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List of abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
APH	Ante-partum haemorrhage
ART	Antiretroviral therapy
ARV	Antiretroviral
CPD	Cephalopelvic disproportion
CRHCS	Commonwealth Regional Health Secretariat
CVI	Content validity index
ECSACON	East, Central and Southern Africa College of Nursing
EDD	Estimated date of delivery
EmOC	Emergency Obstetric Care
FP	Family planning
GOA	Goal Oriented Approach
HB	Haemoglobin
HBM	Health Belief Model
HIV	Human Immune Virus
IUCD	Intra uterine contraceptive device
JHPIEGO	John Hopkins Programme of Information & Education for Gynaecology and Obstetrics
LMP	Last menstrual period
MDG	Millennium Development Goals
MNHP	Maternal & Neonatal Health Programme
MOHCW	Ministry of Health and Child Welfare of Zimbabwe
MRCZ	Medical Research Council of Zimbabwe
MTCT	Mother to Child Transmission (of HIV/AIDS)
MTMM	Multi-Trait-Multimethod Matrix
NND	Neonatal death
PHC	Primary Health Care
PIH	Pregnancy Induced Hypertension
PMTC	Prevention of mother-to-child transmission (of HIV/AIDS)
PPTCT	Prevention of Parent to Child Transmission (of HIV/AIDS)
RPR	Rapid Plasma Reagin
RSA	Republic of South Africa
SAfAIDS	Southern Africa forum for AIDS Information Dissemination Service
SSA	sub-Saharan Africa
SPSS	Statistical Package for Social Sciences
STI	Sexually transmitted infections

TBA	Traditional birth attendant
UNICEF	United Nations Children's Emergency Fund
UNFPA	United Nations Population Fund
USA	United States of America
VCT	Voluntary counselling and testing
WHO	World Health Organization

List of annexures

CHAPTER 1

Introduction to and background information about the study

1.1 INTRODUCTION

Antenatal care (ANC) in Zimbabwe is regarded as an important health care and health promotion activity that aims at enhancing maternal and foetal well-being during pregnancy as well as favourable pregnancy outcomes. Adolescent mothers are generally viewed as a vulnerable group which could benefit from the effective utilisation of ANC services.

The study on factors influencing pregnant adolescents' utilisation of ANC services was conducted in Bulawayo, the second largest city in Zimbabwe, situated south of Harare, the capital city of Zimbabwe. Bulawayo has an estimated population of 684 232, based on the 2002 national census (City of Bulawayo 2004:1).

In Bulawayo health care services, including ANC, are provided at the Primary Health Care (PHC) clinics, government hospitals, private hospitals, surgeries and nursing homes. This study focused on the 18 PHC clinics and the two government hospitals. All 18 PHC clinics provide ANC services but only four of them, together with the two government hospitals, conduct deliveries. The other 14 PHC clinics no longer conduct deliveries because of the shortage of midwives. The two government hospitals provide specialist ANC and other obstetric services to referred clients such as pregnant adolescents aged 19 or younger and those with health risks that might require the services of obstetricians, physicians, paediatricians and intensive midwifery care. These clients are usually referred from the PHC clinics and provincial hospitals in Matebeleland South, the Midlands and Masvingo regions. The study also focused on adolescent mothers who did not attend ANC but delivered their babies in the PHC clinics and the two hospitals.

Zimbabwe is a landlocked country with a land area of 390 757 square km, of which 85% is agricultural land (see figure 1.1). Zimbabwe is bordered to the south by South Africa, south-west by Botswana, north-west by Zambia and north-east by Mozambique (City of Bulawayo 2004:1).

