

**INVESTIGATING HEALTH EDUCATION NEEDS OF  
PREGNANT WOMEN IN THEIR FIRST ANTENATAL VISIT  
AT PRIMARY HEALTH CARE FACILITIES IN KHAYELITSHA**

**BY**

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## DECLARATION

I Thabani Mishack Noncungu, hereby declare that this thesis on “**Investigating health education needs of pregnant women in their first antenatal visit at primary health care facilities in Khayelitsha**”, submitted to the University of the Western Cape, is the outcome of my work, that it has not been presented for any degree or examination in any other university and that all sources used or quoted have been indicated and acknowledged accordingly by a complete references.

Thabani Noncungu

Signature:



Date: 19 April 2017

## DEDICATION

I dedicate this master's degree to Jesus Christ, my savior and my late mom Noxolo Adelaide Noncungu, and my late brother Anele Noncungu. My brothers and sister: Lufefe, Xolisa, Lindelani, Nokuzola Mthimkhulu Mzayiya and all the Gospel Mission Church members have all been a pillar of strength to me during the masters' journey.



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## **KEY WORDS**

Pregnant women

Antenatal care

First antenatal visit

Maternal health care

Health education

Health education needs

Health information needs

Health care professionals

Primary health care facility

Researcher-administered questionnaire.



## ABSTRACT

The use of health education during antenatal care of pregnant women has been a commonly used strategy in improving maternal health worldwide. However the health education strategy sometimes does not prove to be effective in promoting maternal health, especially in Sub-Sahara Africa.

### **Aim**

The aim of the study was to investigate the health education needs of pregnant women during their first antenatal visit at the primary health care facilities in Khayelitsha. The study intended to use three research objectives that are guided by research questions.

### **Methods**

The study used a descriptive quantitative design with the researcher-administered questionnaire which was administered to 240 pregnant women in two primary health care facilities. A systematic sampling of primary health care facilities was done and questionnaires were given to respondents who met the study inclusion criteria. The respondents' questionnaire consisted of items that were adapted from Shieh, McDonald & Ke, (2009). Data was entered into SPSS v 21 and analyzed using measures for central tendency, non-parametric tests as well as a multiple regression.

### **Results**

The 240 respondents represented low-income communities of Cape Town. The respondents had high health education needs compared to other studies, and low use of the health information sources. All the respondents experienced some form of health information barriers.

The majority of pregnant women preferred to receive health information from the doctors, nurses and other health professionals. The demographic characteristics of the respondents (maternal age and maternal medical status) were the strong predictors for health information seeking.

### **Conclusion and recommendations**

The study findings showed that the health information needs of first antenatal care visiting women were high and unique to different women. This study finding suggests that health education needs of pregnant women might be addressed through the tailoring of provided health education to meet individual demands. The respondents indicated low health information seeking ability and most health information barriers were experienced around the reachability of health information on media and from the health information centers (PHC and community activities).

The recommendations are when health care professions provide health education they need to consider the maternal demographics so they can tailor their health education in such a way that it accommodates pregnant women.

## ABBREVIATIONS

WHO	World health Organization
UNICEF	United
MDG	Millennium Development Goals
PHC	Primary Health Care
ANC	Antenatal care
PHINS	Pregnancy Health Information Scale
PHIBS	Pregnancy Health Information Barrier Scale
PHISS	Pregnancy Health Information Seeking Scale
SPSS	Statistical Package for Social Science





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## Chapter One

### INTRODUCTION AND BACKGROUND OF THE STUDY

#### 1.1 Introduction

Pregnancy is considered a potentially risky period for all pregnant woman worldwide (Nikiema, Beninguisse & Haggerty, 2009). A total number of 532 000 maternal deaths were reported worldwide in 1990, which increased to 303 000 maternal deaths in 2015 (WHO, 2015), total of 216 maternal deaths in every 100 000 live births worldwide (WHO, 2015), with the provision of antenatal care services to pregnant women, which resulted in the reduction of maternal deaths, maternal mortality has remained a major challenge to health systems worldwide (Teferra, Alemu & Woldeyohannes, 2012).

Antenatal care attendance during pregnancy is important for pregnant women to receive a wide range of health promotion and health prevention information (Ghosh-Jerath et al. 2015). Antenatal care is a widely used preventive health care service in maternity, with the potential to improve health care outcomes for women and infants (Heaman et al. 2014). Furthermore, the importance of antenatal care is recognised in the maternal and perinatal period as well as to improve the survival of the foetus (Fried et al. 2013). A study showed that the health education offered to pregnant women results in sustained improvement in knowledge of new-born care (Weiner et al. 2011).

Antenatal care is defined as a unique routinely preventative health care service offered to pregnant women of reproductive age in public and private health care facilities (Hofmeyr & Mentrop, 2015). Antenatal care provides an opportunity of health information exchange between health care professionals and pregnant

women in identifying the existing risk factors that may impact the current pregnancy (Hanson, 2008; Pell et al. 2013). The effective use of antenatal care service is regarded as one of the most significant strategies to reduce maternal mortality (Chemir, Alemseged & Workneh, 2014; Gosh-Jerathet al. 2015).

Health education, as part of antenatal care service is an important practice in creating an environment that supports pregnant women in discussing their feelings and concerns of birth and parenthood with their counterparts (Brixval et al. 2014). Moreover, health education in antenatal care services increases the chances of maternal health services identifying and reducing the risks of maternal deaths (Babalola & Fatusi, 2009; WHO, 2014).

The World Health Organisation (WHO) defines health education as any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes towards health (WHO, 2013). Health education plays an important role in antenatal care with its contribution towards positive post pregnancy outcomes in pregnant women, especially for first time mothers (Pasinlioglu, 2003).

The first antenatal care visit is a valuable opportunity to influence the health and well-being of the mother and child during pregnancy, birth and beyond (Maher, Spurling & Skew, 2014). It is especially valuable in low-income countries like South Africa where the health care system is still strained from the effects of the racially-based apartheid system (Maher, Spurling & Skew, 2014).

Existing evidence shows that when pregnant women receive adequate and appropriate health education, their antenatal care visits increase, which can decrease preventable complications. In addition, the possibility of institutional



delivery is four times higher for those that did not receive adequate health education (Nikiema, Beninguisse & Haggerty, 2009).

However, the literature indicates that many women receiving antenatal care repeatedly state that they do not benefit from information, education and communication, which together form one of the primary purposes of antenatal care (Anya, Hydera & Jaiteh, 2008). One of the reasons identified are that health care professionals are reported to spend most time discussing topics such as substance abuse and limit the time spent on discussing other health topics that needs to be covered during antenatal visits (Vonderheid, Norr & Handler, 2007). However, the authors further reported that a certain number of pregnant women were well informed about some of the health topics discussed during their antenatal care visit and did not see the need to discuss them again (Vonderheid, Norr & Handler, 2007).

The concerns and complaints that pregnant women expressed about pregnancy health information that they received during antenatal visit, made them seek multiple sources to supplement the dissatisfying antenatal care health information (Dako-Gyeke et al. 2013). These concerns and complaints that pregnant women expressed, left them feeling that their lives were overwhelmed with stress and fear and were unable to make good choices for their coming babies (Nolan, 1997). The situation is worse in uneducated women who repeatedly have low antenatal care use and poor pregnancy outcomes (Myer & Harrison, 2003; Marrisson & Jutting, 2005; Ali et al. 2010).

To further explore the issue of health education in pregnant women, the researcher aimed to investigate the health education needs of pregnant women in antenatal care, and specifically first time visitors, and hopes to contribute to the improvement of antenatal care in low-income income communities of Cape Town. Using the

following objectives which are namely to describe the pregnancy health information needs of pregnant women on their first antenatal visit, describe the health information barriers for pregnant women on their first antenatal visit and describe the health information sources used by pregnant women on their first visit.

## **1.2 Background**

In September 2000, a global initiative to reduce the number of maternal deaths worldwide was developed following a meeting of state leaders from different countries, with the goal of reducing the Millennium Developmental Goal number 5 by 75% by 2015 (Alkema et al. 2016). Since the Millennium Developmental Goal declaration, substantial progress has been made in improving maternal and child health by the global community (Black et al. 2016).

Even with the 44% global decrease of maternal deaths between 1990 and 2015, approximately 830 pregnant women die every day worldwide due to complications during pregnancy or childbirth (WHO, 2015). Most of the decrease in maternal deaths is from developed countries, not Sub-Saharan Africa countries (Somma-Pillay et al. 2015). The risk of maternal death is 1 in 54 pregnant women in developing countries compared to 1 in 4900 in developed countries (WHO, 2015).

Antenatal care is one of the most common health interventions directed at pregnant women in many countries as part of the initiative (Alexander & Kotelchuck, 2001; Cunningham et al. 2005). Antenatal care services are not new in health care South Africa and these services have been available, free of charge, since the 1994 post-apartheid era, to all pregnant women (African National Congress, 1994; Department of Health, 2007; Naledi, Barron & Schneider, 2011). However, antenatal care services have not been fully utilised by all pregnant women in the last 10 years,

especially in developing countries (Pallikadavath, Foss & Stones, 2004; Magadi, Madise & Rodrigues, 2005; Ngomane & Mulaudzi, 2010). As a result, the South African maternal mortality ratio of 138 maternal deaths per 100 000 live births is still among the highest in developing countries and other middle income countries (WHO, 2015). When South Africa is compared with developed countries like Australia which has a maternal mortality rate of only 6 maternal deaths per 100 000 live births, more work is needed to reduce maternal mortality (WHO, 2015), making the maternal health services a priority to all the health care stakeholders involved.

Knowledge about pregnancy and childbirth was traditionally gained through the wisdom of family members, mainly women, print media and through the practical experience of helping other extended family members (Renkert & Nutbeam, 2001; Herrel et al. 2004; Svensson, Barclay & Cooke, 2005). However, with changes in family structures, women's increased participation in higher education and the workforce, family planning strategies and the weakening of family networks in the western culture, the understanding of pregnancy has changed and some of the informal methods of obtaining health information are not relevant any longer (Bondas, 2002). These changes emphasise the importance of formal, organised antenatal education as the primary mechanism through which pregnant women develop their knowledge and skills (Nolan, 1997). A lot of pregnant women are more likely to depend on antenatal education; many pregnant women often work until close to the birth and they don't live in the same area as their immediate or extended family (Svensson, Barclay & Cooke, 2006). All these factors have changed pregnant women's information needs. It is important that these challenging needs are investigated, specifically in this South African context.

### **1.3 Problem statement**

Pregnancy is a period of high risk for a woman that is associated with suffering, ill-health and even death, and antenatal services provide a unique opportunity to manage and decrease these risks (Gudayu, Woldehannes & Abdo, 2014). One of the main strategies used in antenatal care is health education to provide relevant health information to prevent these risks (Agus & Horiuchi, 2012; Pell et al. 2013).

Pregnant women have access to different kinds of health education from different information sources (Berman, 2006; Grimes, Forster & Newton, 2013). However, access to various information sources does not guarantee an understanding of the information when there is health illiteracy that influences the information seeking strategies, subsequent health knowledge and behaviour (Carolan, 2007; Shieh, McDonald & Ke, 2009). In addition, there are concerns regarding the lack of comprehensive health education to address the information needs of pregnant women in low resource settings where health risks are high (Moat et al.2013).

Women complain that health information given to them is insufficient or does not address their health information needs during pregnancy (Ohlendorf & Weiss, 2012). The unaddressed health information needs causes frustration in pregnant women, a loss of interest in antenatal visits and leads to women seeking information from other sources which are sometimes less reliable (Ohlendorf & Weiss, 2012). The situation is worsened when at a first antenatal care visit, which should be a valuable opportunity to influence the health and well-being of the mother and child during pregnancy, birth and beyond, good health education does not occur due to health care professionals' lack of knowledge and skills in caring for pregnant women, especially in low-income countries (Maher, Spurling & Askew, 2014; McCarthy et al. 2015).

This study aimed to investigate the health information requirements of pregnant women and more specifically, the health education needs of pregnant women during their first antenatal visit at primary health care facilities in Khayelitsha, a rural township of Cape Town.

#### **1.4 Significance of the study**

This study can add value to pregnant women in improving their health, as a better understanding of pregnant women's health educational needs will contribute to the knowledge health care professionals have in providing health education.

The findings may assist universities and other nursing colleges in planning midwifery courses to ensure that appropriate health education and health promotion skills are included in the curriculum.

The findings may help policy developers in primary health care facilities to plan strategies to address the health education of pregnant women as there are few studies covering this problem in the low-income communities of the Western Cape.

This study will hopefully serve as a baseline in understanding the health education needs of pregnant women in low-income communities of the Western Cape, particularly the Cape Town Metropole District.

#### **1.5 Summary of the chapter**

This chapter has presented an outline of the context of the study by providing an introduction and background to the importance of health education in antenatal services. It has drawn attention to the slow progress in decreasing maternal deaths, the use of health education as a preventative strategy in antenatal services and the need to describe the health education needs of pregnant women in a low resource setting. It has identified that a problem exists - the lack of knowledge as to what the

health education needs are in pregnant women, specifically first time visitors to antenatal clinics. The significance of the proposed study has been established.

In chapter two, the literature relating to health information needs, health education, health information-seeking behaviors, health information sources and health information barriers will be examined.



## Chapter Two

### LITERATURE REVIEW

#### **2.1 Introduction**

The effective use of antenatal care service during pregnancy is regarded as one of the most common significant strategies that help in reducing maternal mortality (Chemir, Alemseged & Workneh, 2014; Gosh-Jerath et al., 2015). The recent decrease in global rates of maternal mortality is an indication of the fact that pregnant women are responding positively to antenatal care offered to them (WHO, 2015). Recently, published research reported that the overall objective of antenatal care was to assist pregnant women with health care services like health education, routine dietary supplementation, detecting complications to prevent mortality (Hofmeyr & Mentrop, 2015).

However, there is debate about the considerable gap between the delivered health education and the background factors of pregnant women (Hildingsson et al. 2013). The provision of much needed informational support to pregnant women might impose challenges, especially when there are resourcing and funding problems leading to health care professionals packing too much health information into short appointments, leaving little time for discussion or fostering trusting relationships (Royal College of Midwives, 2013).

The challenges faced by health care professionals could be compounded by the limited understanding of the information needs of mothers and recognising information seeking as a process of social building (Pettigrew et al. 2001).

This chapter will review the health education needs of pregnant women at their first antenatal visit. It will also review the different sources of health information and their

accessibility by pregnant women. The various barriers preventing pregnant women from accessing health information will also be reviewed. However, the reviewed literature on this topic had few studies in low-income countries provide a broader understanding of the undertaken study.

## **2.2 Literature sources**

This chapter explores relevant literature that focuses on health information needs. Publications, journal articles, books, policy statements, research organisations (e.g. WHO, UNICEF) and reports on health education needs of pregnant women were searched and accessed electronically using the following search engines and database: Google Scholar, PUBMED, CINAHL and Science Direct. During the literature search, the following keywords/phrases were used: pregnant women, antenatal care, health information needs, health education, information needs sources, health information barriers, pregnancy information-seeking behaviors.

## **2.3 The current status of safe childbirth**

There is urgent need for interventions in South African health, education and social development sectors in order to reduce the prevalence of maternal mortality and to provide better antenatal care for pregnant women (Reddy, Sewpaul & Jonas, 2016). One of the major determinants of the leading causes of maternal death includes poor and/or delayed antenatal clinic attendance. Pregnant women that started antenatal care attendance early and attended frequently have been shown to be more likely to be assisted during delivery by a skilled health care professional compared to their counterparts that initiated antenatal care late and only had a few visits (Rockers et al. 2009). Early and frequent attendance of antenatal care services is linked to safe delivery or low maternal mortality rates.



Safe childbirth is achieved when pregnant women are exposed to health education information on the risk factors that must be avoided in order to achieve a positive maternal outcome (Gross et al. 2012). Recent literature has revealed that the higher the level of health care obtained during pregnancy, the higher the chances of safe delivery by pregnant women are (Gudayu, Woldeyohanne & Abdo, 2014). Sharma, Pati & Chakravarty (2013) have highlighted the need to strengthen the health education element of care in the healthcare delivery system to cater for underprivileged pregnant women in order to bring about a change in attitude and practice among this group.

However, in many sub-Saharan African countries, the reduction of maternal mortality has been slow and remains a challenge due to the lack of decision-making power among pregnant women within the family and inequities in the provision of essential maternal health care interventions (Friberg et al. 2010). The slow progress in reducing maternal mortality is also influenced by the low motivation of pregnant women towards antenatal care. Most decisions about maternal health care are taken by family members and there are high reports of dissatisfaction on the rendered maternal health care (Rahmani & Brekke, 2013). In addition, these challenges are compounded by the frustrations of health care professional due to the poor working conditions, corruption and poor management of the relevant institutions (Rahmani & Brekke, 2013).

#### **2.4 Factors influencing the childbirth status of pregnant women**

Under the factors influencing the childbirth status of pregnant, four factors are discussed, namely the socio-demographic status of pregnant women, poor education of pregnant women, late initiation of antenatal visit and information barriers of pregnant women.

#### **2.4.1 Socio-demographic status of pregnant women**

The widespread poverty and social injustice that restricts access to health care is historically attributed to the racial based system of apartheid (Fried et al. 2013). The apartheid system created differences in maternal education, income status, socio-economic backgrounds, less contact with care providers and social exclusion that are associated with delayed presentation for pregnancy care (Raleigh et al. 2010). Hence, the provision of antenatal education to pregnant women is dependent on culture and the organisation of the healthcare system used (Brixval et al. 2014). This explains why some pregnant women would have good timely antenatal attendance and others not.

#### **2.4.2 Poor education of pregnant women**

Poor education in pregnant women is a common factor that affects pregnancy and childbirth. This can create vulnerability and increase the chances of negative outcomes (Karlsen et al. 2011). Pregnant women that are poorly educated are more likely to die during pregnancy or childbirth than their educated counterparts who value the importance of antenatal education (Karlsen et al. 2011). Poorly education pregnant women, in most cases are unaware of the benefits of antenatal care. This results in them not attending antenatal classes and therefore they do not obtain valuable health information (Anyait et al. 2012).

#### **2.4.3 Late initiation of antenatal visit of pregnant women**

The 2015, global antenatal care access for pregnant women by skilled health care professionals was at 85% (UNICEF, 2016). On average, six in every ten (58%) pregnant women managed to receive at least four antenatal care bookings during pregnancy (UNICEF, 2016). A normal antenatal care booking period for pregnant

women, per the World Health Organisation (WHO) recommendations, is during the first trimester of pregnancy (1-13 weeks) (Gudayu et al. 2014). However, the average gestation age of pregnant women at their first antenatal attendance is approximately 7 months (27.9 weeks), nearly more than 5 months (20 weeks) of gestation later than recommended (Magadi, Madise & Rodrigues, 2000; Kisuule et al. 2013; Myer and Harrison, 2003).

Studies revealed the importance of early antenatal care booking in insuring healthy outcome for both the mother and her baby (Dim & Onah, 2007; Weiner et al. 2011). However, for many reasons, such as the restricted autonomy for pregnant women to make personal decisions about health care service antenatal care booking does not usually happen (Ravindran, 2012). Moreover, the quality of antenatal care services that include health education might have an influence on the utilisation of antenatal care service, leading to infrequent or late first visits to antenatal care (Kisuule et al. 2013). Subsequently, this makes the potential of health education less effective during antenatal care attendance of pregnant women since the mother will either be late or arrive late on antenatal booking day (Kisuule et al. 2013)

#### **2.4.4 Information barriers of pregnant women**

Pregnant woman in most cases do not receive adequate antenatal care due to challenges caused by a range of barriers. The barriers experienced pregnant women differ by economic status, education levels, and access to a health care facility (Titaley, Dibley & Roberts, 2010).

The most common barriers experienced by pregnant women in visiting antenatal care services are: financial limitations, the absence or perceived absence of a major health problem during pregnancy, difficulties in reaching government health facilities

especially in rural areas, restrictions from husbands or mother-in-law's, a perceived lack of information about antenatal services, no experience of antenatal services during previous pregnancies, experienced or perceived non-availability of staff and/or services at the health centre and the limited opening hours of the health facility (Nisar et al. 2016).

