced urine output means a serious complication a. yes ( ) b. no ( )

IV. Having reduced fetal movements is normal in pregnancy a. yes ( ) b. no ( )

V. Generalized oedema is part of normal happening in pregnancy a. yes ( ) b. no ( )

VI. PIH cannot kill my baby a. yes ( ) b. no ( )

Section G: How pregnant women control PIH

22. What should pregnant women do to control PIH? a. visit the ANC ( ) b. regular exercises ( ) c. Take drugs as prescribed () d. Take balanced diet with low salt ( ) e. see a native doctor ( )

23. What are the advantages of going to hospital or clinic early on noticing PIH complications? (**Tick more than once**) a. will be given correct treatment ( ) b. condition is monitored by a nurse/doctor ( ) c. fatal complications are prevented ( ) d. convulsions can be prevented ( ) e. baby can be delivered quickly before it dies ( ) f. pregnancy can be prolonged to allow the baby to grow ( )

Section H: Likelihood of taking Action

24. What will motivate you to seek medical treatment immediately on noticing PIH complications?……

Section I: Barriers to action

I. The reception at the hospital is poor/unfriendly health personnel a. yes ( ) b. no ( )

II. Waiting time to get treatment is too long a. yes ( ) b. no ( )

III. Some of the diseases are not for hospital treatment a. yes ( ) b. no ( )

IV. I come to hospital when home treatment has failed a. yes ( ) b. no ( )

V. Faith healers offer free treatment a. yes ( ) b. no ( )

VI. I did not have money to pay for transport a. yes ( ) b. no ( )

VII. My family does not use medical treatment a. yes ( ) b. no ( )

VIII. Decision to go to hospital has to be made by husband or significant others a. yes ( ) b. no ( )

Thank you

APPENDIX II

Focus Group Guide for Pregnant women

1. Please what do you know about Pregnancy induced hypertension?
2. Can you please share with me some of the causes of PIH?
3. Can you please tell me some of the signs of PIH?
4. Do know the complications of PIH?
5. Where do pregnant women go first to seek management of PIH in your community?
6. Which place is the most frequent place visited?
7. Are those identified places effective in managing PIH?
8. How can pregnant women manage Pregnancy Induced Hypertension?
9. Where do you think is ideal for the care and management of PIH?
10. Can you give reasons for your choice?
11. Give the importance of hospital management of PIH?
12. Can you share with me some of the suggestions for controlling and prevention of PIH?

Thank you.