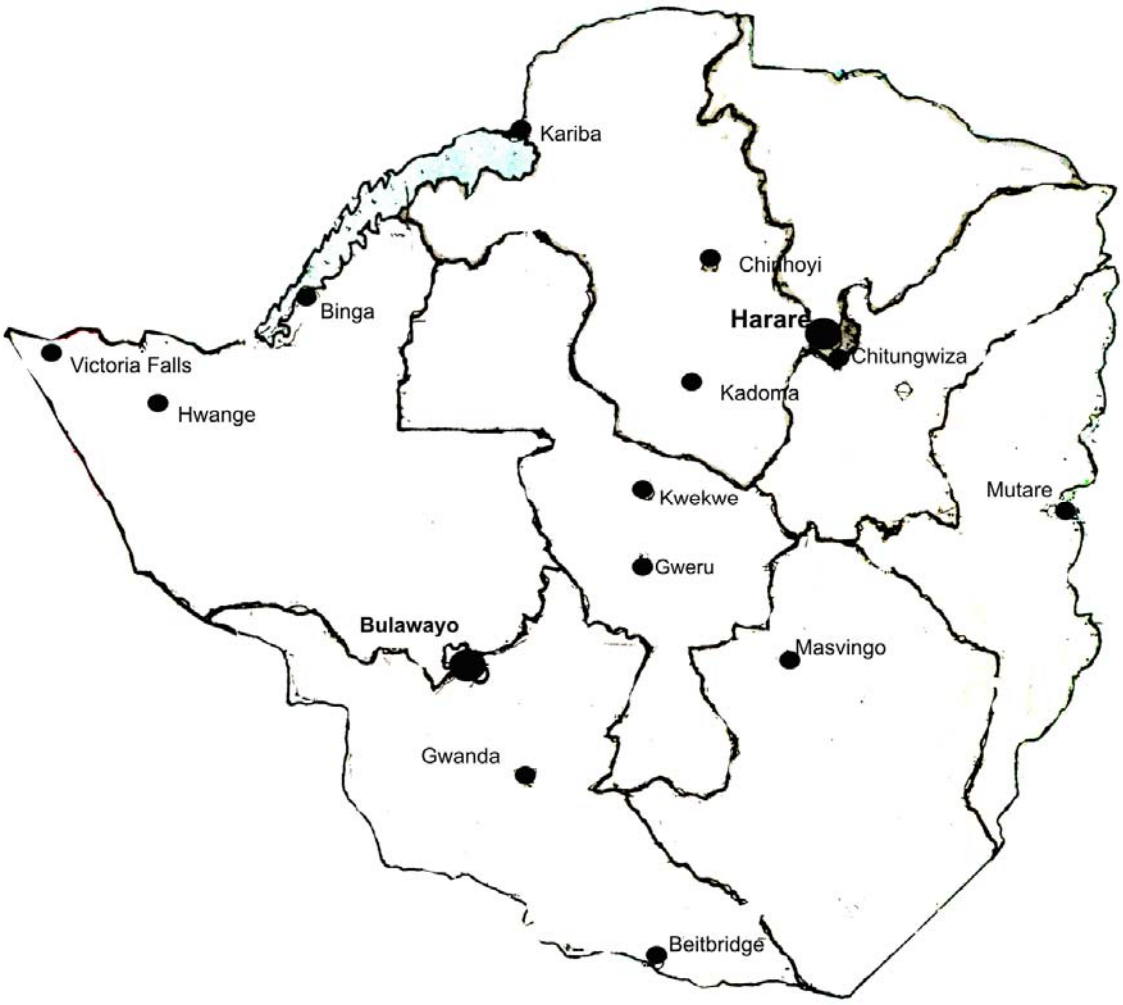

Figure 1.1: Map of Zimbabwe **(Source MOHCW 2004b:11)**

1.2 BACKGROUND TO AND INFORMATION ABOUT THE STUDY

Maternal morbidity and mortality in developing countries, including Zimbabwe, continue to pose challenges to the health care delivery system. In Zimbabwe maternal mortality figures are estimated to have risen from 283 deaths per 100 000 live births between 1984 and 1994 to 695 deaths per 100 000 live births between 1995 and 1999 (Ministry of Health and Child Welfare [MOHCW] 2004b:41.) According to MOHCW (2007:11), the maternal mortality ratio has slightly declined to 555 deaths per 100 000 live births during 2005/2006. Strategies have been implemented to achieve the Millennium Development Goal (MDG) number five that endeavours to improve maternal health and reduce maternal mortality by 75% between 2000 and 2015. The MDG report postulates that maternal deaths can be reduced if women have access to ANC and other maternal services and that maternal services should aim at empowering Zimbabwean

women, including pregnant adolescents (MOHCW 2004b:41.) ANC in Zimbabwe has identified the goal-oriented approach as one of the safe motherhood activities aimed at providing health care and health education to women during pregnancy (see Annexure H).

A study conducted in Zimbabwe by Munjanja, Lindmark and Nystrom (1996:369) assessed the efficacy of reduced ANC visits; these research results showed that pregnancy outcomes for women with no risk factors were not significantly different whether or not they had fewer ANC visits. Based on these results and on those by Villar, Ba'aqeel, Piaggio, Lumbiganon, Belizan, Farnot, Al-Mazrou, Carroli, Pinol, Donner, Langer, Nigenda, Mugford, Fox-Rushby, Hutton, Bergsjo, Bakketeig and Berendes (2001:1562), Zimbabwe has adopted the World Health Organization's (WHO) goal-oriented guidelines (MOHCW 2001:27). These guidelines recommend four to six ANC visits for mothers with no identified health problems and more ANC visits for pregnant women diagnosed with health risks.