Nasar and his colleagues (2016) further recommended the need to formulate and implement a set of interventions that include community awareness campaigns, influencing the behaviour of husbands and/or mothers-in-law to encourage pregnant women to access antenatal services, provision of travelling costs or improvement in transportation facilities, the availability of skilled healthcare providers, free or subsidised medicines and the adjustment of working hours of public health facilities.

## **2.5 The delivery of antenatal care in primary health care facilities**

The procedure of offering antenatal care in primary health care facilities in South Africa is the same as in many other countries, where it is mainly provided within the primary health care sector, with midwives acting as the primary care givers (Hildingsson et al. 2013). In addition, only in complicated cases would pregnant women be referred to an obstetrician either in a secondary or tertiary hospital. Antenatal care guidelines are developed to provide guidance on early commencement of care, the number of visits and content of routine care (Nisar et al. 2016). The services that are provided during antenatal care have been a focus since 1989. A paper produced by an expert panel from 1989 titled "*Caring for our future*" argued that the focus on antenatal care services should not only be on the procedures that are needed during pregnancy but should include health education. The panel further recommended that suitable health education topics should include physical and emotional changes, foetal growth and development, avoidance of

dangerous medication and the need to know the danger signs of pregnancy in the first antenatal visit for different gestational ages. This expert panel of 1989 is the first board of delegates that included different stakeholders of health personnel to engage with the content of antenatal care (Mortimer et al. 1991).

The South African National Department of Health has for many decades followed the schedule of routine antenatal visits implemented in the UK in the 1920s (Hofmeyr & Mentrop, 2015). The South African antenatal guidelines are determined by the National Department of Health and distributed to Provincial Departments of Health for amendments and implementation. The National Department of Health further state that all pregnant women from their first booking should be given health education according to their own level of understanding. The schedules of pregnant women at booking (first visit) are to give health education about how the baby develops during pregnancy, nutrition and diet that include supplementation and further discussions on all antenatal screening, drawing up blood for rapid testing (HIV and AIDS) and lab testing (Department of Health, 2008).

## **2.6 The health education needs of pregnant women on first antenatal visit**

According to the WHO, antenatal care is a preventive and promotive health service provided to pregnant women, with the goal of preventing, detecting and alleviating the health problems that affect mothers and babies during pregnancy (WHO, 2013). The first antenatal visit however, is used to identify and differentiate between pregnant women who may require normal care from those that have specific risk factors that require special care (WHO, 2013). In order for antenatal care interventions to work successfully, it is vital for pregnant women to make sure their first antenatal clinic visit takes place as early as possible in the first trimester (Amoakoh-Coleman, 2016). Early attendance of first antenatal visit by pregnant

women enables health care professionals to determine correctly the expected delivery date, ascertain the baseline health limits such as blood pressure and most importantly, the provision of information, support and guidance to pregnant women (Maher, Spurling & Askew, 2014). A significant function is to offer health education in a manner that will significantly produce favourable maternal and infant outcomes (Agus & Horiuchi, 2012).

### **2.6.1 The lifestyle education needs of pregnant women**

The success of the pregnancy period, labour process and post-natal period is dependent on the all-important first antenatal visit, because on the first antenatal visit pregnant women receive information on different health topics that are vital for the whole duration of pregnancy (Martin & Robb, 2013).

Living a healthy lifestyle throughout pregnancy is important (Lieferman, Sinantra & Huberty, 2013). A healthy lifestyle during pregnancy is a result of positive behavioural factors that include physical activity, proper nutrition and healthy weight gain as well as smoking cessation and stress management (Lieferman, Sinantra & Huberty, 2013). Healthy lifestyle habits during pregnancy are the main components that affect both the health of the pregnant women and the health and development of the foetus (Saravanan & Yajnik, 2010). Healthy lifestyle practices by pregnant women should start before pregnancy and continue until the pregnancy period is over (Arrish, Yeatman & Williamson, 2014).

Regrettably, a majority of pregnant women struggle to engage with the expected healthy behaviours (Lieferman, Sinantra & Huberty, 2013). The struggle to lead a healthy lifestyle could be due to a lack of knowledge regarding antenatal health behaviours. Pregnant women often depend on family members and friends for

advice and as a result often receive incorrect or inadequate information. This has in turn been associated with inadequate development of the foetus, infant low birth weight and an increased risk of developing chronic diseases in the offspring later in life (Wilkinson & Tolcher, 2010).

Previous studies show that more research is needed to discover what the healthy behaviours of pregnant women are so that they can be assisted in strengthening positive behaviours and discouraged from negative behaviours (Furness et al. 2011; Stengel et al. 2012; Lieferman, Sinantra & Huberty, 2013).

### **2.6.2 The psychosocial needs of pregnant women**

Historically, the emotional wellbeing of pregnant women has not been given as much attention as their physical wellbeing during antenatal visits (Manikkan & Burns, 2012; Glover, 2013). Consequently, the psychosocial factors continue to have an impact on the outcome of the child (Glover, 2013). Pregnant women with poorer levels of social support are prone to experience more symptoms of stress, depression and anxiety than their counterparts who reserves good social support system (Glazier et al. 2004). Moreover, stress, depression, anxiety and domestic abuse are the psychosocial factors that contribute to contrary outcomes in pregnancy (McMahon et al. 2013; O'Connor et al. 2002; Pawlby et al. 2011; Kleinhaus et al. 2013). The contrary outcomes in pregnancy that are due to psychosocial stressors during are associated with adverse neuro-developmental, temperamental and behavioural outcomes in offspring (Sandman & Davis, 2012).

Psychosocial stresses such as unplanned pregnancies, testing for HIV, intimate partner violence and depression are considered strong predictors of suicide ideation during pregnancy and the postnatal period (Gavin, 2011; Rochat et al. 2013), making

psychosocial stressors an important maternal issue that needs attention during pregnancy. However, there is a scarcity of research on psychosocial stressors of pregnant women in low and middle income countries, despite the fact that there are significant risks of suicide attempts arising from psychosocial stressors (Manikkom & Burns, 2012). Hence more research is needed on psychosocial stressors during pregnancy.

### **2.6.3 The medication needs of pregnant women**

Widnes, Schjott and Granas (2012) in their publication have shown that pregnant women are more willing to accept medical information provided, compared to non-pregnant women because of the value they attached to the clinical visit and their expectation of a successful childbirth. Nonetheless, there is less prescription in terms of medications for pregnant women compared to non-pregnant women (Feijen-de Jong, 2013). This reflects the necessary unwillingness to prescribe medication during pregnancy, because of the possible teratogenic effects of medication use during pregnancy (Feijen-de Jong, 2013).

### **2.7 The importance of the first antenatal care visit for health education**

Antenatal care is an entry point for pregnant women to receive a broad range of information on health promotion and preventative care (Gosh-Jerath et al. 2015). Maternal health care service in antenatal care is potentially one of the most effective health interventions for preventing maternal morbidity and mortality, particularly in places where the general health status of women is low (Birmeta et al. 2013). Antenatal care is therefore an important service to both the health of a pregnant woman and her unborn baby (Lau et al. 2014).



The first antenatal care visit for pregnant women is recommended in the WHO model to occur in the first trimester of pregnancy (1-12 weeks) (Gudayu, Woldeyohannes & Abdo, 2014). However, as previously discussed, the utilisation of the first antenatal care visit does not always occur as recommended due to socio-economic factors such as; pregnancy confirmation time, health conditions of pregnant women; and the availability, affordable and acceptable levels of antenatal care (Silal et al. 2012). Moreover, health education to pregnant women might become less effective due to a late first antenatal care visit and even worse when a pregnant woman arrives late on the scheduled day (Kisuule et al. 2013).

## **2.8 Poor impact of health education currently provided**

The provision of health education to pregnant women during antenatal care has taken place over many decades (Luyben et al. 2005). Moreover, health information disseminated to pregnant women is done through health education sessions that occur during antenatal visits which are facilitated by health care professionals (Naanyu et al. 2013). Previous research shows that the health education practice can be used to increase the knowledge of pregnant women and their families, and especially those that come from poor socio-demographical backgrounds (Pasinllglu, 2003; Ustunsoz et al. 2010). However, research indicates that less than 66% of pregnant women could recall the discussion on childbirth or family planning they had with their health care providers, while the other third of pregnant women reportedly benefited from information, education and communication provided during antenatal care (Tran et al. 2011; Tran et al. 2012).

A study conducted by (Hildingsson et al. 2013) described dissatisfaction among pregnant women concerning the health education given on labour, childbirth,

postnatal care and how they can involve their partners or husbands during the prenatal period.

## **2.9 Maternal health information barriers**

Having a child is a major life event for many women, particularly those that are having their first child; it is a time when they seek information to help them during the transition to parenthood (Shieh, Broome & Stump, 2010; Hjälmhult & Lomborg, 2012). Socio-economic factors, attitudes of the health workers, language, pregnancy confirmation time, health condition of pregnant women, and the availability, affordability and acceptability of antenatal care are all barriers to maternal information utilisation (Ogunmodede, Adefunke & Oyetola, 2013). However, this does not fully explain the poor patterns of utilisation. Inadequate utilisation of antenatal care is also due to a lack of perceived benefit of antenatal care by pregnant women, as well as a lack of understanding regarding how it can address potential threats to the health of both the mother and the child.

## **2.10 Lack of health education and pregnant women complications**

Complications in pregnancy and labour can occur in any pregnancy (Pattinson et al. 2015). Complications in pregnancy and labour are still the leading causes of death among women of reproductive age in most developing countries where 99% of all maternal deaths occur (Sialubanje, 2014; United Nations, 2015). While pregnancy is considered a risk to pregnant women worldwide, it is even more risky in Sub-Saharan countries, given the high fertility rate, poor nutritional status and vulnerable health conditions (Nikiema, Beninguisse & Haggerty, 2009). Worldwide each year there are approximately 333 000 deaths due to pregnancy related conditions (WHO, 2010) with 99% of these deaths occurring in developing countries (Wagstaff & Claeson, 2004; Susuman, 2015).

In 2013, 289 000 pregnant women died from complications related to pregnancy or childbirth worldwide and for every pregnant women who died another 20 suffered injuries, infections and diseases (WHO, 2013). Whereas, in South Africa during the same year, 140 pregnant women per 100 000 lives died either during pregnancy or childbirth.

The complications that most often lead to maternal deaths are severe bleeding after childbirth, infection, high blood pressure that is acquired during pregnancy (pre-eclampsia and eclampsia) and obstructed babies which is caused by poor nutrition (WHO, 2013). While in South Africa, antenatal conditions such as hypertension and anaemia have been found to be strong risk factors for intrapartum complications (Lawn, et al. 2009).

### **2.11 Health information seeking behaviour**

Seeking information about one's health is increasingly documented as a key coping strategy in health-promotive activities and psychosocial adjustment to illness (Lambert & Loiselle, 2007). In particular, health education is believed to be a strong predictor of pregnant women seeking maternal health care services; however the level and nature of the relationship between the two is not constant through all social settings (Navaneetham & Dharmalingam, 2002).

### **2.12 Sources of health information in pregnant women**

The quality of the decisions made at any given period depends to a large extent on the type of information made accessible to pregnant women (Ogunmodede, Adefunke & Oyetola, 2013). Currently, pregnant women may have access to significant volumes of information about pregnancy, birth and parenting from a number of sources that includes the Internet, family and friends, popular media such as newspapers and television, written material from professional and commercial

entities, Internet child birth education classes and discussions with health professionals such as nurses (Grimes, Foster & Newton, 2014; Shieh, McDaniel & Ke, 2009; Berkule-Silberman et al. 2010). Some studies indicate that not all the information sources that pregnant women have access to provide relevant information (Stapleton, Kirkham & Thomas, 2002; Grimes, Foster & Newton, 2014). Discussions with health professionals such as midwives or nurses are said to be the most predominately used and main information source for pregnant women (Risca and Phipps, 2006; Ohlendorf, 2012; Ogunmodede et al. 2013; Sialubanje et al. 2014; Grimes, Foster and Newton, 2014). However, a portion of these pregnant women explained that they did not get enough information from health professionals, and instead sought it from friends and family members (Nwagwu & Ajama, 2011; Grimes, Foster & Newton, 2014). As a result of not receiving sufficient information from health professionals, pregnant women developed the belief that some maternity nurses or midwives do not have adequate midwifery skills to handle their maternity needs.

The communication literature reveals the health information sources to be either interpersonal or mass media sources (Johnson & Meischke, 1991). The interpersonal sources that pregnant women access include doctors, nurses, family and friends, health groups, voluntary organisations and other professionals (Johnson & Meischke, 1991). This entails face to face interaction with pregnant women and requires a complex teaching skills approach to those involved (Johnson & Meischke, 1991; Parrott, 2004). The mass media information sources include television, radio, posters, books, magazines and newspapers, videos and the Internet (Mills & Davidson, 2002).

Recent studies show the Internet as the most used source of information by most pregnant women in developed and developing countries (Ebijuwa, Ogunmodede, &

Oyetola, 2013). Nevertheless, the debate continues on whether these pregnant women have adequate skills to assess the information they access on the Internet as some can be misleading (Legan, Sinclair & Kornhan, 2010).

### **2.13 Summary of literature review**

This chapter has outlined the literature from different studies. The lack of literature on the reviewed studies indicate that additional literature is needed on the information needs of pregnant women on their first antenatal visit in low-income communities. The reviewed literature had focused on the information needs, health information barriers and health information sources of pregnant women; factors that influencing childbirth of pregnant women, the provision of antenatal care in primary health care facilities, health information behaviour and poor impact of health education. The following chapter three will provide a full description of the used research methodology for the study.

## **Chapter Three**

### **THE STUDY**

#### **3.1 Introduction**

This chapter focuses on the aims, objectives, hypothesis of the study and the study definitions of terms to clarify the key concepts of the study.

#### **3.2 Aim of the study**

The aim of the study was to investigate the health education needs of pregnant women on their first antenatal visit to primary health care facilities in Khayelitsha. The findings of the study are intended to facilitate planning for and implementation of research objectives, study hypothesis and definition of terms.

#### **3.3 Research objectives of the study**

The study had three research objectives and the research questions are listed per objective.



##### **3.3.1 Research objective one**

Describe the pregnancy health information needs of pregnant women on their first antenatal visit to a Primary Health Centre (PHC) in Khayelitsha.

*Research Questions:*

- *What are the lifestyle health education needs of pregnant women on their first visit?*
- *What are the pregnancy related education needs of pregnant women?*
- *What are the psychosocial education needs of pregnant women on their first visit?*
- *What are the medication education needs of pregnant women on their first visit?*

### 3.3.2 Research objective two

Describe the health information barriers for pregnant women on their first antenatal visit to a PHC in Khayelitsha.

### 3.3.3 Research objective three

Describe the health information sources used by pregnant women on their first visit.

### 3.4 Study hypotheses

The study had three null hypotheses to be tested:

1. Ho: There are no associations between the health information needs and socio-demographic characteristics of pregnant women.
2. Ho: There are no associations between the health information barriers and socio-demographic characteristics of pregnant women.
3. Ho: There are no associations between the health information sources and socio-demographic characteristics of pregnant women.
4. Ho: There are no associations between information seeking behaviour, barriers and information needs.

### 3.5 Operational definitions of terms

The key concepts and terms used in the study are listed in the table below (Table 1):

**Table 1: Definition of terms**

Term	Definition
First antenatal care visit	<i>Operational definition:</i> In this study, first antenatal care visit is the first appointment contact session between health care professionals and pregnant women that allows the exchange of health information and identification of existing risk factors that may impact on their pregnancies (Hanson, 2008).
Antenatal care	<i>Operational definition:</i> In this study, antenatal care refers to preventative and promoter health care service delivered to pregnant women with its

	goal of preventing, directing and alleviating the problems that affect mother and babies during pregnancy (Amoakoh et al., 2016)
Maternal health care	Maternal health care are health services directed to pregnant women to provide health education, counselling, screening, treatment and promote well-being of mother and fetus at an antenatal care clinic by health care professionals (Simkhanda et al. 2008 )
Health education	Health education is combination of health learning experiences that nurses or midwives design to help pregnant women improve their health, by increasing their knowledge or influencing their attitudes during pregnancy (WHO, 2013).
Health care professionals	Health care professionals are nurses or midwives that forms part of the multi-disciplinary members that renders care to pregnant women in the antenatal clinics in Khayelitsha (Bruce, Klopper & Mellish, 2011)
Information seeking behaviour (sources)	<i>Operational definition:</i> In this study, information seeking refers to information sources that pregnant women access to get health information and measured by seven items of PHISS in the study of Shieh, McDonald & Ke (2009).
Health education needs	<i>Operational definition:</i> In this study, health education needs refers to perceived information needs of pregnant women in relation to 20 pregnancy health items that encompass health promotion, risk detection and prevention, and physical and psychosocial adaptation to pregnancy (Shieh, McDonald & Ke, 2009).
Health information barriers	<i>Operational definition:</i> In this study, health Information barriers refers to the barriers that pregnant women experience in accessing pregnancy health information and is measured by 15 health information barriers that focused on five dimensions, namely psychological, demographic, interpersonal, environmental, and information source barriers (Shieh, McDonald & Ke, 2009).
Medication education needs	<i>Operational definition:</i> in this study, medication education refers to education that pregnant women get regarding medication in primary health care facilities and is measured by one item of PHINS in the questionnaire (Shieh, McDonald & Ke, 2009).
Psychosocial education needs	<i>Operational definition:</i> In this study, psychosocial educational needs refers to education that pregnant women get regarding psychosocial issues in primary health care facilities and measured by four items of PHINS in the questionnaire (Shieh, McDonald & Ke, 2009).
Lifestyle education needs	<i>Operational definition:</i> In this study, lifestyle education needs refers to education that pregnant women get regarding lifestyle education needs in primary health care facilities and measured by 20 items of PHINS in the questionnaire (Shieh, McDonald & Ke, 2009).

### 3.6 Summary of the chapter

This chapter served to set the stage for the remainder of the study. The research objectives and their related research questions, the hypotheses and the operational definitions of the study have been specified.



## Chapter Four

### METHODOLOGY

#### 4.1 Introduction

This chapter describes the research methodology of the study. It also describes the research design, the pre-test, sampling technique, research instruments, data collection techniques and cleaning of the data (Terre Blanche, Durrheim, & Painter, 2006).

#### 4.2 Research approach and paradigm

A quantitative research approach from within a positivist paradigm was used to investigate the health education needs of pregnant women during their first antenatal visit at primary health care facilities in a low-income community. Quantitative research is underpinned by the positivist research paradigm. The strengths of this research paradigm lies with its objectivity and control over the variables to reduce bias and try to provide accuracy.

Quantitative research is usually defined as the systemic approach in which numerical data is used to obtain information about the world (Burns & Grove, 2012). The quantitative approach has been characterized by its ontological nature (single reality) and methodological nature where the researcher maintains tight control over context. This research approach contributes greatly to neutrality, consistency and applicability of the findings.

#### 4.3 Research design

The study employed a quantitative descriptive survey design to investigate the health education needs of pregnant women. The use of quantitative research is influenced by the study's need to describe, explain and predict the education needs of pregnant

women on their first antenatal visit. A descriptive approach was selected because it provides a methodically systematic approach to identify the health education needs of pregnant women. In this study, the researcher relied on a researcher administered questionnaire to collect information from the respondents at a purposely selected primary health care (PHC), of the Cape Town Metropole District (Domholdt, 2000).