The overall goal of ANC is to ensure good health for the mother and the foetus, identify problems during pregnancy, treat the problems if possible or refer the women to the next level of health care as soon as possible (John Hopkins Programme of Information & Education for Gynaecology & Obstetrics (JHPIEGO)/Maternal & Neonatal Health Programme (MNHP) 2004:1; MOHCW 2001:25). These goal-oriented ANC activities are stipulated in the Zimbabwe reproductive health service guidelines and are designed to focus on the following activities:

- Health promotion, whereby information is given on nutrition, health care, counselling on danger signs and complications during pregnancy; planning for delivery and risk assessment through history taking, physical examination and screening tests.
- Prevention, early detection and management or referral for complications. Women are also screened for pregnancy-induced hypertension (PIH), anaemia, ante-partum haemorrhage (APH), multiple pregnancies and medical or genetic conditions.
- Treatment of existing conditions such as malaria and anaemia; the provision of iron supplements for the prevention and treatment of anaemia and the administration of tetanus toxoid vaccinations, where necessary.
- Voluntary counselling and testing (VCT) for the prevention of mother-to-child transmission (MTCT) of the human immune virus (HIV) and acquired immune deficiency syndrome (AIDS).

A study conducted in Nigeria among teenagers revealed that poor obstetric outcomes were related to poor ANC and poor demographic characteristics rather than to mothers' biological ages (Loto, Ezechi, Kalu, Loto, Ezechi & Ogunniyi 2004:398). The same study's findings showed a higher incidence of complications among the teenagers who did not attend ANC (referred to as "unbooked cases" in Zimbabwe) than among those who did do so.

Another study on the utilisation, quality and effectiveness of free ANC in an informal settlement area in the Gauteng Province of the Republic of South Africa (RSA) revealed that adolescent mothers tended to seek care late during their pregnancies, with an average of one visit before delivery. The findings also showed that care provision was inadequate and free ANC services did not automatically increase the utilisation of ANC services. Other factors likely to increase the utilisation of ANC services were cited as accessibility, availability and acceptability of the services (Westaway, Viljoen, Wessie, McIntyre & Cooper 1998:58).

Studies conducted by Matua, (2004:33), as well as by Omolola, Babatunde, Babalola and Victoria (2004:25), revealed that pregnancy and childbirth posed health risks, especially where there was no ANC. The findings also revealed that pregnant adolescents sometimes met unfriendly nurses and might even be turned away from ANC clinics. These pregnant adolescents would then lose confidence in the service provider and eventually stop using the facility. It is therefore important that women, including pregnant adolescents, in Zimbabwe are provided with improved and user-friendly ANC services.

There continue to be reports of pregnancy-related morbidity and mortality and some of these might be attributed to delay in seeking ANC or the non-utilisation of ANC. The United Nations Children's Emergency Fund (UNICEF 2004:2) reported a global increase in ANC attendances from 53%–65%, while sub-Saharan Africa (SSA) recorded 64% ANC attendance, an indication that some SSA women continue to deliver their babies without attending ANC.

Pregnant adolescents are classified as a high-risk group. Some of their obstetric problems might be aggravated by late entry into ANC, limited knowledge on health-seeking behaviours and inaccessible adolescent-friendly health care facilities. Woo and Twinn (2004:595) advocate the provision of comprehensive health assessments and strategies that increase knowledge about sexual health, contraception and ANC.

Pregnant adolescents are also vulnerable to acquiring HIV and AIDS because they are sexually active and might lack knowledge, resources, social status and power to protect themselves against such diseases. The 2000 ANC survey in Zimbabwe showed an HIV prevalence rate of 32% among the 15–24 age group (MOHCW 2004a:45). Quality and focused VCT during pregnancy, early diagnosis and the provision of treatment to prevent MTCT of HIV infection should be implemented early in pregnancy (Jackson 2002:147).

In view of the problems related to ANC provision, Andrew and Nancy (2005:402) recommend high quality ANC, early ANC and early diagnosis and treatment of complications and infections. Andrew and Nancy (2005:402) also criticise health care systems that fail to provide appropriate frameworks and resources to delivery interventions. These services should aim at increasing accessibility and empowerment of pregnant adolescents with knowledge about family planning, pregnancy, childbirth and parenting, as well as the prevention of STI and HIV infections (Kleijer, Dekker & Heard 2005:23). This underscores the need for an ANC framework for pregnant adolescents that is client-focused and user-friendly, observing the rights and dignity of pregnant adolescents.

Pregnant adolescents' poor utilisation of ANC services may also be influenced by the ANC providers' attitudes as well as the nature of the services provided. The findings of the study on health care seeking practices among pregnant women in Cape Town by Jewkes, Abrahams and Mvo (1998:8), support the premise that focused and individualised ANC that is accessible and acceptable is likely to enhance effective utilisation of ANC services by pregnant adolescents in Bulawayo. Aretakis (2004:818) cites some of the barriers, especially among African adolescent mothers, related to delays in seeking ANC, as dislike towards providers' care and offensive attitudes towards pregnant adolescents. Edelman and Mandle (1994:569) recommend special approaches to adolescent mothers that involve skilled counselling and support by midwives who should provide honest answers to those young mothers who may be hesitant to raise their concerns. Health care providers, including midwives in many of the developing countries, have been described as lacking humanity; they might insult clients by using abusive language. Confusion and misunderstanding might occur when pregnant adolescents cannot comprehend what the midwives are saying because they know too little about the basic anatomy and physiology (Awafung 2004:27; Finger 2004:13; Pardo 2003:11). Health-seeking behaviours are influenced by the way an individual perceives the care given and the environment in which such care is provided.

Despite the recommended focused ANC guidelines, utilisation of ANC services by pregnant adolescents in Bulawayo, Zimbabwe, remains poor. As many as 49% of the adolescent mothers booked for ANC only after 28 weeks' gestation, and 28% delivered their babies without attending ANC (MOHCW 2005a:1). The annual report of the Director of Health Services for the PHC clinics in Bulawayo reported an overall ANC overage of 52% in 2005, with 40% of them booking for ANC late (City of Bulawayo 2005:21). The recommended first ANC visit should be made during the first trimester, between 12 and 16 weeks' gestation, because by then the development of foetal organs is almost complete. (Fraser & Cooper 2003:253; MOHCW 2001:27).

1.2.2 Antenatal care in Zimbabwe

According to MOHCW (2001:25) ANC, using the goal-oriented approach, has been universally adopted and recommended as one of the pillars towards safe motherhood. ANC in Zimbabwe, including that of pregnant adolescents, reached coverage of 96% in 1988, but has been declining since the 1990s. Zimbabwe's national health strategy for 1997–2007 reports that by 1997 the ANC coverage had dropped to 75% and to 70% by 2000 (MOHCW 1999:26). According to MOHCW (2007:11), there was an increase (94%) of women attending at least one ANC visit in 2006, although only 68% recorded the four recommended visits. Maternal health statistics in Bulawayo for 2004 and 2005 show that a total of 8 030 adolescent mothers had delivered babies, but that only 6 213 (77.4%) of them had attended ANC, while 1 817 (22.6%) delivered their babies without attending ANC at all (referred to as "unbooked cases" in Zimbabwe). Most of the health complications that arose occurred among the unbooked adolescent mothers (see table 1.1). The 22.6% adolescent mothers who delivered without attending ANC concerns the MOHCW, as this might contribute to the perinatal morbidity and mortality statistics in Bulawayo.

Table 1.1: Maternal health statistics (2004 and 2005): Bulawayo, Zimbabwe

Period	Deliveries, adolescent mothers who attended ANC	Deliveries, adolescent mothers who did not attend ANC	Total deliveries, adolescent mothers	% deliveries of adolescent mothers who did not attend ANC

2004	2 436	852	3 288	25.9
2005	3 777	965	4 742	20.4
Total	**6 213**	**1 817**	**8 030**	**22.6 (average)**

Source: Bulawayo ANC & Delivery Registers for 2004 and 2005

This situation underscores the need for focused ANC as the entry point to providing maternal health during pregnancy, identifying life-threatening conditions and providing appropriate treatment as well as counselling and health education.

The adolescent mothers, by virtue of their bio-physiological immaturity and being faced with the HIV and AIDS pandemic, deserve focused ANC that addresses their individual needs and problems. The annual health statistics for 2004–2005 indicate that adolescent mothers contribute nearly 50% to the morbidity and mortality among women of childbearing age. Between January 2004 and December 2005, 63 maternal deaths were reported. The major preventable causes of death were hypertensive disorders, infections and obstructed labour (MOHCW 2005a:1). This suggests that at least two women in Bulawayo died every month from pregnancy-related complications.