#### **4.4 Research setting**

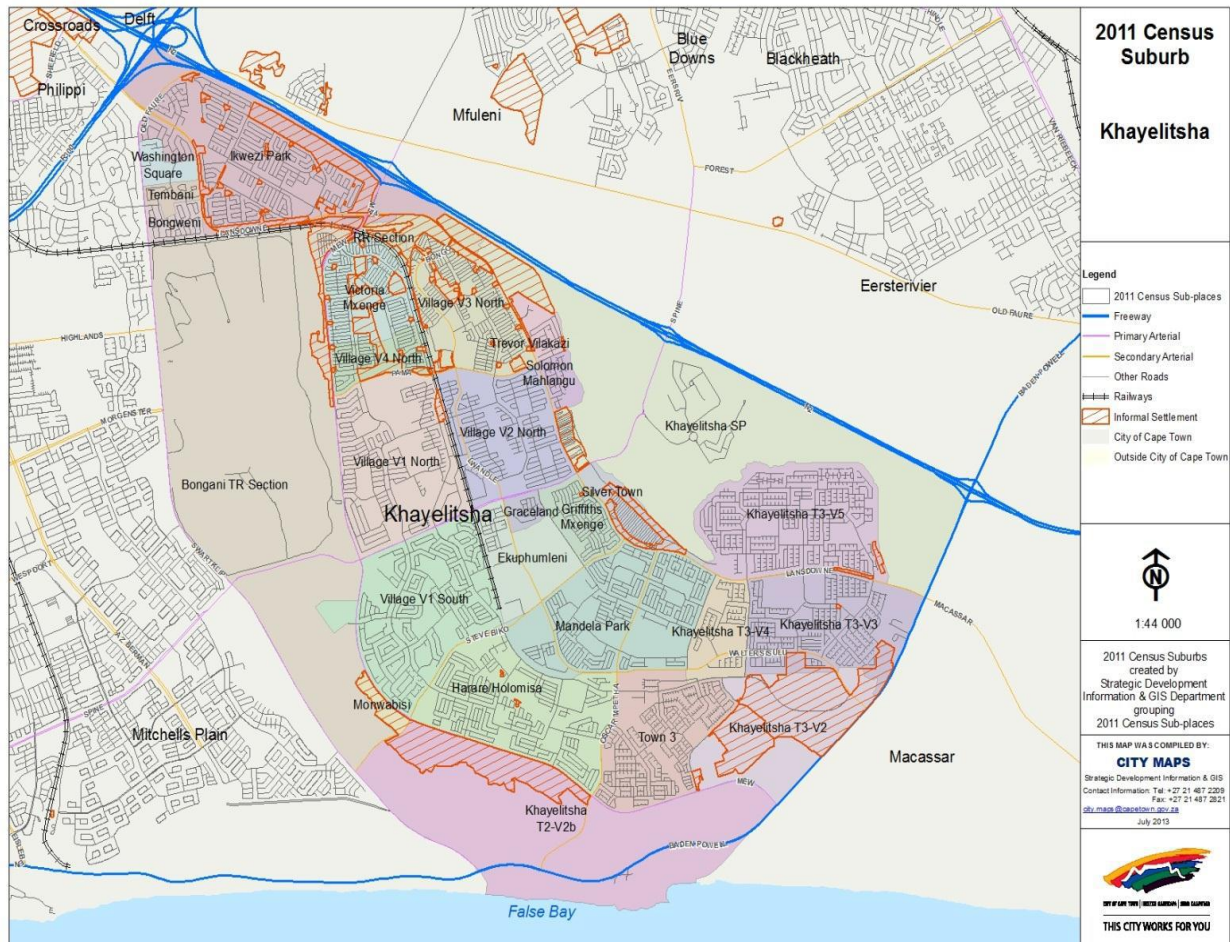
The study was conducted at two PHCs located in the Cape Town Metropole District Township called Khayelitsha within the Western Cape (see Figure1). Khayelitsha is known as the fastest growing black township in South Africa. Khayelitsha has a population of 391 748 people, consisting of 98.6% black Africans who predominately speak isiXhosa (City of Cape Town, 2015; Curry, 2011). Khayelitsha has high levels of poverty, unemployment and poor education and poor maternity outcomes.

Khayelitsha is a rural township located on the Cape Flats, between Table Bay and False Bay outside Cape Town's CBD. It covers an area of 43.51 square kilometres along the N2 highway. Khayelitsha is divided into approximately 22 sections that have 54.5% informal housing and 44.6% formal housing. Khayelitsha is one of the poorest communities in Cape Town; the latest statistics reveals a 38.02% unemployment rate and family incomes range from R1600-R2500 a month (City of Cape Town, 2015).

The two PHC facilities form part of the 10 provincial government owned PHC facilities that are situated in Khayelitsha Health District (KHD) (Table 2). The purposely chosen PHCs render the same services as other clinics, but differ from them in that they have a Midwifery Obstetric Unit (MOU) (City of Cape Town, 2015).

In these PHCs, the multi-disciplinary staff included advanced midwives, enrolled nurses, enrolled nursing assistants, counsellors and community health workers. These are the only PHCs which have labour units in Khayelitsha. The comprehensive services offered include health education and promotion, preventive care, curative care, rehabilitative care and emergency care. Other services offered include mother and child care, immunisation, family planning, counselling for sexually transmitted diseases (STDs), treatment for minor trauma and oral health care. There is also follow-up treatment and rehabilitation for people with chronic disorders or disabilities, counselling and mental health care services as well as primary welfare care. However, in the labour units of the PHC, the services rendered only include antenatal bookings to pregnant women, the follow-up appointment, infant delivery and the referrals to the district, secondary and tertiary hospitals.

The PHC maternity units render their services to 638-650 pregnant women per month. These are primarily first time booking low risk pregnant women between the ages of 11-45 years.



Source: [www.capetown.gov.za](http://www.capetown.gov.za)

Figure 1: Khayelitsha suburb of the sub-place in Cape Town Metropole region

#### 4.5 Population

Population is defined as all the elements (individuals, objects, or substances) that meet certain criteria of inclusion in a research study (Brink et al. 2013). The element that the research study selects depends on the nature of the conducted research study. Due to the nature of the study, the researcher has purposely targeted pregnant women on their first antenatal visit to a PHC. The target population of the study consisted of isiXhosa speaking pregnant women who visited the two purposely selected PHCs at Khayelitsha for the first time. These two PHCs provide antenatal care services to pregnant women at different stages of their pregnancies.

The two PHCs receive an estimated 1 500-2 000 visits from pregnant women per month, of which 638-650 are first time antenatal bookings, (Table 2).

**Table 2: Primary Health Care Facilities and attendance at Khayelitsha Health District (Feb 2014-March 2015)**

No of PHC	Primary health Care Facilities	Location of the clinic	Offers ANC Yes or No	First ANC attendances
1	Khayelitsha (Site B) CHC	Site B	Yes	4098
2	Michael Mapongwane CHC	Harare	Yes	3565
3	Nolungile CHC	Site C	Yes	1306
4	Town Two CHC	Town Two	Yes	656
5	Kuyasa CHC	Kuyasa	Yes	548
6	Matthew Goniwe CHC	Makhaza	Yes	284
7	Luvuyo CHC	Makhaza	Yes	240
8	Mayenzeke CHC	Makhaza	Yes	61
9	Zakhele CHC	Khayelitsha (B section)	Yes	28

Source: Khayelitsha Health District (KDH)

#### 4.6 Sample and sampling procedure

Sampling refers to the researcher's process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents the population of interest (Brink et al. 2011). It entails selecting a subgroup of elements or respondents from an entire population, using suitable sampling techniques depending on the chosen study design.

##### 4.6.1 Sample Size

A systematic sampling technique was used in each clinic to randomly select a sample size from the study population. This sampling technique made it easy for the researcher to select the sample from the population in the clinics. The strength of the sampling technique is that it assisted the researcher to select all the respondents at equal intervals to allow equal chances to the respondents to participate.

The respondents were selected in proportion to each of the two PHC's pregnant women attendants and the appropriate sample size was drawn from the number of

pregnant women that visited for their first antenatal check-up during the data collection period.

A sample size of 130 pregnant women was selected from each of the 2 PHCs with the following sample size formula using the survey system sample size calculator. The survey system sample size calculator was used to determine the sample size, with the margin of error of 6% and confidence level of z=95% and p=0.5, so the sample size of 261 respondents from both PHCs was drawn.

(Figure 2)(Creative research system, 2016).

$$SS = \frac{Z^2 * (p) * (1-p)}{C^2}$$

Source: [www.surveystem.com](http://www.surveystem.com)



**Figure 2: Sample size calculator formula**

#### **4.6.2 Sampling procedure**

The sample of 261 respondents who met the inclusion criteria and were willing to participate were chosen over a period of 11 weeks between May and July 2016 from the 2 primary health care facilities. A provision for refusal was made and although 261 respondents were approached for participation only 240 respondents voluntarily agreed to participate in the study (Table 3).

In ensuring the accuracy of the systematic sampling technique, every fourth participant was given a written number so that the researcher and assistance could easily identify who to approach for participation. The selection of the sample size in the study was based on the inclusion and exclusion criteria.



**Table 3: Khayelitsha primary health care centres**

Name of clinic	Number of Respondents
Clinic 1	131
Clinic 2	130
Total	261

#### **4.6.3 Inclusion criteria for study respondents**

In order for the respondents to be included in this study they needed to be pregnant and having their first antenatal visit to the primary health care facility and to preferably be 18 years old or older. If however, respondents were less than 18 years old they had to have a gate keeper available to submit a consent form on their behalf. The respondents all had to be isiXhosa speakers.

#### **4.7 Research instrument**

An instrument is defined as an application of specific rules that are aiming at developing a measurement device or instrument (Grove, Burns & Gray, 2012). The data collection instrument for the study was a researcher-administered questionnaire with closed-ended questions obtained from Professor with permission (Shieh, MacDonald & Ke 2009). This questionnaire was used in a study of 84 pregnant women on an antenatal care visit in an antenatal clinic (Shieh, McDonald & Ke, 2009).

The questionnaire has three sections using three scales, namely the (a) Pregnancy Health Information Needs Scale (PHINS) (b) Pregnancy Health-Information Barriers Scale (PHIBS) (c) Pregnancy Health Information-Seeking Scale (PHISS). All the sections of the research instrument comprised of the Likert scale questions, except the demographic information section.

#### **4.7.1 Section A: Demographics, relevant medical and obstetric information**

The demographic information section is presented as Section A in the research instrument (appendix A) and is the only section that the researcher developed for the study. The demographic information section of the research instrument consists of close ended questions on demographic variables including age, marital status, race, number of pregnancies, education level, employment status, living arrangements and health status of the respondents.

#### **4.7.2 Section B: Pregnancy Health Information Needs Scale (PHINS)**

Section B includes the Pregnancy Health Information Needs Scale (PHINS) section from Shieh, McDonald and Ke (2009) (Cronbach  $\alpha=.93$ ). The scale is made up of close ended questions that were without changes. The PHINS is composed of 20 health information questions on lifestyle, medication, psychosocial and pregnancy related health education needs using a Likert scale to address the first research objective and relevant research questions (see objective 1).

The PHINS total and mean score can be calculated to indicate categories of respondents with high and low health information needs. During the analysis stage, topics that show higher scores were taken as an indicator of high information needs. The statements in this section (PHINS) of the research instrument were phrased as “I need more information about.....”

#### **4.7.3 Section C: Pregnancy Health Information Barriers Scale (PHIBS)**

This section include the PHIBS and the internal constancy (Cronbach  $\alpha=.69$  vs  $.22$ ). The PHIBS scale consists of 15 health information barriers statements that



measures different barriers using a Likert scale to address the second research objective (see Objective 2).

The PHIBS total and mean score are calculated to indicate the high and low health rated barriers to health education experienced by respondents. The statements or questions in this section (PHIBS) were phrased as “how much do you agree or disagree with.....”

#### **4.7.4 Section D: Pregnancy Health Information-Seeking Scale (PHISS)**

The last section is the PHISS (Cronbach alpha  $\alpha=.75$ ). The PHISS scale consists of seven statements of information sources using a Likert scale to address the third research objective (see Objective 3).

The total and mean score is calculated on the health information sources as to determine the frequently used health information sources by respondents. The statements on the PHISS scale are phrased as “In the past month, I find or learned about pregnancy when I.....”

#### **4.8 Translation of research instrument**

The original English research questionnaire version will be translated into isiXhosa to ensure that translation is meaningful and correct (see Appendix B). Further reason for the translation will be to accommodate the study respondents whose spoken language is isiXhosa.

The tool was translated with the help of two isiXhosa lecturers who are isiXhosa experts and one of them has obtain PHD in the faculty of Arts at the University of the Western Cape (UWC). Further corrections were made on the isiXhosa research questionnaire version after the re-testing of the tool.

## 4.9 Reliability and validity of the instrument

### 4.9.1 Reliability

Reliability is known as a degree to which the instrument can be depended upon to yield consistent results if used repeatedly over time on the same person or if used by two researchers (Brink et al. 2012). Reliability is said to have a high correlation score when it is nearer to one, but it can vary between zero and one (Brink et al. 2012).

Reliability was done by pre-testing the research questionnaire (see 4.11.1) and calculation of internal consistency scores.

The instrument has a high internal consistency with a Cronbach alpha  $>.70$  pre-established by Shieh et al. (2009). However, the Cronbach's alpha of the study was  $.64$ , lower than previous study (Shieh et al. 2009). The instrument's Cronbach alpha of both studies was good to collect data, as it was closer to 1 and  $<.7$  (Burns and Grove, 2009). Table 4 below is showing the internal consistency scores of all the researcher-administered questionnaires scales and subtotal (PHINS, PHIBS and PHISS).

**Table 4: Internal consistency**

Scale	Shieh and colleagues	This Study
PHINS	.93	.79
PHIBS	.69	.22
PHISS	.75	.73
Total	.70	.64

### 4.9.2 Validity

Validity is an ability to ascertain whether an instrument is accurately measuring what it is supposed to measure given the context in which it is applied (Brink et al. 2012).

The questionnaire was tested for content and face validity. Face validity is used to

check if the instrument is measuring what it is supposed to or is designed to measure. It is usually done by professionals in the field (Brink et al. 2012). This instrument was constructed by (Shieh, McDonald and Ke, 2009).

- **Face validity**

During its development, the instrument was given to experts in the nursing field and peers to review. To assess for accuracy in the South African context, the questionnaire was reviewed by the researcher and supervisor during the pre-testing.

- **Content validity**

Content validity is an assessment done to validate if the instrument represents all the components of the variables that needs to be measured (Brink et al. 2012).The researcher did not assess content validity as content validity was established in the instrument obtained from (Shieh, McDonald & Ke, 2009) (Table 5).

**Table5: Content validity of the instrument**

Research questions	Objective areas	Questions	Research studies
What are the lifestyle education needs of pregnant women on their first visit?	Education needs	1-7,9, 12,13	Shieh, McDaniel & Ke (2009).
What are the pregnancy related health education needs of pregnant women on their first visit?	Education needs	8,10, 14,18,19	Shieh, McDaniel & Ke (2009). Shi, Nakamura & Takano (2004).
What are the psychosocial education needs of pregnant women on their first visit?	Education needs	11,15,16,17	Shieh, McDaniel & Ke (2009).
Determine the medication education needs of pregnant women on their first visit	Education needs	20	Shieh, McDaniel & Ke (2009).
Determine the pregnancy education barriers of pregnant women on their first visit?	Barriers	21-35	Shieh, McDaniel & Ke (2009).
Determine pregnant women's ability to seek health information regarding pregnancy on their own?	Health information sources	36-42	Shieh, McDaniel & Ke (2009). Shi, Nakamura & Takano (2004).

## **4.10 Data collection procedure**

### **4.10.1 Pre-testing of the tool**

Usually the pre-testing of the tool is conducted before its use in the main study (survey). It is a small-scale version or trial to test the methods to be used in a larger and more rigorous study in examination on the tool's validity and reliability (Polit & Beck, 2012).

The pre-testing of the research questionnaire was conducted using five respondents from each of the two purposely selected PHCs in Khayelitsha. This was carried out to check the clarity of the research questionnaire. The pre-testing gave the researcher an orientation on the data collection process and also aided in determining the length of time needed by the respondents to answer or complete the researcher-administered questionnaire.

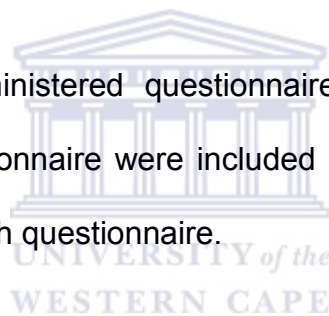
On a randomly chosen day the questionnaire was tested at PHCs. Prior to the administering of the questionnaire, the respondents were briefed about the purpose of the study and given consent forms to complete indicating their voluntary consent. The researcher, with the help of two research assistants who recruited the respondents, administered the isiXhosa translated questionnaire to the respondents for answering.

On completion of pre-testing, the data was entered and analyzed on Statistical Package for Social Science (SPSS) version 21 software programme for analysis. The research questionnaire after the pre-testing was refined, and a database and codebook was created for the main study.

Changes were made on the tool following comments from the questionnaire assessors to ensure that it was easy for the respondents to answer during the main study. A change was made to one statement in the PHIBS scale for easier answering of the questionnaire. The made change was the removal of “*Health fairs*” in statement 42 of PHIBS scale (see Appendix A)

The pre-testing of the tool made it possible for the researcher to determine that the respondents took approximately 40 minutes to complete the questionnaire. The pre-testing of the tool also assisted the researcher to assess the cost involved in the data collection process and to prepare for any unforeseen problems that might arise in the main study.

None of the researcher-administered questionnaires completed during the pre-testing of the research questionnaire were included in the main study, as changes had been made to the research questionnaire.



#### **4.11 Data collection**

Data collection is the period of gathering information from the respondents to address a problem (Polit & Beck, 2012). This period of gathering information is achieved when the required data for the study is obtained from the respondents. The study data was collected at two Khayelitsha PHC facilities from pregnant women during their first antenatal visit. The data collection was conducted from May to July 2016 (11 weeks). The data collection process was commenced after receiving permission from the Department of Health, primary health care facility managers and sub-district committee.

After the information session and the voluntary signing of consent forms by the respondents, the research questionnaires were administered in an uninterrupted,

quiet room of each PHC facility. The administering of each research questionnaire took about 40 minutes until all the information needed was gathered. The administering of the questionnaire to the respondents was conducted after the history taking in the morning and before their physical assessment by the midwives. The research questionnaire was administered before the afternoon physical assessment, because several of the respondents were feeling tired after the assessment. The researcher administered the questionnaire and two research assistants and three selected nurses assisted the researcher with the recruitment of pregnant women.

#### **4.12 Data analysis plan**

The researcher used the code book that was developed after pre-testing to develop the coding from all variables in the research questionnaire. Using the code book, the results obtained from the research questionnaires were coded, checked for completeness, cleaned and entered in the SPSS version 21 software programme for analysis.

To describe the health information needs, barriers and sources; the researcher used descriptive statistics techniques to present frequency and central tendencies (mean and standard deviation) for the variables. Descriptive statistics is used to describe and summarise data in a condensed, organised and visually organised manner (Brink et al. 2006).

In the study, multiple linear regression was performed to test which factors best predict information seeking behaviour. The mean score of PHINS and PHIBS were classified into four categories, namely: the high health information needs together with the low health information barriers, the low health information needs together

with low health information barriers, the high health information needs together with the high information barriers and the low health information needs together with the high health information barriers.

To test the hypotheses, inferential statistics were used. Inferential statistics are known as statistics that permit inferences about whether there are associations between different variables which would give an indication of prediction of health education needs (Polit & Beck, 2012). The non-parametric tests (Mann-Whitney (U) test, Chi-Square test of Independence) were used to determine the significant associations and differences between the socio-demographics and three main health information category variables (health information needs, health information barriers and health information sources) and associations between information seeking behaviour, barriers and information needs. These tests were tested for more than one socio-demographic characteristic in the health information category variables to prove any existing significant associations and differences. All the tests were considered significant at the  $p$ -value of  $<.05$ .

#### **4.12.1 Recording on analysis of scales**

##### **Socio-demographics**

The socio-demographic characteristics of the respondents were re-coded as either zero or one depending on the recoded variable (age, marital status, race, number of pregnancies, education level, employment status, living arrangements and health status).