Maternal morbidity and mortality can be reduced if effective ANC is rendered and 'at-risk factors' are diagnosed and managed promptly. These health centres in Bulawayo are expected to provide focused and goal-oriented ANC, although the nature of ANC provided and factors that may influence adolescent mothers' utilisation of such care have not been assessed. This study therefore attempted to explore factors influencing the utilisation of ANC services by pregnant adolescents in Bulawayo.

1.3 STATEMENT OF THE RESEARCH PROBLEM

The ANC services in urban settings, including Bulawayo, are provided in government hospitals, private nursing homes, private surgeries and PHC clinics at gazetted maternity fees according to the level of care. Despite the availability of these services at government hospitals and PHC clinics, 49% of adolescent mothers continued to book for ANC after 28 weeks' gestation, while 22.6% delivered their babies without utilising any ANC services at all. This situation increases

pregnant women's chances of infant and maternal morbidity and mortality; hence the need to undertake the study. Pregnant adolescents who book for ANC after 28 weeks' gestation, and those who deliver without attending ANC, do not derive maximum benefits from these services.

It is against this background that the study is undertaken to best address the question "which factors influence pregnant adolescents' utilisation of ANC services in Bulawayo?"

1.4 PURPOSE OF THE STUDY

The purpose of the study was to determine why some pregnant adolescents book late for ANC and why others do not attend ANC at all. The findings will assist in coming up with recommendations for improving factors that are perceived as barriers to the utilisation of ANC services in Bulawayo.

1.5 RESEARCH QUESTIONS

The following questions were asked in order to address the problem statement:

- What is the quality of documented ANC services rendered to adolescents in Bulawayo?
- Which modifying factors could influence pregnant adolescents' utilisation of ANC services?
- Which individual perceptions of pregnant adolescents could influence their non-utilisation of ANC services?
- Do social values, beliefs and practices, including economic factors, influence pregnant adolescents' decision on whether to use ANC services?
- Which structural variables influence pregnant adolescents' decision on whether to use ANC services?
- What are pregnant adolescents' perceived benefits of using ANC services?
- What barriers might impact negatively on pregnant adolescents' utilisation of ANC services?
- What can be done to enhance pregnant adolescents' utilisation of ANC services in Bulawayo?

1.6 RESEARCH OBJECTIVES

The study's objectives sought to:

- Evaluate the documented quality of ANC rendered to adolescents in Bulawayo, because poor ANC services can pose a barrier to adolescents' utilisation of these services
- Determine modifying factors that could influence pregnant adolescents' utilisation of ANC services
- Explore individual perceptions of pregnant adolescents that could influence their non-utilisation of ANC services
- Identify social values, beliefs and practices (including economic factors) which could influence pregnant adolescents' decision on whether to use ANC services
- Explore structural variables likely to influence pregnant adolescents' decision on whether to use ANC services
- Determine pregnant adolescents' perceived benefits of using ANC services
- Identify barriers that might impact negatively on pregnant adolescents' utilisation of ANC services
- Determine strategies that could enhance pregnant adolescents' utilisation of ANC services in Bulawayo and possibly also in Zimbabwe.

1.7 SIGNIFICANCE OF THE STUDY

Effective utilisation of ANC services, through early booking for ANC, receiving health promotion information and health care, is crucial to enhancing maternal and foetal health during pregnancy and reducing mortality and morbidity statistics.

The identified factors that influence the utilisation of ANC services in Bulawayo are envisaged to assist in:

- Promoting quality ANC through evidence-based practice
- Enhancing the effective utilisation of ANC services by pregnant adolescents in Bulawayo
- Strengthening Zimbabwe's MOHCW strategy aimed at improving maternal health and the reduction of maternal mortality by 75% between 2000 and 2015 through enhanced access to ANC services (MOHCW 2004a:41)
- Empowering pregnant adolescents to make informed and independent decisions about seeking health care during pregnancy; identify danger signs and initiate appropriate actions

- Enhancing family and social support systems for pregnant adolescents within community settings
- Influencing midwifery education and practice settings to review curricula and incorporate essential content on pregnant adolescents' ANC
- Advocating for adolescent friendly policies that minimise barriers to ANC services for pregnant adolescents.

1.8 THEORETICAL FRAMEWORK

The study was guided by the Health Belief Model (HBM), which focuses on client compliance and health care practices (Polit & Beck 2004:124). The model attempts to justify the premise that health-seeking behaviour is influenced by the individual's perceptions of threats posed by the health problem and the perceived benefits of taking actions to minimise such a health problem. Brink and Wood (2001:47) support the premise that a theoretical framework attempts to explain why variables such as ANC and pregnant adolescents affect each other.