**Pregnancy Health Information Needs Scale (PHINS):** The PHINS was measured on a five point Likert scale and re-coding of the study data in to different variables was done for easy reporting of respondents' responses. The PHINS was coded as:

agree very much (5), agree (4), no opinion (3), disagree (2) and disagree very much (1) on the questionnaire (See appendix 1). To facilitate ease of interpretation, the PHINS items was re-coded on a two-point scale of either “agree” (combination of agree very much and agree) or “disagree” (combination of disagree very much, disagree and no opinion).

The frequencies of the scores on the 20 health topics were calculated and the component score of the health topics were taken to indicate more or less health information needs. The mean score and range on the PHINS was also taken as a cut-off point to indicate high or low health needs for information.

**Pregnancy Health Information Barriers Scale (PHIBS):** The variables on the PHIBS were measured using a five point Likert scale and re-coding of the scale was done for easy reporting of the study data. The PHIBS was coded as: agree very much (5), agree (4), no opinion (3), disagree (2) and disagree very much (1) on the questionnaire (Appendix 1). To facilitates ease of interpretation, the PHIBS items was re-coded in a two point scale of either “agree” (combination of agree very much and agree) or “disagree” (combination of disagree very much, disagree and no opinion).

The frequencies of the 15 health information barrier items were calculated and the component score was taken to indicate whether the respondents experienced high or low health information barriers. The item numbers 22, 27, 33 and 34 were re-coded to facilitate easy scoring of mean as statements were positive and negative.

**Pregnancy Health Information-Seeking Scale (PHISS):** The seven health information sources items of PHISS was measured using a four point Likert scale and re-coding of the study data in to different variables was done for easy reporting



of respondents' responses. The PHISS was coded as: almost all the time (3), often (2), sometimes (1) and almost never (0) on the questionnaire (Appendix 1). To facilitate ease of interpretation, the PHISS items were re-coded in a two point scale of either "frequently" (combination of often and almost all the time) or "seldom" (combination of almost never and sometimes).

The frequencies of the PHISS score were calculated to determine the frequently used health information needs by the respondents.

#### **4.13 Ethics**

The researcher requested permission for ethical approval from the Community and Health Sciences Higher Degrees Committee and in the University of the Western Cape Senate Research Committee (Appendix I) before the study commenced. After receiving ethical clearance, the researcher sought permission prior to data collection from the Department of Health and the permission letters to the primary health care facility managers were sent. Three month later (March-April 2016), the permission letters to collect data at primary health care facilities were collected from the Department of Health in conjunction with the primary health care managers and the sub-structure committee (Appendix G and H).

During the data collection days of the study, the respondents were given accurate study information (i.e. aim and objectives) to their level of understanding (Appendix F). After the study information session that included information on the procedure for withdrawal from the study by respondents. The potential risks and benefits of the study were explained to the respondent's level of understanding. The respondents that volunteered to participate in the study were asked to submit their consent forms (Appendix E), without being pressured or threatened. During data collection, the

primary health care counsellors were available to counsel affected respondents as some questions in the researcher-administered questionnaire could have provoked unintended emotions.

In the study, confidentiality was maintained by not revealing the personal information of the respondents to any other people that were not directly involved. Privacy was also assured by not requesting the respondent's name in the researcher-administered questionnaire- instead codes (numbers) were used to identify the research questionnaires. Furthermore, the research questionnaires were completed in a comfortable room where there were no interruptions.

The respondents were recruited and treated fairly, and benefits were distributed equally. There were no respondents ignored or rejected during the data collection period. The right to withdraw from the study were emphasized and respondents that wish to do so will be allowed. The researcher pledged to maintain a scientific honesty during the reporting of the study findings. The research questionnaires were kept in a safe locked cupboard where only the researcher can access them. The research questionnaires will be kept for a period of five years and thereafter will be safely destroyed by the researcher.

#### **4.14 Summary of the chapter**

This chapter has described the research design and methodology followed in conducting the research study. The chapter has presented a detailed description of the research setting, design and instruments, data collection process, data analysis used and the ethics embraced.

## Chapter Five

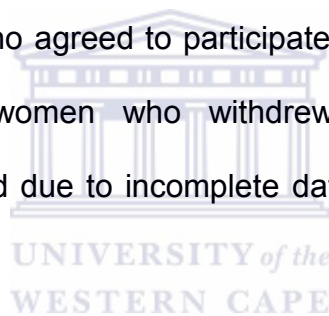
### RESULTS

#### 5.1 Introduction

This chapter presents the findings of this study with the aim to describe the health information needs, health information barriers, and the health information sources of pregnant women on their first visit to a primary health care facility for antenatal care.

#### 5.2 Sample realization

A total of 271 pregnant women who attended first antenatal booking in two Khayelitsha primary health facilities were invited to participate in this study. There were 261 pregnant women who agreed to participate in this study while 10 refused. There were 21 pregnant women who withdrew from the study and their questionnaires were discarded due to incomplete data. This resulted in a response rate of 92% (n=240).



##### 5.2.1 Demographics of respondents

The respondents' ages ranged between 14 and 43 years (mean age 27.0 years (sd=6.0)). All respondents were African and isiXhosa speakers.

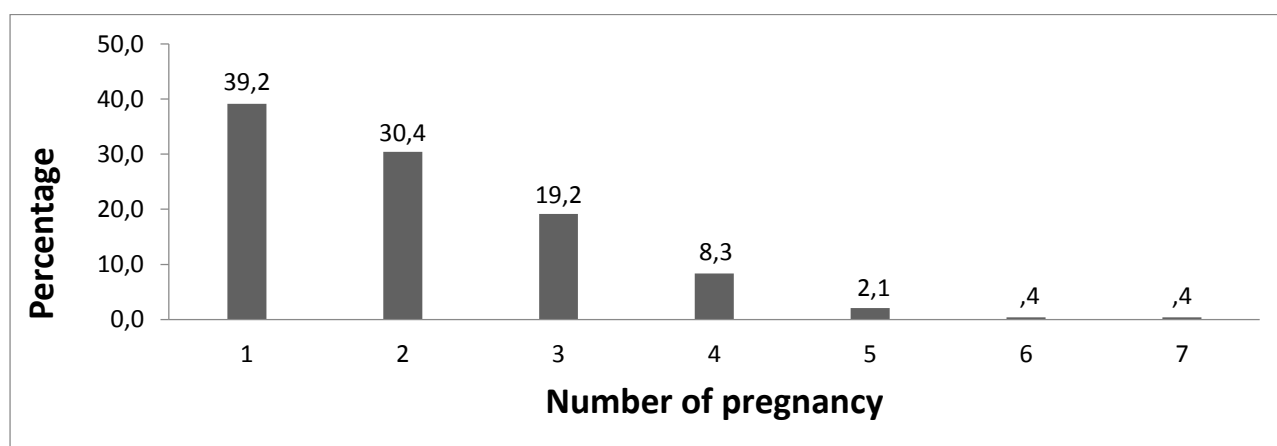
More than three quarters (75.8%, n=182) of the respondents had completed the grade eight level of secondary school, and nearly half (43.3%, n=104) of the respondents were unemployed. Nearly three quarters (70.0%, n=168) of the respondents were single with half (50%, n=120) of the respondents living with their baby's father, 108 (45%) were living with family members and the remaining (5%, n=12) of respondents were living on their own (Table 6).

**Table 6: Demographics of the respondents**

	<b>Clinic 1 (n=125, 52.1%)</b>	<b>Clinic 2 (n=115, 47.9%)</b>	<b>All respondents (n=240, 100%)</b>
Age (n, %)			
Less than 35 years	78 (62.4%)	74 (64.3%)	152 (63.3%)
More than 35 years	47 (37.6%)	41 (35.7%)	88 (36.7%)
Average age (sd)	27.3 (sd=5.7)	26.7 (sd=6.2)	27.0 (sd=6.0)
Marital status (n, %)			
Single	89 (71.2%)	79 (68.7%)	168 (70.0%)
Married	34 (27.2%)	34 (29.6%)	68 (28.3%)
Divorced/Separated	2 (1.6%)	2 (1.7%)	4 (1.7%)
Race (n, %)			
African	125 (100%)	115 (100%)	240 (100%)
Spoken language (n, %)			
IsiXhosa	125 (100%)	115 (100%)	240 (100%)
Education status (n, %)			
Secondary school	97 (77.6%)	85 (73.9%)	182 (75.8%)
Tertiary studies	16 (12.8%)	15 (13.0%)	31 (12.9%)
Tertiary qualification	10 (8.0%)	14 (12.2%)	24 (10%)
Occupation status (n, %)			
Unemployed	59 (47.2%)	45 (39.1%)	104 (43.3%)
General worker	40 (32%)	24 (20.9%)	64 (26.7%)
Professional worker	8 (6.4%)	18 (15.7%)	26 (10.8%)
Student	15 (12.0%)	25 (21.7%)	40 (16.7%)
Other occupation	3 (2.4%)	3 (2.6%)	6 (2.5%)
Living arrangements (n, %)			
Live alone	7 (5.6%)	5 (4.3%)	12 (5%)
Baby's father	60 (48.0%)	60 (52.2%)	120 (50%)
Family members	58 (46.4%)	50 (43.5%)	108 (45%)

### 5.2.2 Obstetric presentation of the respondents

More than half (57.9%, n=139) of the respondents were expecting either their second, third or fourth child, or in some cases more children (Figure 3).



**Figure 3: Number of pregnancies**

Just over half (50.8%, n=122) of the respondents knew the duration of their current pregnancy. With the average duration of pregnancy reported being 17 weeks (4 to 36 weeks of pregnancy). Nearly a third (30.0%, n=72) of the respondents were in the second trimester (13-27 weeks) of pregnancy and 15.8% (n=38) were in the first trimester (1-12 weeks) of pregnancy (Table 5).

**Table 7: Obstetric presentations of the respondents**

<b>Variables of the respondents</b>	<b>Clinic 1 (n=125, 52.1%)</b>	<b>Clinic 2 (n=115, 47.9%)</b>	<b>All respondents (n=240, 100%)</b>
Number of pregnancy (n, %)			
1st pregnancy	42 (33.6%)	52 (45.2%)	94 (39.2%)
2-4 pregnancies	83 (66.4%)	63 (50.4%)	139 (57.9%)
5-7 pregnancies	3 (2.4%)	4 (3.5%)	7 (2.9%)
Average number of pregnancies (sd)	1.7 (sd=0.5)	1.6 (sd=0.6)	1.6 (sd=0.5)
Knowledge of pregnancy duration (n, %)			
No	55 (44.0%)	63 (54.8%)	118 (49.2%)
Yes	70 (60.9%)	52 (45.2%)	122 (50.8%)
Duration of pregnancy (n, %)			
Don't Know	55 (44.0%)	63 (54.8%)	118 (49.2%)
1-12 weeks	27 (21.6%)	11 (9.6%)	38 (15.8%)
13-27 weeks	36 (28.8%)	36 (31.3%)	72 (30.0%)
28-40 weeks	7 (5.6%)	5 (4.3%)	12 (5.0%)
Average duration of pregnancy (sd)	16.5 (sd=6.4)	18.2 (sd=6.1)	17.2 (sd=6.3)

### 5.2.3 Medical profile of respondents

Nearly ninety per cent of the respondents (89.6%, n=215) reported having no medical conditions, with 25 respondents (10.4%) indicating the following medical conditions: asthma (n=14), diabetes (n=9) and blood pressure (n=2) (Table 6).

**Table 8: Medical profile of pregnant women**

<b>Variables of the respondents</b>	<b>Clinic 1 (n=125, %)</b>	<b>Clinic 2 (n=115, %)</b>	<b>All respondents (n=240, 100%)</b>
No medical condition (n, %)	113 (90.4%)	102 (88.7%)	215 (89.6%)
Medical condition (n, %)	12 (9.6%)	13 (11.3%)	25 (10.4%)

### 5.3 Pregnancy health information needs

In order to address the first objective of the study - which was to describe the pregnancy health information needs of pregnant women on their first visit at the two clinics in Khayelitsha - four research questions were asked from the respondents. These included questions on whether they needed health education on lifestyle, pregnancy, psychosocial issues in pregnancy and medication in pregnancy.

#### 5.3.1 Overall health information needs

The data on the health information needs was collected through the PHINS with 20 items on health information needs. The questionnaire included items on lifestyle education needs, pregnancy related education needs, psychosocial education needs and medication education needs.

The total average score of the 20 pregnancy health information needs was 80.5 [95%CI 77.6 – 83.2] out of a total 100, indicating a high overall need (Table 8). When comparing the individual respondents' needs scores to the average total score (as per scale instructions), n=110 (45.8%) could be classified as having lower than average health information needs and n=130 (54.2%) could be classified as having higher than average health information needs (Figure 4).

The five highest ranked health information needs on the PHINS were: *To know how my baby grows and develops during pregnancy* (4.6 [95%CI 4.5 – 4.7]), followed by: *What are the danger signs during pregnancy* (4.5 [95%CI 4.5– 4.7]), *Information about antenatal vitamins* (4.4 [95%CI 4.2 – 4.5]), *How using illegal drugs affects the baby and pregnancy* (4.2 [4.1 - 4.3]) and *What should I eat or should not eat* (4.2 [4.0 - 4.3])(Table 8).

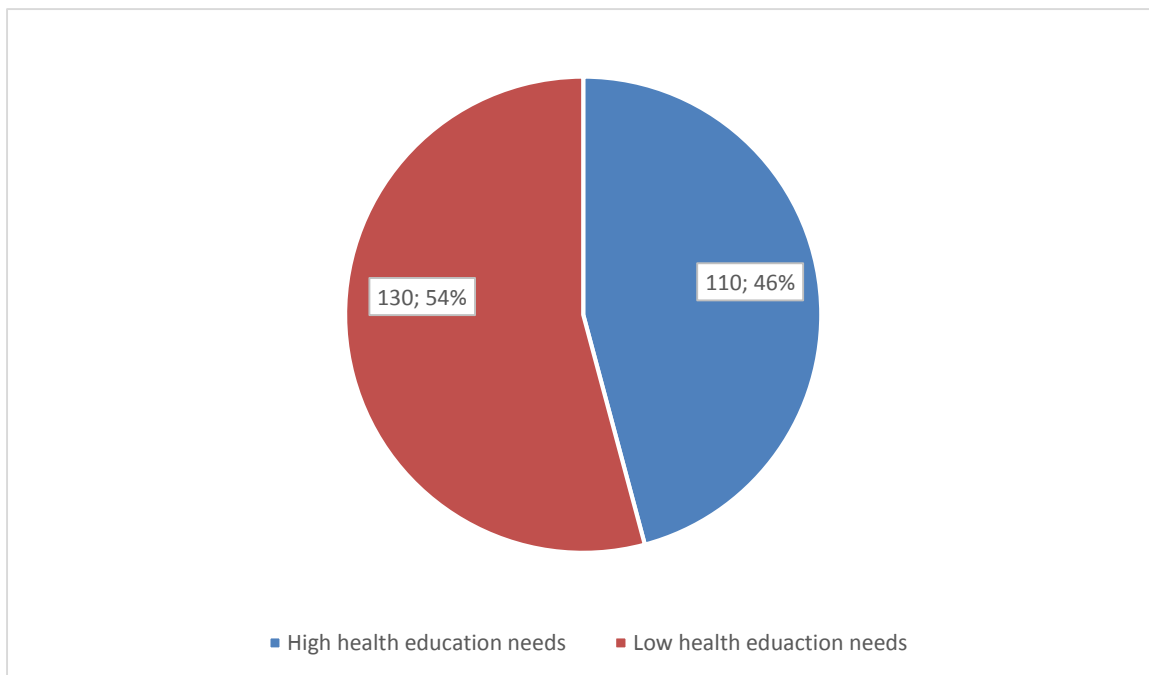


Figure 4: High and low information needs of respondents

Table 9: Health information needs

	PHINS	Mean (sd)	95% CI
1.	How my baby grows and develops during pregnancy	4.6 (0.8)	4.5 - 4.7
2.	What are the danger signs during pregnancy	4.5 (0.7)	4.5 - 4.6
3.	Information about prenatal vitamins and how much of them are needed	4.2 (1.0)	4.1 - 4.3
4.	How using illegal drugs affects the baby and pregnancy	4.2 (1.1)	4.1 - 4.3
6.	What I should or should not eat	4.2 (1.1)	4.0 - 4.3
7.	How to deal with stress during pregnancy	4.2 (1.2)	4.0 - 4.3
8.	Physical abuse to women by their husbands or partners	4.1 (1.1)	4.0 - 4.3
9.	How to balance rest and activity	4.1 (1.0)	4.0 - 4.2
10.	Emotional changes during pregnancy	4.1 (1.2)	4.0 - 4.3
11.	How to practice safe sex that won't affect baby and Pregnancy	4.1 (1.2)	4.0 - 4.3
13.	What birth control methods to use after my pregnancy	4.1 (1.3)	3.9 - 4.2
14.	What safe exercise for me	4.0 (1.1)	3.9 - 4.2
15.	How to prepare for breast feeding	4.0 (1.4)	3.8 - 4.1
16.	How smoking affects the baby and pregnancy	4.0 (1.2)	3.8 - 4.1
17.	How drinking alcohol affects the baby and pregnancy	4.0 (1.3)	3.8 - 4.1
18.	Kinds of safe and unsafe medications	4.0 (1.2)	3.8 - 4.1
19.	What to do if my labour starts early	3.9 (1.4)	3.8 - 4.1
20.	Health information about HIV blood test and prevention	3.5 (1.6)	3.3 - 3.7
21.	How much (weight) should I gain during pregnancy	3.4 (1.4)	3.3 - 3.6
22.	How to use seat belts properly during pregnancy	3.2 (1.5)	3.0 - 3.4
	PHISS Total	80.5	77.6 - 83.2

The five lowest health information needs on the PHINS were: *Kinds of safe and unsafe medications* (4.0 [95%CI 3.8 – 4.1]), followed by: *What to do if my labour starts early* (3.9 [95%CI 3.8 - 4.1]), *Health information about HIV blood test and prevention* (3.5 [95%CI 3.3 – 3.7]), *How much (weight) should I gain during pregnancy* (3.4 [95%CI 3.3 – 3.6]). The lowest health information needs were: *How to use seat belts properly during pregnancy* (3.2 [95%CI 3.0 – 3.4]).

### 5.3.2 Lifestyle education needs

The lifestyle education needs were measured using ten items on PHINS. The highest ranked lifestyle education need (ranked 3) on PHINS was the need to know more information about *Antenatal vitamins* (89.2%, n=214), followed by 209 respondents (87.1%) who indicated that they needed more information about *How using illegal drugs affects the baby and pregnancy* (ranked 4). The third highest ranked lifestyle education need by respondents was to know more health information *about the kinds of food they should or should not eat during pregnancy* (87.9%, n=211).

The second lowest ranked lifestyle education need by respondents on PHINS was the need to know more health information about *What birth control to use after pregnancy* (81.2%, n=195), followed by least important health information need *How to use seat belts properly during pregnancy* (53.3%, n=128) (Table 10).



**Table 10: Lifestyle education needs**

I need to know more health information about...	Normal maternal age (n=152, %) Mean (sd)	Advanced maternal age (n=88, %) Mean (sd)	Total (n=240, %) Mean (sd)	Mann-Whitney test (U)	p-value
3. Information about prenatal vitamins and how much of them are needed	134 (88.2%) 4.2 (sd=1.1)	80 (90.9%) 4.0 (sd=1.0)	214 (89.2%) 4.2 (sd=1.0)	U=.332	P=.740
4. How using illegal drugs affects the baby and pregnancy	132 (86.8%) 4.2 (sd=1.1)	77 (87.5%) 4.1 (sd=1.0)	209 (87.1%) 4.2 (sd=1.1)	U=-1.0	P=.276
5. What I should or should not eat	132 (86.8%) 4.2 (sd=1.1)	79 (89.8%) 4.1 (sd=1.0)	211 (87.9%) 4.2 (sd=1.1)	U=.238	P=.812
8. How to balance rest and activity	131 (86.2%) 4.0 (sd=1.1)	80 (90.9%) 4.3 (sd=0.9)	211 (89.2%) 4.1 (sd=1.0)	U=1.9	P=.047*
12. Safe exercise for me	130 (85.5%) 4.0 (sd=1.2)	75 (85.2%) 4.1 (sd=1.1)	205 (85.4%) 4.0 (sd=1.1)	U=1.0	P=.284
11. What birth control methods to use after my pregnancy	123 (80.9%) 4.1 (sd=1.3)	72 (81.8%) 4.0 (sd=1.3)	195 (81.2%) 4.1 (sd=1.3)	U=6.84	P=.075
14. How smoking affects the baby and pregnancy	122 (80.3%) 3.9 (sd=1.3)	75 (85.2%) 4.1 (sd=1.2)	197 (82.1%) 4.0 (sd=1.2)	U=.774	P=.439
15. How drinking alcohol affects the baby and pregnancy	121 (79.6%) 3.9 (sd=1.4)	73 (83.0%) 4.1 (sd=1.2)	194 (80.8%) 4.0 (sd=1.3)	U=.441	P=.659
19. How much weight should I gain during pregnancy	97 (63.8%) 3.4 (sd=1.4)	56 (63.6%) 3.5 (sd=1.5)	153 (63.8%) 3.4 (sd=1.4)	U=.565	P=.572
20. How to use seat belts properly during pregnancy	81 (53.3%) 3.1 (sd=1.5)	47 (53.4%) 3.2 (sd=1.5)	128 (53.3%) 3.2 (sd=1.5)	U=7.321	P=0.21

Mann-Whitney (U) test with \*p-value set at <.05.

Significant associations were found between unemployed pregnant women that showed higher lifestyle education needs compared to pregnant women reporting partaking in occupational activities in the following lifestyle education needs: *Using illegal drugs affects the baby and pregnancy* (4.2 vs 4.1 respectively,  $U=2.7$ ,  $p=.023$ ), *Smoking affects the baby and pregnancy* (4.0 vs 3.9 respectively,  $U=2.7$ ,  $p=.030$ ) and *Drinking alcohol affects the baby and pregnancy* (4.1 vs 3.1 respectively,  $U=2.5$ ,  $p=.008$ ) (Table 11).

**Table 11: Association between lifestyle education needs and employment status**

I need to know more health information about...	Unemployed (n=144, %) Mean (sd)	Employed (n=96, %) Mean (sd)	Total (240, %) Mean (sd)	Mann-Whitney test (U)	p-value
4. How using illegal drugs affects the baby and pregnancy	126 (87.5%) 4.2 (sd=1.1)	83 (86.5%) 4.1 (sd=1.0)	209 (87.1%) 4.2 (sd=1.1)	U=2.7	P=.023*
14. How smoking affects the baby and pregnancy	118 (81.9%) 4.0 (sd=1.2)	79 (82.3%) 3.9 (sd=1.3)	197 (82.1%) 4.0 (sd=1.2)	U=2.7	P=.030*
15. How drinking alcohol affects the baby and pregnancy	120 (83.3%) 4.1 (sd=1.1)	74 (77.1%) 3.7 (sd=1.4)	194 (80.8%) 4.0 (sd=1.3)	U=2.5	P=.008*

Mann-Whitney (U) with \*p-value set at <0.5.

### 5.3.3 Pregnancy related education needs

The pregnancy related education needs were measured with five items on PHINS. In the overall needs were ranked, the two highest ranking needs were pregnancy related. The highest ranked pregnancy related education needs on the PHINS was to know more information about *The danger signs during pregnancy* (96.3%, n=231), followed by the need to know more health information about the *Growth and development of the baby during pregnancy* (95.4%, n=229),

The other pregnancy related health education needs were ranked lower (10, 13 and 17) and can be seen in Table 11. The lowest ranked pregnancy related education needs on PHINS was to know more health information about *How to prepare for breast feeding* (79.2%, n=194), and lastly, *What to do if their labour starts early* (78.7%, n=189).

**Table 12: Pregnancy related education needs**

I need to know more health information about...	Primigravida (n=213, %) Mean (sd)	Multi-grand gravida (n=27, %) Mean (sd)	Total (240, %) Mean (sd)	Mann-Whitney test (U)	p-value
1. How the baby grows and develops during pregnancy	203 (95.3%) 4.7 (sd=0.6)	26 (96.3%) 4.5 (sd=0.9)	229 (95.4%) 4.6 (sd=0.8)	U=-1.8	P=.070
2. Danger signs during pregnancy	205 (96.2%) 4.6 (sd=0.7)	26 (96.3%) 4.5 (sd=0.6)	231 (96.3%) 4.5 (sd=0.7)	U=2.7	P=.023*
10. How to practice safe sex that won't affect baby and pregnancy	176 (82.6%) 3.8 (sd=1.5)	22 (81.5%) 4.2 (sd=1.2)	198 (82.5%) 4.1 (sd=1.2)	U=3.511	P=.776
13. How to prepare for breast feeding	172 (80.7%) 4.4 (sd=1.0)	18 (66.7%) 3.7 (sd=1.5)	194 (79.2%) 4.0 (sd=1.4)	U=3.32	P=.795
17. What to do if my labour starts early	167 (78.4%) 3.9 (sd=1.4)	22 (81.5%) 4.0 (sd=1.3)	189 (78.7%) 3.9 (sd=1.4)	U=.091	P=.927

Mann-Whitney (U) with \*p-value set at <.0.5.

There were significant associations between the pregnancy related education needs and the number of pregnancies a woman previously had on the *danger signs during pregnancy* (U=2.7, p=.023) (Table 11).

### 5.3.4 Psychosocial education needs of pregnant women

The psychosocial education needs were measured using four items on PHINS. The highest ranking psychosocial education needs on PHINS by respondents was the need to know more health information about *How to deal with stress during pregnancy* (86.2%, n=207) (ranked 6), followed by more health information about *Physical abuse by their husbands or partners* and *Emotional changes during pregnancy* (Table 13).

The lowest pregnancy related education needs on PHINS needed by respondents was to know more *health information about HIV blood test and prevention* (73.8%, n=177).

**Table 13: Psychosocial education needs**

I need to know more health information about...	Live alone (n=12, %) Mean (sd)	Live with partner (n=228, %) Mean (sd)	Total (n=240, %) Mean (sd)	Mann-Whitney test (U)	p-Value
6. How to deal with stress during pregnancy	10 (83.3%) 4.3 (sd=1.2)	197 (86.4%) 4.2 (sd=1.2)	207 (86.2%) 4.2 (sd=1.2)	U=-.736	P=.462
7. Physical abuse by their husbands or partners	9 (75.0%) 4.1 (sd=1.2)	196 (86.0%) 4.2 (sd=1.1)	205 (85.4%) 4.2 (sd=1.1)	U=1.43	P=.755
9. Emotional changes during pregnancy	10 (83.3%) 4.4 (sd=1.0)	186 (81.6%) 4.1 (sd=1.2)	196 (81.7%) 4.1 (sd=1.2)	U=1.0	P=.300
18. Health information about HIV blood test and prevention	9 (75.0%) 3.8 (sd=1.6)	168 (73.7%) 3.5 (sd=1.6)	177 (73.8%) 3.5 (sd=1.6)	U=1.0	P=.316

Mann-Whitney (U) test with \*p-value set at <.05

Though it was hypothesized, the pregnancy related education needs did not show any significant association between the psychosocial education needs and the respondents living arrangements (Table 12). It was however clear that the psychosocial education needs were greater in pregnant women who were living alone than their counterparts who lived with a partner. Pregnant women who lived alone had a higher need for information about emotional changes that occur during pregnancy (83.3%, n=10, Mean=4.4, sd=1). Pregnant women who lived with a partner reported having a lower need for information about HIV blood test and prevention (73.7%, n=168, Mean=3.5, sd=1.6).

### 5.3.5 Medication education needs of pregnant women

Only one item on PHINS measured the need for health information on medication during pregnancy. Although the measured medication education need item ranked as number 16 on the overall health education needs items (Table 8), it was clear from the findings of this study that respondents had medication education needs as more than three quarters of the respondents (76.3%, n=183) reported this (Table 11).

**Table 13: Medication education needs**

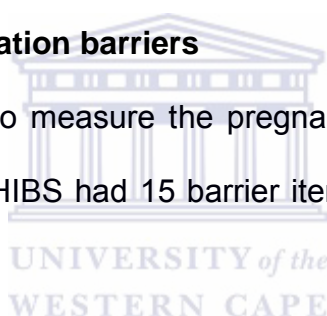
I need to know more health information about...	Primigravida (n=94, %) Mean (sd)	Multi-grand gravida (n=146, %) Mean (sd)	Total (n=240, %) Mean (sd)	Mann-Whitney test (U)	p-Value
16. Kinds of safe and unsafe medications	80 (75.4%) 4.3 (sd=0.9)	103 (81.8%) 3.8 (sd=1.4)	183 (76.2%) 4.0 (sd=1.2)	U=5.8	P=.035

Mann-Whitney (U) test with \*p-value set at <.05.

There were significant associations between medication education needs and number of pregnancies a woman had on the kinds of safe and unsafe medications ( $U=5.8$ ,  $p=.035$ ), with more multigravida women indicating a need for this health information (Table 13).

#### 5.4 Pregnancy health information barriers

The second objective aimed to measure the pregnancy health information barriers were done through PHIBS. PHIBS had 15 barrier items which the respondents had to rate.



##### 5.4.1 Overall health information barriers

The total average score of the 15 pregnancy health information barriers were 42.3 (sd: 6.6) as measured by the PHISS items.

Most respondents (71.2%, n=171) reported that *not having many health activities in the community* was the biggest health information barrier. The five highest experienced health information barriers on PHIBS by respondents were *Not having many health activities near their home to learn* (3.9, sd:1.5), followed by *No need for information, I already know how to take care during pregnancy* (3.7, sd:1.5) and *Not much health information about pregnancy on media* (3.4, sd:1.4), *Books and*

*magazines about pregnancy are expensive* (3.3, sd:1.2) followed by *Do not know how to find health information* (3.3, sd:1.6) (Table 14).

**Table 14: Health information barriers**

	PHIBS	Mean	Std. Deviation	LCI	UCI
1	Not many health activities are near my home to learn	3,88	1,469	3,69	4,07
2	No need for information I already know how to take care during pregnancy	3,70	1,544	3,51	3,90
3	Not much health information about pregnancy on media	3,37	1,356	3,19	3,54
4	Books and magazines about pregnancy are expensive	3,32	1,161	3,17	3,47
5	Do not know how to find health information	3,28	1,642	3,07	3,49
6	Not using the computer to learn about pregnancy and health	3,10	1,674	2,89	3,31
7	Information from health care providers is not helpful	2,79	1,461	2,60	2,97
8	Books or magazines hard to read	2,55	1,341	2,38	2,72
9	Do not know how to use the internet	2,52	1,603	2,32	2,72
10	Too much information stresses me out	2,47	1,634	2,26	2,68
11	Finding a bus or car to library, childbirth classes, hospital is not easy	2,46	1,728	2,24	2,68
12	Uncomfortable asking doctor or nurse questions	2,38	1,675	2,17	2,60
13	Not easy to find friend or family member to answer my questions	2,28	1,574	2,07	2,48
14	Time consuming to find health information	2,17	1,398	1,99	2,34
15	Knowing more information will not help	2,00	1,286	1,84	2,17
	PHIBS Barriers Total	42,27	6,570	41,43	43,10

The five lowest experienced health information barriers on PHIBS by respondents were *Finding a bus or car to library, childbirth classes, hospital is not easy* (2.5, sd:1.7), followed by feeling *Uncomfortable asking doctor or nurse questions* (2.4, sd:1.7) and *Not easy to find friend or family member to answer my questions* (2.3, sd:1.6), *Time consuming to find health information* (2.2, sd:1.4) and lastly *Knowing more information will not help* (2.0, sd:1.3) (Table 15).

**Table 15: Health information barriers of respondents**

How much do you agree or disagree with...	Unemployed (n=144, %) Mean (sd)	Employed (n=96, %) Mean (sd)	Total (n=240, %) Mean (sd)	Chi-square test X <sup>2</sup>	p-Value
1. Not many health activities are near my home to learn	99 (68.7%) 3.8 (sd=1.5)	72 (75.0%) 4.0 (sd=1.4)	171 (71.2%) 3.9 (sd=1.5)	X <sup>2</sup> =2.7	.599
2. No need for information, I already know how to take care during pregnancy	102 (70.8%) 3.7 (sd=1.5)	67 (69.8%) 3.7 (sd=1.6)	169 (70.4%) 3.7 (sd=1.5)	X <sup>2</sup> =0.8	.999
3. Not much health information about pregnancy on media	79(54.9%) 3.4 (sd=1.3)	47(49.0%) 3.3 (sd=1.4)	126 (52.5%) 3.5 (sd=1.6)	X <sup>2</sup> =2.7	.602
4. Books and magazines about pregnancy are expensive	60 (41.7%) 3.3 (sd=1.2)	37 (38.5%) 3.4 (sd=1.1)	97 (40.4%) 3.3 (sd=1.2)	X <sup>2</sup> =4.4	.356
5. Do not know how to get health information	71 (49.3%) 3.2 (sd=1.6)	56 (58.3%) 3.4 (sd=1.6)	127 (52.9%) 3.3 (sd=1.6)	X <sup>2</sup> =1.8	.170
6. Do not use computer to learn about pregnancy and health	65 (45.1%) 3.1 (sd=1.6)	47 (49.0%) 3.1 (sd=1.5)	112 (46.7%) 3.1 (sd=1.7)	X <sup>2</sup> =0.4	.561
7. Information from care providers is not helpful	56 (38.9%) 2.8 (sd=1.5)	32 (33.3%) 2.8 (sd=1.4)	88 (36.7%) 2.8 (sd=1.5)	X <sup>2</sup> =3.3	.502
8. Books or magazines hard to read	29 (20.1%) 2.5 (sd=1.3)	22(22.9%) 2.7 (sd=1.4)	51 (21.2%) 2.5 (sd=1.3)	X <sup>2</sup> =3.0	.557
9. Do not know how to use the Internet to search for pregnancy health information	43 (29.9%) 2.5 (sd=1.6)	28 (29.2%) 2.5 (sd=1.6)	71(29.6%) 2.5 (sd=1.6)	X <sup>2</sup> =0.1	.908
10. Too much health information stress me	58 (40.3%) 2.5 (sd=1.6)	31 (32.3%) 2.4 (sd=1.6)	89 (37.1%) 2.5 (sd=1.6)	X <sup>2</sup> =4.3	.363
11. Finding a bus or car to library, childbirth classes, hospital not easy	52 (36.1%) 2.5 (sd=1.7)	31 (32.3%) 2.3 (sd=1.7)	83 (34.6%) 2.5 (sd=1.7)	X <sup>2</sup> =1.7	.796
12. I don't feel comfortable asking doctor or nurse questions	58(40.3%) 2.6 (sd=1.7)	22 (22.9%) 2.0 (sd=1.5)	80 (33.3%) 2.4 (sd=1.7)	X <sup>2</sup> =9.3	.054*
13. I cannot easily find friend or family member to answer questions	42 (29.2%) 2.4 (sd=1.6)	22 (22.9%) 2.2 (sd=1.5)	64 (26.70%) 2.3 (sd=1.6)	X <sup>2</sup> =1.2	.283
14. Time consuming to find health information	38 (26.4%) 2.3 (sd=1.4)	16 (15.6%) 2.0 (sd=1.1)	54 (22.5%) 2.2 (sd=1.4)	X <sup>2</sup> =5.3	.254
15. Knowing more information will not help me	28 (19.4%) 2.1 (sd=1.3)	13 (13.5%) 1.9 (sd=1.2)	41 (17.1%) 2.0 (sd=1.3)	X <sup>2</sup> =2.4	.656

Chi-square test of Independence with \*p-value set at <0.05.

There were near significant differences in reporting health information barriers and occupational activity barriers: *I don't feel comfortable in asking doctor or nurse questions* (X<sup>2</sup>=9.3, p=.054) with more unemployed respondents reporting this as a barrier (40.2% vs 22.9%) (Table 16).



**Table 16: Significant difference of health information barriers and maternal age**

How much do you agree or disagree with...	Normal maternal age (n=152, %)	Advanced maternal age (n=88, %)	Total (n=240, %)	Chi-square test (X <sup>2</sup> )	p-Value
9. Do not use computer to learn about pregnancy and health	62 (40.8%) 3.7 (sd=1.5)	50 (56.6%) 3.1 (sd=1.7)	112 (46.7%) 3.5 (sd=1.6)	X <sup>2</sup> =5.7	P=.001*
10. Do not know how to use the Internet to search for pregnancy health information	37 (24.3%) 3.7 (sd=1.5)	34 (38.6%) 3.1 (sd=1.7)	71 (29.6%) 3.5 (sd=1.6)	X <sup>2</sup> =5.5	P=.019*
1. Too much health information stresses me	63 (41.4%) 2.6 (sd=1.6)	26 (29.5%) 2.2 (sd=1.6)	80 (37.1%) 2.5 (sd=1.6)	X <sup>2</sup> =9.4	P=.052*

Significant difference of \*p-value set at <0.5

Significant differences were also noted between the reported health information barriers and maternal age in the following: *Do not use computer to learn about pregnancy and health* (X<sup>2</sup>=5.7, p=.001), followed by *Do not know how to use the Internet to search for pregnancy related health information* (X<sup>2</sup>=5.5, p=.019), with higher barriers reported by respondents of advanced maternal age. However, more barriers were reported by younger respondents in *Too much health information stresses me* (X<sup>2</sup>=9.4, p=.052) (Table 16).

## 5.5 Health information seeking behaviour of respondents

Health information seeking behavior or use of various sources of health information was measured through 7 items on PHISS. Ten health information source items in this study were originally retrieved from PHISS, but were adapted from the original questionnaire in (Shieh et al. 2009) by removing culturally non-relevant items such as health fairs.

### 5.5.1 Health information seeking

The total mean score of the information seeking of pregnancy health information sources on the PHISS scale was 4.2 (sd: 5.9) (95% CI 3.8 – 4.8). Overall health information seeking (i.e. use of different sources) was very low with most of the



respondents indicating that they seldom use these sources. However, the most frequently used source was to *Ask doctor, nurse or other professionals questions about pregnancy* (70.4%, n=169) (Table17).

**Table 17: Health information seeking behaviour**

	Health information seeking	Mean (sd)	95%CI	Used sources frequently
1	I ask doctor, nurse or other professionals questions about pregnancy	1.3 (1.1)	1.2-1.5	169 (70.4%)
2	I listen to talks given by clinics to find pregnancy health information	0.8 (1.2)	0.7-1.0	40 (16.7%)
3	I ask family and friends about pregnancy health information	0.6 (0.7)	0.6-0.7	129 (53.8%)
4	Read books and brochures to get health information	0.5 (0.9)	0.4-0.6	66 (27.5%)
5	Watch TV or listen to radio to get health information	0.4 (0.7)	0.3-0.5	66 (27.5%)
6	Read newspapers or magazines to find health information	0.3 (0.7)	0.2-0.4	53 (22.1%)
7	I went to community health activities to get pregnancy health information	0.3 (0.7)	0.2-0.4	48 (20%)
	Health information seeking total	4.3 (3.8)	3.8-4.8	

The three highest ranked health information sources on PHISS were to *ask doctors, nurses or other professionals* (1.3 (1.1), 0-3 [169 (70.4%)]), followed by respondents that *listens to talks given by clinics* (0.8 (1.2), 0-3 [40 (16.7%)]), and then *ask family and friends about pregnancy* (0.6 (0.7), 0-3 [129 (53.8%)] (Table 17).

The three lowest health information sources on PHISS were to *watch TV or listen to radio* (0.4 (0.7), 0.3 [66 (27.5%)]), followed by respondents that *read newspapers or magazines to sought pregnancy related information* (0.3 (0.7), 0-3 [53 (22.1%)]), and then respondents who *went to community health activities* (0.3 (0.7), 0.3 [48 (20.0%)]).