The HBM in this study assisted in explaining why some pregnant adolescents take action to prevent health complications during pregnancy by attending ANC early in pregnancy, while others attend ANC only late or not at all. The HBM also assisted in determining pregnant adolescents' views about ANC and what factors influence the utilisation of ANC services. According to Dennill, King and Swanepoel (1999:156), the HBM is organised into three major components which attempt to explain human behaviour towards health, or in the case of this study pregnant adolescents' behaviours towards utilising ANC services, namely:

- Individual perceptions of pregnant adolescents concerning the utilisation of ANC
- Modifying factors which could influence pregnant adolescents' decision as to whether or not to attend ANC, including:
  - Demographic factors such as age, race and gender issues
  - Socio-demographic variables such as personality, social factors and peer influence
  - Structural variables related to pregnant adolescents' knowledge about the benefits of attending and dangers of not attending ANC
- Variables affecting the likelihood of pregnant adolescents' initiation of actions to utilise ANC services.

The premise of the HBM is that individual pregnant adolescents' health beliefs are influenced by their perceptions of the ANC services. Modifying factors such as age, gender, marital status and educational status and parity could influence the utilisation of ANC services (Matua 2004:36; Tlou 2002:65). Socio-cultural factors could also influence the pregnant adolescents' decision as to whether or not to utilise the ANC services.

Variables related to perceived benefits might motivate the pregnant adolescents to utilise ANC services. Perceived barriers such as the health workers' negative attitudes and the lack of accessibility, acceptability and availability of the ANC services could influence the decision not to utilise the ANC services. Access to health care is important to help modify the adolescents' risk behaviours and promote the utilisation of ANC services (Slap 1995:1).

The HBM, as a conceptual framework, attempts to explore why some people who may not be ill take certain actions to prevent illness, while others do not take such measures. The framework was seen as useful in identifying those pregnant adolescents who were susceptible to several inhibiting factors and unlikely to initiate early initial ANC, thereby exposing themselves and their babies to health complications that could have been prevented.

The HBM could be used to motivate pregnant adolescents to take positive health actions through attending ANC in time and minimising obstetric and/or health complications. Health education, counselling and effective social support systems are likely to initiate cues for action. Figure 1.2 illustrates the variables identified in this study to address factors which could influence the pregnant adolescents' utilisation of ANC services in Bulawayo.