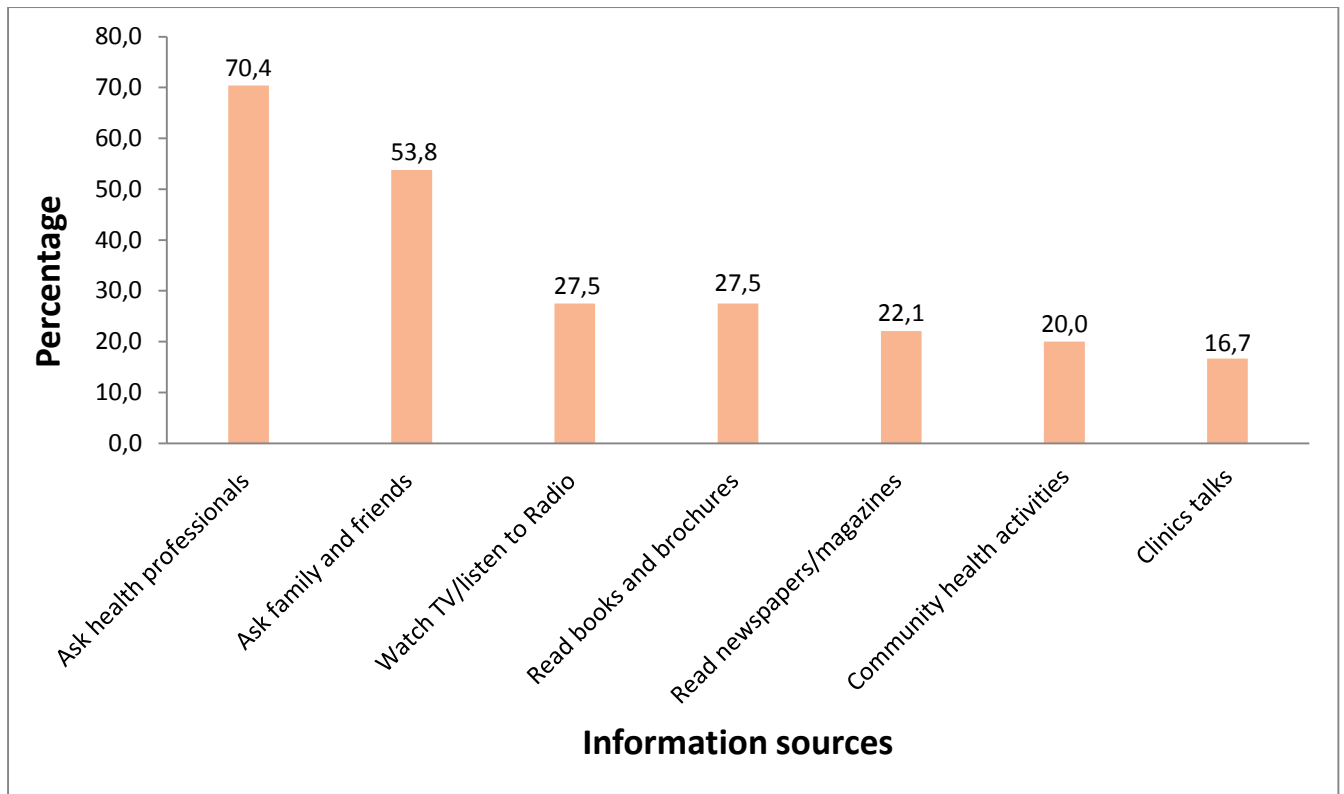


Figure 5: Information sources of pregnant women

Figure 5 above shows the overall preference ratings from pregnant women ranking of the information sources. Almost all the pregnant women ranked “ask health professionals” highest and this is followed by “ask family and friends.” The above figure indicates clinic talks as the least preferred information source for most pregnant women.

There were significant associations between health information seeking behavior and having a medical condition in *I watch TV and listen to radio* ( $U=3.5, p=.001$ ) and *I read books and brochures* ( $U=2.5, p=.012$ ) and *I read newspapers and magazines* ( $U=4.1, p=.001$ ) (Table 18).

**Table 18: Association between the health information sources and medical statuses of pregnant women**

In the past month, I found or learned about pregnancy when...	No medical condition (n=215, %) Mean (sd=)	Medical condition (n=25, %) Mean (sd)	Total (n=240, %) Mean (sd)	Mann-Whitney test (U)	p-value
5. I watch TV or listen to Radio to find health information.	52 (78.8%) 0.3 (sd=0.7)	14 (21.2%) 0.9 (sd=1.0)	66 (27.5%) 0.4 (sd=0.7)	U=3.5	P=.001*
4. I read books and brochures to find health information.	54 (81.8%) 0.4 (sd=0.8)	12 (18.2%) 09 (sd=1.1)	66 (27.5%) 0.5 (sd=0.9)	U=2.5	P=.012*
7. I read newspapers or magazines to find health information.	40 (75.5%) 0.3 (sd=0.6)	13 (24.5%) 1.0 (sd=1.2)	53 (22.1%) 0.3 (sd=0.7)	U=4.1	P=.001*

Mann-Whitney (U) test with \*p-value set at <0.5.

## 5.6 Summary comparison of health information needs, barriers and needs

To assess the interaction of health needs, health barriers and health information-seeking scores of respondents, respondents were grouped in combinations of health information needs and barriers (Table 19).

**Table 19: Comparison of information needs and barriers and seeking behaviors**

Combination of health information needs and health information barriers	N (%)	Health Information seeking Mean (sd)	95% CI
1. High health information needs and high health information barriers	52 (21.7%)	5.3 (5.3)	3.8-6.8
2. High health information needs and low health information barriers	62 (25.8%)	4.3 (3.5)	3.4-5.2
3. Low health information needs and low health information barriers	65 (27.1%)	4.3 (3.0)	3.6-5.0
4. Low health information needs and high health information barriers	61 (25.4%)	3.4 (3.3)	2.6-4.3

As can be seen from the table above, although the respondents were evenly distributed across the four categories, the highest health seeking behavior is seen in respondents with high information need and high health information barriers (mean: 5.3, sd=5.3).

## 5.7 Factors predicting information seeking behavior

A multiple linear regression model was used to assess the ability of two measures (health information needs (PHINS) and health information barriers (PHIBS), to predict health information seeking behaviours (PHIS) after controlling for the influence of two significant variables (age and medical diagnosis) which were found to be statistically correlated with information-seeking.

Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The multiple linear regression model was significant ( $F=6.8$ ,  $df$  4,  $p<.001$ ), explaining 32% of the variances. After the covariates (age and medical diagnosis) were entered into a multiple linear regression along with the barrier and needs predictors and the information-seeking outcome variables the predictor of information needs remained significant in predicting information-seeking (higher than average needs 4.8 vs less than average needs 3.8,  $\beta=.125$ ,  $P < .044$ ). The predictive variables were having a medical diagnosis (6.9 vs 4.0,  $\beta =.257$ ,  $P<.001$ ) and being of normal reproductive age compared to advanced maternal age (4.8 vs 3.5,  $\beta=.176$ ,  $P=.005$ ) (Table 20).

**Table20: Multiple regression results**

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	4.175	.442		9.448	.000	3.304	5.045
Needs categories	.963	.476	.125	2.022	.044	.025	1.902
R 10 year age groups	-1.404	.495	-.176	-2.839	.005	-2.378	-.430
Medical diagnoses	3.237	.792	.257	4.084	.000	1.675	4.798
Barrier Categories	-.338	.483	-.044	-.699	.485	-1.289	.614

## 5.8 Summary of the chapter

This chapter shed light to the quantitative results obtained from two Khayelitsha PHC facilities. The results comprised of the socio-demographic profile, obstetric profile and clinical picture of the respondents. The study results showed statistical significance in certain pregnancy health education needs items (lifestyle education needs, medication education needs, health information barriers and health information sources). Nonetheless, the results did not show association in health information seeking ability and psychosocial education needs. The results will be further discussed in the next chapter in relation to the figures, tables and central tendencies.



## Chapter Six

### DISCUSSION

#### 6.1 Introduction

This chapter discusses the quantitative findings in relation to the three objectives and related research questions of this study. It includes a discussion of the lifestyle educational needs, pregnancy related education needs, medication educational needs, psychosocial educational needs, pregnancy health information barriers, health information sources of pregnant women and provides a conclusion. The literature on the study topic was sparse, which limited the support of discussed results.

This chapter will also discuss the proposed study null hypotheses with regards to the study findings in each relevant section. The null hypotheses of the study were: There are no associations between the health information needs and socio-demographic characteristics of pregnant women; There are no associations between the health information barriers and socio-demographic characteristics of pregnant women; There are no associations between the health information sources and socio-demographic characteristics of pregnant women; and There are no associations between the health information sources and socio-demographic characteristics of pregnant women.

In addition, as this study duplicates, the study conducted by Shieh et al. (2009), this chapter also used to discuss the findings of this study in terms of their study.

## 6.2 Demographics characteristics of the respondents

The sample of the study comprised of only black African isiXhosa speaking pregnant women, the majority of whom were less than 35 years of age (63.3%). This suggests that in these two PHC settings, most pregnant women have their children before an advanced maternal age which is normally associated with complications. The majority of pregnant women in the study were single (70%), managed to reach secondary school (75.8%) and almost a half of the women were unemployed. Thus the sample was representative of poor communities which could impose disadvantages on pregnant women in engaging fully with the provided healthcare system as suggested by Song et al. (2013) and Kamari et al. (2013) where it was discovered that most pregnant women who were single and had experienced unintended pregnancies, arose from poor family planning that was the result of illiteracy. More than half of the women (57.9%) were pregnant for the second, third or fourth time, which is typical in communities with challenging socio-economic conditions.

The majority of the women lived either with the baby's father (50.0%) or with family members (45.5%). Husbands or partners of pregnant women are the key gate keepers in supporting the access to maternal health care service (Bhutta, 2013). This findings might have a positive influence on the pregnancy health information seeking ability of pregnant women, since they experience much needed support at home that assists them in making valuable decisions about pregnancy care.

## **6.3 Pregnancy health information needs**

### **6.3.1 Pregnant related information needs**

In many situations during pregnancy, the socio-cultural views concerning the threats to pregnancy may be a deciding factor in the manner in which women seek pregnancy related healthcare services (Dako-Gyeke et al. 2013). Almost all the women in this study (96.3%) wanted to know more about the danger signs during pregnancy. This can be attributed to the women's desire to ensure the health of the foetus. However, studies have shown that lack of awareness of danger signs during pregnancy could lead to unpreparedness for normal birth or complication readiness (Mbalinda et al. 2014).

The majority of the women (95.4%) indicated a need to know more about the growth and development patterns of the baby during pregnancy. This study has shown the natural desire and curiosity of the women to understand more about the pregnancy process. Consequently this means that the pregnant women would like to know more about the abnormalities that may arise later in pregnancy. The results of this study agree with the results of the Gao, Larsson & Leo (2013) study which discovered that information on foetal development during pregnancy was the health information most frequently sought after by the pregnant women in their Internet use study.

Most of respondents (79.2%) wanted to know more about breast feeding their babies. The women's desire to know more about breastfeeding supports Grimes, Forster and Newton (2014) discovery that many women wanted to discuss breastfeeding topics and also felt uneducated about breast feeding.



The findings of the study also show significant associations between health education needs on the information of danger signs of pregnancy and the number of pregnancies the woman have had (96.3%,  $U=2.7$ ,  $p=.023$ ), where the primigravida respondents (mean: 4.6;  $sd=0.7$ ) had higher needs than multigravida respondents (mean: 4.5;  $sd=0.6$ ). However, the relationship between their health behaviour and information on growth and development of the baby during pregnancy approached a significant association (95.4%,  $U=1.8$ ,  $p=0.70$ ), where the primigravida respondents (mean: 4.7;  $sd=0.6$ ) had higher health information need compared to multi-gravida respondents (mean: 4.5;  $sd=0.9$ ).

This relationship between the number of pregnancies and pregnancy related education needs demonstrates that the more pregnancies the women had previously had the more eager they were to access health information.

### **6.3.2 Lifestyle education needs**

The health education needs of the pregnant women were measured using PHINS scale. The PHINS scale in this study has showed a total mean score of 80.5 (range: 42-100,  $sd=23.8$ ) in the measured 20 pregnancy health information needs. The study total mean implies that there is high information needs demand on health information needs by pregnant women. The study's findings have displayed higher health information needs compared to the study conducted by Shieh et al. (2009) where their health information needs score was 72.66 (range:39-100,  $sd=17.58$ ).

On the PHINS scale, the respondents indicated a low (52.5%) and high (47.5%) score on health information needs. This score reveals that the respondents high and low health information needs requires the same attention, although the respondents' high health information needs may require more attention.

Most of the lifestyle educational needs in this study were highly sought after by almost by all the women in the study. This shows that pregnant women are aware and concerned about the lifestyle changes during pregnancy and hence the demand for lifestyle education information was fairly high.

The majority of respondents needed health education on prenatal vitamins during pregnancy (89.2%). The possible explanation for this finding could be the awareness of pregnant women about the importance of taking essential vitamins during pregnancy. The study supported the findings of Lucas et al. (2014) who indicated that the majority of pregnant women were taking prenatal vitamins during pregnancy, although over half complained of not receiving adequate prenatal vitamins from health care professionals. They further stated that this complaint could be due to a lack of knowledge about the prenatal vitamins necessary during pregnancy.

The majority of the women wanted to know more about the kinds of food that they should and shouldn't eat during pregnancy. This finding is consistent with the findings of Lee et al. (2016) in Australia, that pregnant women had limited knowledge about nutritional food intake and needed more information to improve their current lifestyle. This could be due to the lack of information that the women had, as a result of their limited access to information sources, such as health care professionals, to learn more about nutritional intake. This was confirmed in a study conducted by Arrish, Yeatman & Williamson (2014), where they found that midwives lack the essential skills to deliver suitable nutritional guidance.

The findings of the study revealed that low number of women welcomed information about the methods and use of contraceptives after pregnancy and suggest that this need will enable women to receive proper health information that will assist them in

making informed choices and decisions about pregnancy. The study conducted by Dehlendorf et al. (2016) in San Francisco Bay also show that most pregnant women were eager to receive information about contraception although a lack of patient-midwife communication was experienced.

Only a small minority of women in the study indicated a need to receive information about the correct use of seat belts during pregnancy. This could be because few of the women owned cars or ever found themselves sitting in the front of a motor vehicle as a passenger; hence they showed no interest in it. The study by Song et al.(2013) in Milwaukee (USA) also found low numbers of pregnant women wanted information about wearing seat belts in cars supports the finding of this study that a minority of women in the study wanted to know more about wearing seat belts.

The study has found a significant association between lifestyle education needs and maternal age of respondents especially on balancing of rest and activity during pregnancy (89.2%,  $U=1.9$ ,  $p=.047$ ), where the advanced maternal age group (mean: 4.3;  $sd=0.9$ ) had a higher information need than the normal maternal age group (mean: 4.0;  $sd=1.1$ ).

There is also a significant association between lifestyle education needs and employment status when considers how using illegal drugs affects the baby and pregnancy (87.1%,  $U=2.7$ ,  $p=.023$ ), Here the unemployed group mean (4.2;  $sd=1.1$ ) was higher than the employed group mean for lifestyle education needs (4.1;  $sd=1.0$ ). This was followed by the association between lifestyle education needs and employment status on the need to have information on how smoking affects the baby (82.1%,  $U=2.7$ ,  $p=.030$ ). Here the unemployed group mean (4.0;  $sd=1.2$ ) on this information need item was higher compared to the employed group mean (3.9;

sd=1.3). Similarly, when considers on how drinking alcohol affects the baby and pregnancy (80.8%,  $U=2.5$ ,  $p=.008$ ), the unemployed group mean (4.1; sd=1.1) was higher than the employed group mean (3.7; sd=1.4) on this health information need.

These significant associations show the need to provide pregnant women with adequate information about the modification of their daily activities during pregnancy as did Ackerman et al. (2015) study in Australia supported the notion that pregnant women need more information about lifestyle modification during pregnancy.

### **6.3.3 Psychosocial education needs of pregnant women**

Overall, more than 80% of pregnant women needed health information in dealing with stress during pregnancy. This finding was not surprising given the major psychological adjustments that pregnant women go through during pregnancy, especially in low income communities where support from spouses, family members and friends is usually low. The finding validates previous findings that most pregnant women wanted health information on stress management from their health care professionals (Leiferman, Sinatra & Huberty, 2014).

A minority of the women in the study wanted health information about HIV testing and prevention. This is a missed opportunity for educating women about HIV and the prevention of mother to child transmission programme which saves a huge number of lives. The results of Conrad et al. (2012) study in Africa showed that HIV testing was not common in most pregnant women and health care professionals were not willing to offer health information on prevention of mother to child transmission.

The results of the study showed that pregnant women living alone (mean=3.8; sd=1.6) had higher psychosocial information needs about HIV testing and prevention

compared to their counterparts who lives with their partners (mean=3.5; sd=1.6). This difference in the results might be influenced by the low levels of support systems available to pregnant women that live alone, which might have enhanced their need for information about HIV testing and prevention.

#### **6.3.4 Medication education needs**

Nearly three quarters of the women (73.8%) showed the need to know about safe and unsafe medications during pregnancy. The concerns of pregnant women in knowing more about medications might be created by anxiety and the wish to keep the foetus for the full term. The study findings resonate with Hameen-Anttila et al. (2013) in their multinational study, where most pregnant women were seeking advice on medication use from Internet searches and midwives.

There was a significant association between medication education needs, on which medications are safe or unsafe to take during pregnancy, and the number of pregnancies women in the study had undergone (76.2%,  $U=5.8$ ,  $P=.035$ ). The primigravida respondents mean (4.3; sd=0.9) shown higher information need than multigravida respondents mean (3.8; sd=1.4). This indicates an existing relationship between the medication education needs of pregnant women and the number of pregnancies a women had had.

#### **6.4 Pregnancy health information barriers**

The PHIBS scale measured the health information barriers of the women in the study -a total mean score of 44.0 (sd:22.5) on the 15 measured health information barriers was recorded. These health information barriers are of concern when taking into account the amount of health information that women need during pregnancy. The barriers to health information of respondents in this study are higher than in other

relevant studies, for example the study conducted by Shieh et al. (2009) had a total mean score of 35.4 (range:20-55).

The study showed that the majority of women surveyed experienced few health activities in the community and that many of the health activities in the community were not specifically meeting the perceived needs and interests of the women. These findings are opposed by the study of Sakeah et al. (2014) in Ghana where they found that most pregnant women knew about the existence of the health community activities and that 80% of pregnant women had sought health information skills through them.

The majority of the women on the study identified the use of the Internet to search for pregnancy related information as a health information barrier. This finding could have been influenced by the social, educational and financial statuses of the women in the study. The costs involved in the use of the Internet prevent the women from using it, thus limiting their experiences of the Internet and hence in the community it is not seen as an accepted health information source. This contradicts the finding of Huberty et al. (2013) in United States of America where almost all pregnant women accessed the Internet either via their phones, computers and other technology devices to search for pregnancy related health information.

Some of the surveyed women found that health information given to them during their pregnancy was not helpful. This study emphasis how important it is for health care professionals to encourage women to use alternate health information sources. This is a missed health information opportunity which should have been covered with information from other health information sources. The findings of Sui, Turnbull & (Dodd 2013) in Australia, differed from this study as they reported when seeing an

increase in knowledge after pregnant women interacted with health care professionals.

The study showed significant differences between health information barriers (*not using computer to learn about pregnancy and health*) and maternal age (46.7%,  $X^2=5.7$ ,  $p=.001$ ), where the biological maternal group (mean: 3.7,  $sd=1.5$ ) had a higher health reported information barrier than the advanced maternal age group mean (3.1,  $sd=1.7$ ). Similarly between health information barriers (*not knowing how to use the Internet to search for pregnancy health information*) and maternal age (29.6%,  $X^2=5.5$ ,  $p=.019$ ), the biological maternal age group mean (3.7,  $sd=1.5$ ) reported health information barrier was higher than that for the advanced maternal age group (mean: 3.1,  $sd=1.7$ ). Also significant difference between health information barriers (*too much health information stresses me*) and maternal age (37.1%,  $X^2=9.4$ ,  $p=.052$ ), shows that the biological maternal age (mean: 2.6;  $sd=1.6$ ) group had higher reported health information barriers than the advanced maternal age group (mean: 2.2;  $sd=1.6$ ).

This indicates that the women in the study experienced health information barriers to the antenatal care provided. It important for health care professionals to reduce the health information barriers that pregnant women experience on their lives when trying to engage with health care information.

### **6.5 Pregnancy health information sources**

The health information sources of respondents had a total mean score of 4.2 ( $sd=5.9$ ) on the seven health information sources. The results of the study show that the women surveyed showed lower information-seeking behaviour. Which contradicts the results of the Shieh et al. (2009) study in which the health information

sources were higher (mean:17.6, sd=3.8) showing high health information-seeking behaviours.

Our study found that most of the women trusted the health information given by health care professionals. The level of trust might have been influenced by the lack of health literacy skills that made it difficult for them to access health information from another source or to verify the information they have received against another source. A study conducted by Willis et al. (2015) in Australia reported similar results, with the majority (approximately 80.5%) of pregnant women in their study trusting health professionals with the pregnancy related information provided to them. However, the finding was contradicted by clinics talks bury rated as the lowest use of health information.

Information on health information sources indicated low health information seeking behavior from pregnant women which may inform the method that pregnant women prefer in obtaining health information. The study of Shieh et al. (2009) emphasized the influence that health information delivery strategies might have on pregnant women in seeking health information. The study conducted by Heaman et al. (2014) in Canada also supports this and the findings of their study were that many of the women wanted to learn about baby dynamics from listening to health care professionals.

Our study found a significant association between health information sources and the medical status on pregnant women in the health seeking ability of watching TV or listening to radio to find health information (27.5%,  $U=3.5$ ,  $p=.001$ ). Here the pregnant women with medical condition (mean: 0.9; sd=1.0) show higher health information seeking ability than pregnant women with no medical condition (mean:



0.3; sd=0.7). A second association was found between health information sources and medical status on pregnant women in the seeking ability of reading newspapers or magazines to find health information (22.1%,  $U=4.1$ ,  $p=.001$ ). Here the pregnant women with medical condition (mean: 0.9; sd=1.1) possessed higher health information seeking ability than the pregnant women who had no medical condition (mean: 0.4; sd=0.8).

The last significant association found was between health information sources and medical status on the health seeking ability of reading books and brochures to find health information (27.5%,  $U=2.5$ ,  $p=.012$ ). Here the pregnant women with medical condition (mean: 1.1; sd=1.2) had higher seeking ability than the pregnant women with no medical condition (mean: 0.3; sd=0.6). Although the health information seeking ability of pregnant women in this study is low compared to other studies, these significant associations indicates the level of confidence of the pregnant women in seeking pregnancy information on print and broadcast media. This significance is supported by another study in United States of America which showed that half of postpartum women sought books, brochures and magazines as their health information sources (Ohlendorf & Weiss, 2012).

## **6.6 Factors predicting information seeking behavior**

The study showed positive relationship between information needs and health seeking behavior, where the high average information needs (mean: 4.8) resulted to increased health information seeking behavior compared to less average information needs (mean: 3.8). Moreover, the relationship revealed a significant association ( $\beta=.257$ ,  $p=.044$ ) between information needs and health information seeking behavior. However, the most significant predictive variables of health information seeking behavior were maternal age and medical diagnosis.

The multiple regression model showed that when there are high health information needs and high health information barriers, the respondents showed high health information-seeking behaviors. This relationship between the high health information needs and health information barriers demonstrates that the pregnant women strove to find more health information when they experience high health information barriers. This could be concluded as the need to reduce the health information barriers and increase the health information seeking behaviors of pregnant women. This implies that health care professionals should identify those categories of pregnant women, such as single women and illiterate women, who are likely to experience high health information barriers and increase their health information seeking behavior.

## **6.7 Conclusion**

This study was undertaken to investigate the health education needs of pregnant women on their first antenatal visit at two PHC facilities in Khayelitsha. The respondents in the study reported high education needs compared to other studies. The majority of the respondents desired to obtain their health information from doctors, nurses and other health professionals. However, the respondents have shown low use of health information sources to obtain health information. The study revealed that pregnant women were experiencing health information barriers. The study showed significant associations and differences in health information needs (lifestyle, pregnancy related education needs, psychosocial and medication), health information barriers and health information sources. The final chapter will further focus on the conclusions, limitations and recommendations of the study.

## Chapter Seven

### CONCLUSION AND RECOMMENDATIONS

#### 7.1 Introduction

This study has provided valuable insight on the health education needs of pregnant women in Cape Town's low-income primary health care facilities. This study shows the high levels of information needs of pregnant women at the PHC facilities in Khayelitsha, a poor community, with a high rate of unemployment and illiteracy. This chapter will present the key findings, recommendations and conclusions from the study.

#### Key findings

- The women had high overall health education needs compared to other studies.
- The health education needs of pregnant women were not homogenous to all pregnant women.
- The highest health information need was how the baby grows and develops during pregnancy, and the lowest information need was how to use seat belts properly during pregnancy.
- The study showed the majority of the women indicated that health care professionals such as nurses and midwives were the preferred health information source but they had low interest in listening to clinic talks provided by the health care professionals for health information.
- The health information seeking score indicates the health information seeking ability of pregnant women is very low when compared with similar studies.
- The high information barrier score was related to not having accessible several health activities to learn from home. Among the low information barriers were

the difficulties to find a friend or family member to ask pregnancy question and the feeling of discomfort in asking health nurses and doctors questions.

## **7.2 Recommendations**

Based on the results received from the study, the following recommendations are to made to assist in the delivery of health education to pregnant women, further research and how to strengthen health education practice and in nursing education.

The recommendations for the study are as follows:

### **7.2.1 Recommendations for further research**

The research should be expanded to other primary health care facilities in Khayelitsha, and other facilities in the Western Cape. Further research on other antenatal visits of pregnant women could also provide valuable information in the understanding of the health education needs of pregnant women. A qualitative research study may further explore the low interest of pregnant women in participating in health talks - a method that is frequently used in disseminating health information in primary health care facilities. More research is also needed to explore the relationship between maternal age, medical conditions and health information seeking and health information barriers.

It was also noted that in study, the PHIBS recorded a low Cronbach's alpha (Cronbach's alpha .221), related to the phrasing of the items with four items being phrased positively and the rest negatively. It is recommended that the wording of this scale should be revised if the scale to all positive statements if the scale was to be administered in this setting.

### **7.2.2 Nursing practice**

The nurses and midwives working in antenatal care units of PHC facilities should tailor their health education as to cater for different health information needs of pregnant women. Furthermore, the nurses should build a good interpersonal relationship with pregnant women, as to take away the fear that women have in asking pregnancy related questions.

The maternity health care professionals should enforce the seeking of different health information by pregnant women, for an example, pregnant women should be given skills or strategies on how to find friends or family members to access pregnancy health information.

### **7.2.3 Policy**

There should be policies developed by PHC facilities to guide the health education practice of pregnant women at the first antenatal care visit. Shiferaw et al. (2013) recommended that emphasis should be placed on the importance of communication between the health care provider and their clients in the development of guidelines for health care training.

### **7.2.4 Nursing education**

The universities and colleges should include health education in curriculum of midwifery courses to ensure that students receive proper health education and health promotion skills that are needed in the nursing practice.

### **7.3 Limitation of the study**

There were number of limitations in the study. Firstly there were limitations in sampling, the findings of the study could only be generalised to the first antenatal visit of pregnant women attending primary health care facilities in Khayelitsha. The second sampling limitation was that the study did not differentiate between the numbers of pregnancies that the women had during their primary health care facilities visits, due to small numbers of respondents that each visit had. The third sampling limitation was that the study results exclusively presented the first antenatal visit and excluded all non-isiXhosa speaking respondents, as the researcher questionnaire was translated in isiXhosa. The last sampling limitation was that the study could only include a few pregnant women under the age of 18 years old as most of them didn't bring their gate keepers to the PHC on their antenatal visit.

Secondly there were limitations in data collection, the administering of the research questionnaire by the researcher might have had some unforeseen influence on the respondents' responses. The other data collection limitation was the potential recall bias on the maternal health information sources section as the surveyed women were asked to recall health information sources they had access to in the previous month. Some of the women may not have been able to accurately recall this information. However, in order to minimise this bias the timeframe for recall could be changed from a month question to a week or a number of days. The limited time allowed for respondents to complete the questionnaire may have placed them under pressure and affected their responses.

The third limitation of the study may be that a qualitative approach instead of quantitative study could have revealed more detailed results of the phenomenon

under study. The second last limitation of the study was there was a lack of literature in the area of study research.

A fourth limitation was the low internal consistency of one of the scales (PHIBS). This limitation was due to the phrasing of the barriers items on the PHIS with four items being phrased positively and the rest phrased negatively. This could have resulted in consistent completion of these items and resulting in inconsistent responses.

#### **7.4 Conclusion**

This study is among the first known to study the health information needs of pregnant women on their first antenatal visit in low-income community of Khayelitsha. Overall, the study has indicated high need for health education needs and the low use of health information sources in low-income communities of Khayelitsha. The doctors, nurses and other professionals were shown to be the most utilised source of information by pregnant women. However, health information barriers stand in the way of accessing health information.

The seeking of health information by pregnant women is indicative of a positive maternal health behaviour that benefits infant health outcomes and will possibly decrease perceived barriers to antenatal care (Song et al. 2015). This means that pregnant women need more education about the importance of accessing and seeking different types of information sources and methods of seeking them. The study findings supported the need for changes to the provision of health education to meet the needs of pregnant women.

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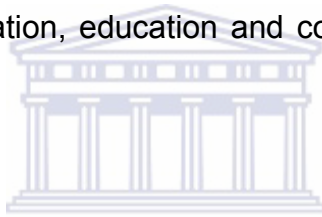
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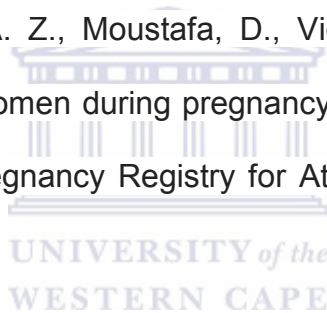
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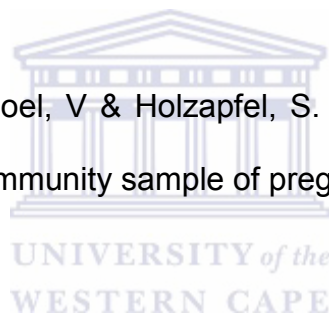
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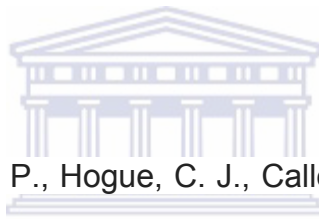
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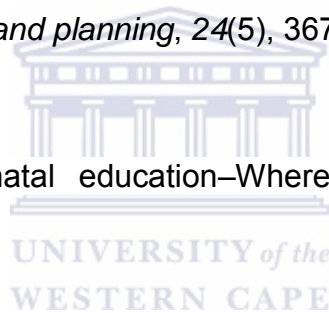
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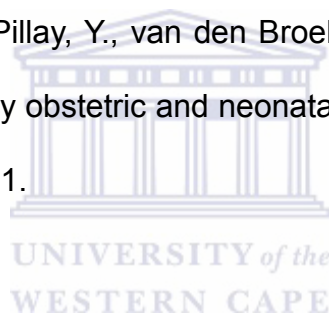
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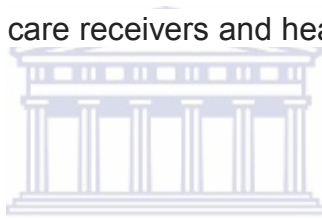
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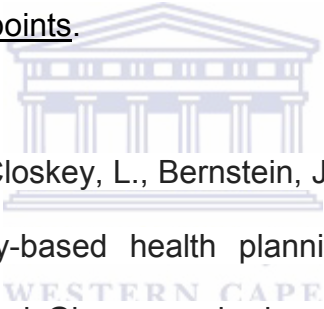
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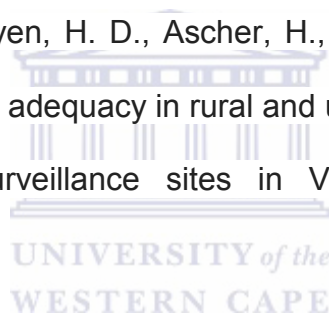
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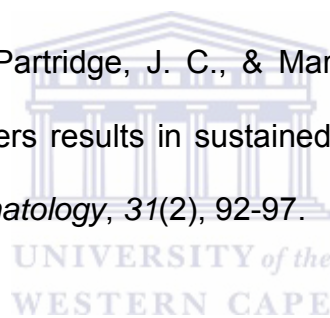
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## APPENDICES

### Appendix A: English study questionnaire

#### Administrative Information

ID:.....

#### Clinic:

Site B CHC  Mapongwana CHC

#### Demographic Information

1. How old are you?.....

2. What is your marital status?

Single  Married/living together  Separated/Divorced  Widow

3. What is your race?

African  Asian  Coloured  Other

4. Is this your first pregnancy

Yes  No

5. How many pregnancies have you had? .....

6. Do you know the duration of current pregnancy?

Yes  No  If yes Please specify.....

7. Your educational level?

Primary School  Secondary School  Tertiary qualification  Other

Tertiary qualification  No formal schooling

8. What do you do?.....

9. Employed  Unemployed  Studying  Other

If employed, what type of work do you do?.....

10. I live with?

Myself  Family  Baby's father  Other

11. Have you been diagnosed with these diseases?

Blood Pressure  Diabetes  Asthma  Other

Your answers should be what you believe you need to know and not what you think other people (like your doctor, nurses or family members) believe you should know.

**Please indicate how much you agree or disagree with the following statements:**

	<b>Disagree very much</b>	<b>Disagree</b>	<b>No opinion</b>	<b>Agree</b>	<b>Agree very much</b>
12. I need to know more health information about what I should or should not eat during pregnancy.					
13. I need to know more health information about prenatal vitamins and how much of them are needed during pregnancy.					
14. I need to know more health information about how to balance rest and activity during pregnancy.					
15. I need to know more health information about what exercise is safe for me to do during pregnancy.					
16. I need to know more health information about how smoking affects the baby and pregnancy.					
17. I need to know more health information about how drinking alcohol affects the baby and pregnancy.					
18. I need to know more health information about how using illegal drugs affects the baby and pregnancy.					
19. I need to know more health information about what the danger signs are during pregnancy					
20. I need to know more health information about how much weight I should gain during pregnancy.					
21. I need to know more health information about what to do if my labor starts early.					
22. I need to know more health information about physical abuse to women by their husbands or partners.					
23. I need to know more health information about how to properly use seat belts during pregnancy.					
24. I need to know more health information about what birth control methods to use after my pregnancy.					
25. I need to know more health information about how my baby grows and develops during pregnancy.					
26. I need to know more health information about HIV blood test and how to keep from getting HIV					
27. I need to know more health information about how to deal with stress during pregnancy.					

28. I need to know more health information about emotional changes during pregnancy.					
29. I need to know more health information about how to have safe sex that would not affect the baby and pregnancy.					
30. I need to know more health information about how to prepare for breast feeding my baby.					
31. I need to know more health information about the kinds of medications that are safe or unsafe to take during pregnancy.					

	<b>Disagree very much</b>	<b>Disagree</b>	<b>No opinion</b>	<b>Agree</b>	<b>Agree very much</b>
32. Too much health information about pregnancy stresses me out.					
33. *When I need pregnancy health information, I know how to get it					
34. It is time consuming to find health information about pregnancy					
35. Knowing more information will not help me make medical decisions during pregnancy.					
36. Books or magazines about pregnancy are hard to read.					
37. I don't feel comfortable asking my doctor or my nurse questions about my pregnancy.					
38. *I can easily find a friend or a family member to answer my questions about pregnancy.					
39. *I already know how to take care of myself when I am pregnant.					
40. Finding a way (bus or car) to get to the library, childbirth classes, hospital/clinic is not easy.					
41. Not many health activities are near my home for me to learn about pregnancy health.					
42. Books or magazines with pregnancy health information are expensive.					
43. Information from my care providers is not helpful because they have no idea about my life conditions.					
44. *I use the computer to learn about pregnancy and health.					
45. *I know how to use the Internet to search for pregnancy health information.					
46. Not much health information about pregnancy is in the newspapers, magazines or on the radio or TV.					

\*Items reversed on the questionnaire

The following statements describe how pregnant women find or learn about pregnancy health information, resources or advice. Please indicate how often you use each information source in the past month.

	<b>Almost never</b>	<b>Sometimes</b>	<b>Often</b>	<b>Almost all the time</b>
47. I watched TV or listened to the radio to get health information about pregnancy.				
48. I read newspapers or magazines in order to find health information about pregnancy.				
49. I read books or brochures to get pregnancy health information.				
50. I asked the doctor, the nurse or other health professionals questions about pregnancy.				
51. I went to community health activities in order to get pregnancy health information.				
52. I asked my family or friends for pregnancy health information.				
53. I listened to talks given by the clinic, the hospital or community centres in order to find pregnancy health information				
54. I used the Internet to find pregnancy health information				

**Thank you for your participation and may the Lord bless you.**

## Appendix B: Xhosa translated study questionnaire

### Inkcukacha Zokungeniswa

Inombolo Yesazisi.....

#### Iziko lempilo

Site B CHC  Mapongwana CHC

### Inkcukacha Zokungeniswa

1. Mingaphi iminyaka yakho?.....

2. Ubume Bomtshato?

Awutshatanga  Nitshatile/Nihlala nobabini  Niyohlukana

Umhlokokazi

3. Uloluphi uhlanga?

UmAfrika  UmAsia  Owebala  ezinye

4. Uyaqala Ukukhulelwa?

Ewe  Hayi

5. Wakhulelwa kangaphi? .....

6. Uyazazi inyanga zokhulelwa?

Ewe  Hayi  Ukuba impendulo ngu ewe cacisa.....