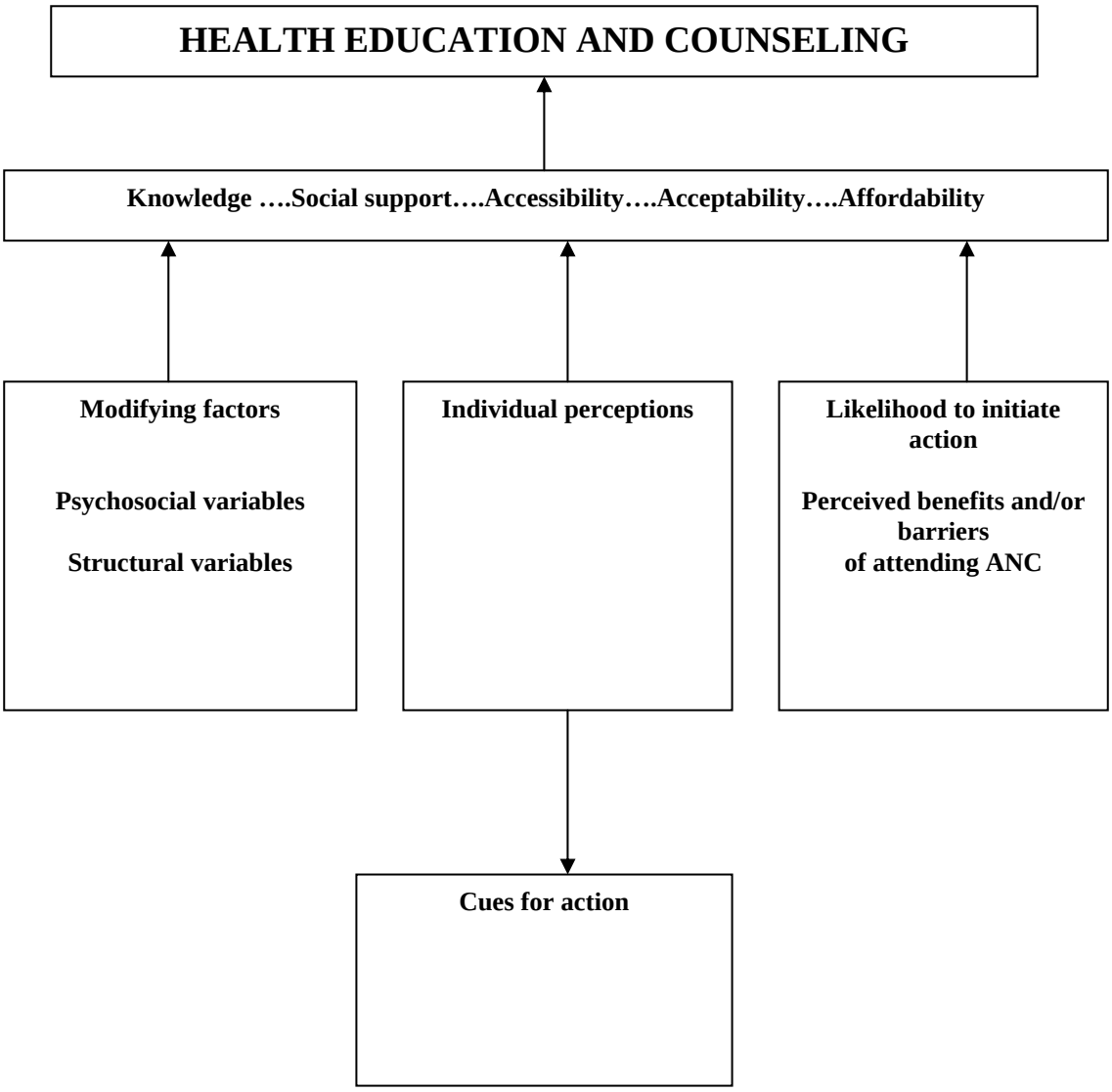

Figure 1.2: Health Belief Model
(adapted from Pender 1996:36)

1.9 DEFINITION OF KEY CONCEPTS

Adolescence

Adolescence is described as a transition from childhood to adulthood. The process is characterised by the development of sex organs such as the breasts and pubic hair, and the initiation of menses in females. During this period there is a spurt of biological development and rapid hormonal activity contributing to mood swings (Wade & Tavris 1993:498). Adolescence is

Perception

Perception is defined as an organised process in which an individual interprets situations from an environment and draws subjective or personal inferences and conclusions from these in order to take a certain action or behaviour (George 2002:225; Quinn 2001:73). Perception in this study refers to pregnant adolescents' views about ANC services in Bulawayo.

Pregnant adolescent

The term in this study refers to any woman 19 years or younger during pregnancy; irrespective of gravida, parity and marital status (Ehlers et al 2000:46).

Primigravid adolescent

A primigravid adolescent in this study means a female, 19 years or younger, who is pregnant for the first time.

Safe motherhood

According to the MOHCW (2001:23), safe motherhood is the provision of quality maternal health services during pregnancy, delivery and in the post partum period, in order to ensure optimum health outcomes for the mother and the infant. Safe motherhood in this study will be discussed within the context of the goal-oriented ANC guidelines (see Annexure H).

1.10 ORGANISATION OF THE THESIS

The study is organised in eight chapters.

- Chapter 1 discussed the introduction and background to the study, the statement of the problem, the research questions guiding the study and the objectives. The significance of undertaking the study, key concepts and the theoretical framework (HBM) guiding the study were also discussed.

- Chapter 2 will review related literature and discuss factors influencing pregnant adolescents' utilisation of ANC services within the context of the three major components of the HBM.
- Chapter 3 will discuss the research methodology used in the four phases of this study and describe the appropriate research design, population, sampling, data collection methods, reliability and validity of the instruments used in each phase. Ethical considerations and data analysis techniques will also be explained.
- Chapter 4 will outline the analysis and discussion of the research results in phase 1, which audited pregnant adolescents' ANC records.
- Chapter 5 will present the analysis and discussion of the research results obtained in phase 2 of the study, in which structured interviews were conducted with pregnant adolescents who attended ANC.
- Chapter 6 will analyse and discuss the research results obtained in phase 3 from interviews conducted with adolescent mothers who delivered their babies without attending ANC.
- Chapter 7 will analyse and discuss the research results obtained in phase 4 from questionnaires completed by midwives working in the maternity health care settings of Bulawayo.
- Chapter 8 will outline the conclusions, implications, recommendations and limitations of the study.

1.11 SUMMARY

Chapter one discussed the background to the study including the statement of the problem. The purpose of the study, objectives and research questions were outlined. The significance of the study and the theoretical framework that guided the study, the Health Belief Model or HBM, was discussed. The key concepts used in this study were also defined. The next chapter will review literature related to adolescents' pregnancies and ANC attendance.