7. Imfundo?

Amabanga aphantsi  Amabanga aphezulu  Isidanga semfundo ephakamileyo

Ndifunda Eyunivesithi  Ezinye

8. Wenza ntoni?

Ndiyaphangela  Ndiyafunda  Andiphangeli  Ezinye

9. Ukuba uyasebenza, usebenza umsebenz onjani?.....

10. Ndihlala?

Ndedwa  Nosapho  Notata womntwana  Ezinye

11. Ukhe wafunyaniswa nezizifo?

Uxinzelelo lwegazi  Iswekile  Isifuba  Ezinye  Ayikho

Impendulo zakho mazibe yilento ucinga ukholelwa ukuba ufanele kukuyazi hayi abanye abantu (ogqirha, omongikazi ne zihlobo zakho) ocinga ukuba bakholelwa ukuba uyazi

**Bonisa ukuba uvumelana okanye awuvumelani kangakanani nale ngxelo ilandelayo**

	<b>Andivum elani kwaphela</b>	<b>Andivu melani</b>	<b>Andina mbono</b>	<b>Ndiyavu melana</b>	<b>Ndiyavu melana kakhulu</b>
12. Ndidinga ukwazi ngakumbi ngezempilo malunga nokuba nditye okanye ndingatyi ntoni xa ndikhulelwe.					
13. Ndidinga ukwazi ngakumbi ngezempilo malunga nezakha mzimba phambi kokubeleka kunye nokuba kudingeka ezingekani xa ukhulelwe.					
14. Ndidinga ukwazi ngakumbi ngezempilo malunga ngendlela zokuphumla ezizinzileyo nangexa lokusebenza ngethuba lokukhulelwa.					
15. Ndidinga ukwazi ngakumbi malunga nokuba loluphi uhlobo lokolula imisipha xa ukhulelwe.					
16. Ndidinga ukwazi ngakumbi ngezempilo malunga nokuba ukutshaya kumchaphazela njani umntwana nokukhulelwa.					
17. Ndidinga ukwazi ngakumbi ngezempilo malunga nokuba usela utywala kumchaphazela njani umntwana nokukhulelwa.					
18. Ndidinga ukwazi inkcukacha ngezempilo ngakumbi malunga nokuba ukusebenzisa amamchiza angekho semthethweni amchaphazela njani umntwana nokukhulelwa					
19. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokuba zithini impawu ezinobungozi xa ukhulelwe.					
20. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokuba kufuneka ndityebe kangakanani xa ndikhulelwe					
21. Ndidings ukwazi ingcukacha zempilo ngakumbi malunga nemandikwenze ukuba ndibekele phambi kwexesha					
22. Ndidinga ukwazi inkcukacha zempilo malunga nokuhlukumezeka ngokwasemzimbeni njengomntu ongumama ngumyeni wakhe okanye sisithandwa sakhe					
23. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokusebenzisa amabhanti okhuseleko emoto xa ndikhelelwe					

24. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nentlobo zokuthintela inzala emva kokukhulelwa					
25. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokuba umntwana wam ukhula kanjani kwaye uhluma kanjani xa ukhulelwe.					
26. Ndidinga ukwazi inkcukacha ngakumbi malunga nokuhlolwa kwegazi kwintsholongwane kunye nokuba ndizizigcina njani ekufumaneni iHIV.					
27. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokumelana nesitresi xa ukhulelwe.					
28. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokutshintsha kwemvakalelo xa ukhulelwe.					
29. Ndidinga ukwazi inkcukacha zempilo ngakumbi malunga nokubelana ngesondo okukhuselekileyo kungachaphezeli umntwana kunye nokukhulelwa.					
30. Ndidinga ukwazi inkcukacha ngakumbi malunga ngokulungiselela ukuncancisa.					
31. Ndidinga ukwazi inkcukacha malunga neentlobo zamachiza ezikhuselekileyo okanye ezingakhuselekanga.					

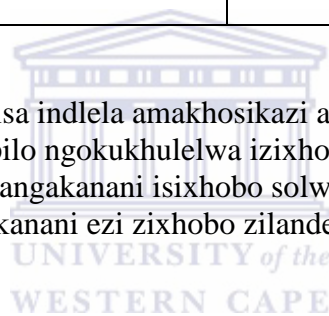
	<b>Andivum elani kwaphela</b>	<b>Andivu melani</b>	<b>Andina mbono</b>	<b>Ndiyavu melana</b>
32. Inkcukacha zezempilo ezininzi zokukhulelwa ziyandistresa.				
33. *Xa ndifuna ulwazi lwezempilo ngokukhulelwa ndiyayazi indlela yokulufumana.				
34. Kuchitha ixesha elininzi ukufumana ulwazi lwezempilo ngokukhulelwa.				
35. Ukwazi ngakumbi akuyi kundinceda ekwenzeni izigqibo zonyango ngexehsa lokukhulelwa.				
36. Incwadi okanye imagazini ezingokhulelwa kunzima ukuzifunda.				
37. Andiziva ndikhululekile ukubuza ugqirha wam okanye umongikazi imibuzo engokulelwa.				
38. *Ndingamfumana lula umhlobo okanye ulungu losapho ukuphendula imibuzo yam ngokukhulelwa				



39. *Sele ndisazi ukuba mandizikhathalele kanjani xa ndikhulelwe.				
40. Ukufumana indlela (imooto okanye ibhasi) yokufikelela kwithala lencwadi, iklasi zokubelekisa, isibhedlele okanye ikliniki akululanga.				
41. Azikho ninzi inkqubo zezempilo ezikufutshane ekhayeni lam apho ndingafunda khona ngokhulelwa.				
42. Incwadi okanye imagazini ezinenkcukacha zokukhulelwa zixabisa kakhulu.				
43. Ulwazi olusuka kubakhathaleli bam aluncedi kuba abanalo ulwazi ngemeko yobomi bam.				
44. *Ndisebenzisa ikhompuyutha ukufunda ngempilo nangokhulelwa.				
45. *Ndiyakwazi ukusebenzisa i-intanethi ukufumana ulwazi ngempilo yokukhulelwa.				
46. Alukho luninzi ulwazi malunga nokukhulelwa kumaphephandaba, imagazini, kunomathotholo okanye kumabonakude.				

\*Imiba eziguquliweyo

Ezi ngxelo zilandelayo zibonakalisa indlela amakhosikazi akhulelweyo athi afunde okanye afumanise ngayo ulwazi lwezempilo ngokukhulelwa izixhobo okanye ingcebiso. Uyacelwa ubonakalise ukuba usisebenzisa kangakanani isixhobo solwazi kwinyanga ezidlulileyo Cacisa ukuba uzisebenzisa kangakanani ezi zixhobo zilandelayo



	<b>Phantse kungenzeki</b>	<b>Ngamaxesha athile</b>	<b>Rhoqo</b>	<b>Phantse ngalo lonke ixesha</b>
47. Ndibukela umabonakude ndimamele nonomathotholo ukufumana inkcebiso zempilo malunga nokhulelwa.				
48. Ndifunda incwadi namaphephandaba ukufumana ulwazi lwezempilo malunga nokukhulelwa.				
49. Ndifuna incwadi namaphephepha abhaliweyo ukufumana inkcukacha zezempilo ngokukhulelwa				
50. Ndibuza ugqirha, umongikazi nabanye abanikezeli bempilo imibozo engokhululwa				
51. Ndiyaya kwindibano zempilo zasekuhlaleni ukuze ndifumane ulwazi				

ngokwezempilo ngokukhulelwa.				
52. Ndibuza usapho nabahlobo ngolwazi lwezempilo ulungokukhulelwa.				
53. Ndiyazimamela intetho ezinikezwa ekliniki, ezibhedlela, okanye kumaziko oluntu ukuze ndifumane ukwazi ngokukhulelwa				
54. Ndisebenzisa i-intanethi ukufumana ulwazi lwempilo nangokukhulelwa				

**Enkosi ngenxaxheba yakho yanga inkosi ingakusikelela**



## **Appendix C: Request letter to community health centre**

University of the Western Cape

School of Nursing

Private Bag x17

7535

08 March 2016

Dear Nursing Service Manager

### **RE: REQUEST TO CONDUCT RESEARCH STUDY AT MAPONGWANA CHC**

#### **Research Title: Investigating health education needs of pregnant women during in their first antenatal visit at primary health care facilities in Khayelitsha**

I am Thabani Noncungu, a Nursing Education Masters student under the supervision of Professor Jennifer Chipps from the University of the Western Cape. It is expected of me to conduct a research study as part of the masters' degree. The desired aim of the study is to investigate the health educational needs of pregnant women during their first antenatal visit at primary health care facilities in Khayelitsha. In order to fulfil the obligations I need to administer a research questionnaire to clients receiving their first antenatal care in your facility. The research questionnaire will be administered by the researcher and three trained research assistants in a requested quiet room. The duration of the study is expected to be five weeks provided that the number of clients needed is reached.

The educational needs will be identified as perceived by clients and not as perceived by nurses or midwives. The identification of the educational needs will assist the nurses or midwives in rendering health education holistically, accurate and as desired by clients. Especially in low-income communities like Khayelitsha where there are great differences in social and income status, cultures, values and belief system.

I am fully aware that requesting the client's attention will interrupt service delivery, thus the answering of the questionnaire will take place at the suitable agreed suitable time for all parties involved and 20-40 minutes will be allocated for each questionnaire. Voluntary written informed consent forms will be obtained from participating clients and the study will be conducted adhering to ethical principles as approved by the University of the Western

Cape. Your clients will not be forced to participate and will be informed that they have a right to withdraw at any stage of the study without penalty or retrieval from treatment. The research questionnaire will be only used for the purpose of the study and safely destroyed after study.

The outcome of the study will greatly improve service delivery during antenatal care period and your co-operation will be highly appreciated.

Please feel free to contact me for any further information.

Thanking in anticipation.

Yours Faithfully

THABANI NONCUNGU

Mobile Number: 0765975064

Email: 2805547@myuwc.ac.za



**Appendix D: Request letter to community health centre**

University of the Western Cape

School of Nursing

Private Bag x17

7535

08 March 2016

Dear Maternity Service Manager

**RE: REQUEST TO CONDUCT RESEARCH STUDY AT SITE B CHC**

**Research Title: Investigating health education needs of pregnant women during in their first antenatal visit at primary health care facilities in Khayelitsha**

I am Thabani Noncungu, a Nursing Education Masters student under the supervision of Professor Jennifer Chipps from the University of the Western Cape. It is expected of me to conduct a research study as part of the masters' degree. The desired aim of the study is to investigate the health educational needs of pregnant women during their first antenatal visit at primary health care facilities in Khayelitsha. In order to fulfil the obligations I need to administer a research questionnaire to clients receiving their first antenatal care in your facility. The research questionnaire will be administered by the researcher in a quiet room with the aid of trained research assistants in recruitment of respondents. The duration of the study is expected to be five weeks provided that the number of clients needed is reached.

In the study, the educational needs will be identified as perceived by clients and not as perceived by nurses or midwives. The identification of the educational needs will assist the nurses or midwives in rendering health education holistically, accurate and as desired by their clients. Especially in low-income communities like Khayelitsha where there are great differences in social and income status, cultures, values and belief system.

I am fully aware that requesting the client's participation will interrupt service delivery, thus the answering of the questionnaire will take place at the suitable agreed suitable time for all parties involved and 20-40 minutes will be allocated for each questionnaire. Voluntary written informed consent forms will be obtained from participating clients and the study will be conducted adhering to ethical principles as approved by the University of the Western

Cape. Your clients will not be forced to participate and will be informed that they have a right to withdraw at any stage of the study without penalty or retrieval from treatment. The research questionnaire will be only used for the purpose of the study and safely destroyed after study.

The outcome of the study will greatly improve service delivery during antenatal care period and your co-operation will be highly appreciated.

Please feel free to contact me for any further information.

Thanking in anticipation.

Yours Faithfully

THABANI NONCUNGU

Mobile Number: 0765975064

Email: 2805547@myuwc.ac.za



**Appendix E: Consent form**



**UNIVERSITY OF THE WESTERN CAPE**

Private Bag X 17, Bellville 7535, South Africa  
*Tel: +27 21-959 2271 Fax: 27 21-959 2274*  
E-mail: 2805547@myuwc.ac.za

**CONSENT FORM**

**Project Title: Investigating the health educational needs of pregnant women on their first antenatal visit in a primary health care facilities in Khayelitsha**

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name.....

Participant's signature.....

Date.....

## Appendix F: Information sheet



# UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

*Tel: +27 21-959 2271 Fax: 27 21-959 2274*

*E-mail: 2805547@uwc.ac.za*

### INFORMATION SHEET

**Project Title: Investigating the health education needs of pregnant women on their first antenatal visit in a primary health care facilities in Khayelitsha**

#### **What is this study about?**

This is a research project being conducted by THABANI NONCUNGU with the student number: 2805547 at the University of the Western Cape. We are inviting you to participate in this research project because you are an important person to give insight to the investigation of pregnant women on their first antenatal visit on Khayelitsha facilities. The purpose of this research project is to understand the health education needs of pregnant women and to assist the health care professionals to understand them better.

#### **What will I be asked to do if I agree to participate?**

You will be asked to complete a hard copy of the research questionnaire in the day of the antenatal visit and you will be requested to submit it in the same day to the researcher or research assistants. You will be assisted by the researcher and the research assistant when having questions during the answering of the questionnaire. The answering of the questionnaire will take 45-60 minutes of your time. The research questionnaire consists of demographic information and three sections of Likert scale questions.

#### **Would my participation in this study be kept confidential?**

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, your name will be not requested on the questionnaire but only numbers will be allocated to identify the form. Only the researcher and the supervisor will have access to research questionnaires and even then they cannot link the questionnaire in to any of the participants

To ensure your confidentiality, the answered questionnaires will be kept in safe locked place where no one will access them except the researcher and direct involved people. The answered questionnaire will immediately after the use by the



researcher be looked in a safe storage place where only he researcher will have access. The questionnaires will be destroyed by the researcher to make sure that they don't land in another person's hands. In the case of where the researcher publishes the findings of the research, the participants name and institution (primary health care facility) will not be mentioned or described in a way that it will be identifiable.

### **What are the risks of this research?**

There may be some risks from participating in this research study.

All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention. The study doesn't have a known risk by researcher, however the answering of the questionnaire may provoke unintended emotion that can cause an emotional damage to the participant. Such participants will be referred to the available counsellors for counselling and further referral will be utilised when needed for the benefit of the participant's health.

### **What are the benefits of this research?**

This research is not designed to help you personally, but the results may help the investigator learn more about your pregnancy health education needs so that they can be understood better by health care professionals. We hope that, in the future, other people might benefit from this study through improved understanding of pregnancy health education needs.

### **Do I have to be in this research and may I stop participating at any time?**

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

### **What if I have questions?**

This research is being conducted by THABANI NONCUNGU from the School of Nursing at the University of the Western Cape. If you have any questions about the research study itself, please contact THABANI NONCUNGU at: School of Nursing, University of the Western Cape. Phone Number: 0794487660,  
Email: [2805547@myuwc.ac.za](mailto:2805547@myuwc.ac.za) and the supervisor: Professor Jennifer Chipps  
Email: [jchipps@myuwc.ac.za](mailto:jchipps@myuwc.ac.za)

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Karien Jooste  
Head of Department  
University of the Western Cape  
Private Bag X17  
Bellville 7535  
[Kjooste@uwc.ac.za](mailto:Kjooste@uwc.ac.za)

Prof José Frantz  
Dean of the Faculty of Community and Health Sciences  
University of the Western Cape  
Private Bag X17  
Bellville 7535  
[chs-deansoffice@uwc.ac.za](mailto:chs-deansoffice@uwc.ac.za)

This research has been approved by the University of the Western Cape's Senate Research Committee. (REFERENCE NUMBER: *to be inserted on receipt thereof from SR*)



## Appendix G: Permission letter from DOH for Mapongwana CHC



### STRATEGY & HEALTH SUPPORT

Health.Research@westerncape.gov.za  
tel: +27 21 483 6857; fax: +27 21 483 9895  
5<sup>th</sup> Floor, Norton Rose House, 8 Riebeeck Street, Cape Town, 8001  
[www.capegateway.gov.za](http://www.capegateway.gov.za)

REFERENCE: WC\_2016RP2\_712  
ENQUIRIES: Ms Charlene Roderick

**Robert Sobukwe Rd**  
**Bellville**  
**Cape Town**  
**7535**

For attention: **Mr Thabani Noncungu**

Re: **INVESTIGATING HEALTH EDUCATION NEEDS OF PREGNANT WOMEN IN THEIR FIRST ANTENATAL VISIT AT PRIMARY HEALTH CARE FACILITIES IN KHAYELITSHA.**

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research. Please contact **Khanyisa Jacobs on (021 361 3353)** to assist you with any further enquiries in accessing the following sites:

**Michael Mapongwana CDC**

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final feedback (**annexure 9**) within six months of completion of research. This can be submitted to the provincial Research Co-ordinator ([Health.Research@westerncape.gov.za](mailto:Health.Research@westerncape.gov.za)).
3. In the event where the research project goes beyond the *estimated completion date* which was submitted, researchers are expected to complete and submit a progress report (**Annexure 8**) to the provincial Research Co-ordinator ([Health.Research@westerncape.gov.za](mailto:Health.Research@westerncape.gov.za)).
4. The reference number above should be quoted in all future correspondence.

Yours sincerely

A handwritten signature in black ink, appearing to read 'A Hawkrige', written over a circular stamp or seal.

**DR A HAWKRIDGE**  
**DIRECTOR: HEALTH IMPACT ASSESSMENT**  
DATE: 2/3/2016  
CC: M PHILLIPS

**DIRECTOR: KHAYELITSHA/ EASTERN**

## Appendix H: Permission letter from DOH for Site B Khayelitsha



### STRATEGY & HEALTH SUPPORT

Health.Research@westerncape.gov.za  
tel: +27 21 483 6857; fax: +27 21 483 9895  
5<sup>th</sup> Floor, Norton Rose House,, 8 Riebeeck Street, Cape Town, 8001  
[www.capegateway.gov.za](http://www.capegateway.gov.za)

REFERENCE: WC\_2016RP2\_712  
ENQUIRIES: Ms Charlene Roderick

**Robert Sobukwe Rd  
Bellville  
Cape Town  
7535**

For attention: **Mr Thabani Noncungu**

**Re: INVESTIGATING HEALTH EDUCATION NEEDS OF PREGNANT WOMEN IN THEIR FIRST ANTENATAL VISIT AT PRIMARY HEALTH CARE FACILITIES IN KHAYELITSHA.**

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact **David Binza on (021 360 5207)** to assist you with any further enquiries in accessing the following sites:

**Khayelitsha (Site B) CHC**

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final feedback (**annexure 9**) within six months of completion of research. This can be submitted to the provincial Research Co-ordinator ([Health.Research@westerncape.gov.za](mailto:Health.Research@westerncape.gov.za)).
3. In the event where the research project goes beyond the *estimated completion date* which was submitted, researchers are expected to complete and submit a progress report (**Annexure 8**) to the provincial Research Co-ordinator ([Health.Research@westerncape.gov.za](mailto:Health.Research@westerncape.gov.za)).
4. The reference number above should be quoted in all future correspondence.

Yours sincerely

**DR A HAWKRIDGE**  
**DIRECTOR: HEALTH IMPACT ASSESSMENT**  
DATE: 12/4/2016  
CC: M PHILLIPS

*A O Hawkridge*

**DIRECTOR: KHAYELITSHA/ EASTERN**

## Appendix I: University ethics letter



DEPARTMENT OF RESEARCH DEVELOPMENT

UNIVERSITY of the  
WESTERN CAPE

10 December 2015

### To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:  
Mr T Noncungu (School of Nursing)

Research Project:

Investigating health education needs of pregnant women in their first antenatal visit at primary health care facilities in Khayelitsha

Registration no:

UNIVERSITY of the  
WESTERN CAPE  
15/7/250

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

*Ms Patricia Josias  
Research Ethics Committee Officer  
University of the Western Cape*

Private Bag X17, Bellville 7535, South Africa  
T: +27219592988/2948. F: +27219593170  
E: pjosias@uwc.ac.za  
www.uwc.ac.za

**Appendix J: Editors report**

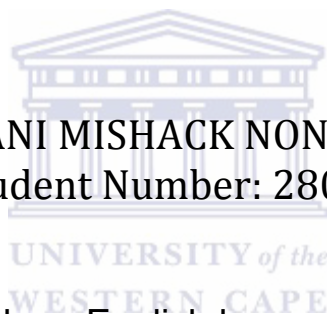
## ENGLISH LANGUAGE GRAMMAR EDIT

This is to certify that the attached titled

INVESTIGATING HEALTH EDUCATION NEEDS OF  
PREGNANT WOMEN IN THEIR FIRST ANTENATAL VISIT  
AT PRIMARY HEALTH CARE FACILITIES IN KHAYELITSHA

prepared and submitted by

THABANI MISHACK NONCUNGU  
Student Number: 2805547



has gone through an English language grammar edit  
carried out by Duncan Harford.

08/01/2017

---


DATE

A handwritten signature in black ink, appearing to be 'Duncan Harford'.

---

SIGNATURE

## Appendix K: Turn it in report





Assignments Students Grade Book Libraries Calendar Discussion Preferences

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About this page  
This is the student portfolio page. The submissions this student has made to your class are shown next to their respective assignments. From this page, you can view a student's submission by clicking on a paper title or view an Originality Report by clicking a report icon.

assignment list portfolio for Thabani Noncungu

show grades

#	Assignment	Title	Submitted	Similarity	GradeMark	Download	Reviews
1	PhD chapters and reports start: 25-Aug-2015 due: 30-Dec-2017						
2	Final Report for Examination start: 19-Nov-2015 due: 30-Dec-2017	THesis first check	16-Mar-2017	18% <span style="color: green;">■</span>			0