CHAPTER 2

Literature review

2.1 INTRODUCTION

This chapter will review literature related to pregnant adolescents' utilisation of ANC services within the framework of the goal-oriented ANC protocol (see Annexure H) and will be guided by the Health Belief Model or HBM. According to Polit and Beck (2006:503), a literature review is "a critical summary of research on a topic of interest, prepared to put a research problem in context". A literature review involves the systematic identification, synthesis, analysis and summary of written material that contains information on a research topic (Polit & Hungler 1995:79)**.** Related research studies, articles from professional journals and books were reviewed in order to establish other researchers' findings and views about factors that influence the pregnant adolescents' utilisation of ANC services and why some pregnant adolescents attend ANC only late in pregnancy, while others deliver their babies without receiving ANC at all.

2.2 PURPOSE OF THE LITERATURE REVIEW

The purpose of the literature review in this study was to identify factors influencing pregnant adolescents' utilisation of ANC services in Bulawayo. According to Polit and Beck (2004:88), a literature review serves an important role in the nursing research process as well as the important function of assisting nurses to acquaint themselves with updated knowledge of concepts in order to provide evidence-based practice. Fouche and Delport (2005:127); Polit and Hungler (1995:79) and Polit and Beck (2004:88) cite the purpose of the literature review as:

- Providing a source of research ideas and helping the researcher to focus on a research topic.
- Placing the research project in context and allowing the researcher to shape the research questions and/or the hypothesis.
- Determining gaps and inconsistencies and whether there is a need to replicate studies in a different setting or with a different population.
- Identifying relevant conceptual frameworks for the research problem.

- Identifying suitable designs and data collection methods for the study.
- Assisting in interpreting the study findings and in developing recommendations for improved services and for future research.

A review of relevant literature provides a road map for the development and implementation of the research study (Burns & Grove 2005:95). The literature review in this study attempted to address the following research questions, which were guided by the components of the HBM:

- Which modifying factors could influence pregnant adolescents' utilisation of ANC services?
- Which individual perceptions of pregnant adolescents could influence their non-utilisation of ANC services?
- Do social values, beliefs and practices (including economic factors) influence pregnant adolescents' decision on whether to use ANC services?
- Which structural variables influence pregnant adolescents' decision on whether to use ANC services?
- What are pregnant adolescents' perceived benefits of using ANC services?
- What barriers might impact negatively on pregnant adolescents' utilisation of ANC services?
- What can be done to enhance pregnant adolescents' utilisation of ANC services in Bulawayo?

2.3 ANTENATAL CARE AND PREGNANT ADOLESCENTS: A GLOBAL PERSPECTIVE

Antenatal care provides an opportunity to empower pregnant adolescents to recognise and respond to the signs and symptoms of obstetric complications. An adolescent pregnancy is a high-risk situation because of these mothers' physical and psychological immaturity. Additional social factors such as culture, low literacy level, inadequate reproductive health knowledge and inadequate ANC attendances affect pregnant adolescents' health seeking behaviour, contributing to pregnancy complications and poor pregnancy outcomes (Matua 2004:36; Singh & Khare 2001:34).

Several studies have revealed that the majority of pregnant adolescents make the first ANC visit only during the second and third trimester of pregnancy, while some deliver their babies without attending ANC at all (Ikamari, 2004:27; Singh & Khare, 2001:34; Van den Heuvel, De Mey, Buddingh & Bots 1999:838). Pregnancy- and childbirth-related causes of morbidity and mortality among women aged 19 or younger could be improved through skilled ANC services that would detect, prevent, manage and treat obstetric complications.

In Africa and in some other parts of the world, pregnant adolescents are susceptible to malaria, associated with anaemia, abortions, premature deliveries and low birth-weight babies (Van Eijk 2006:2). The prevention and treatment of malaria and anaemia should be addressed by timely counselling and treatment (Carroli, Rooney & Villar 2001:S28).

Studies on maternal health care utilisation in the Teso District, Kenya, revealed that 67% of women, including adolescents, attended ANC during the second trimester of their pregnancies, 20.4% during the third trimester, while 14% never attended ANC (Ikamari 2004:27). Similar findings were observed among rural based adolescents in Zambia and Zimbabwe (Maimbolwa, Ahmed, Divan & Ransjo-Arvidson 2003:29; Van den Heuvel et al 1999:838).

Ikamari (2004:27), Starrs (1997:12) and Van den Heuvel et al (1999:838) identify the following contributory factors to the poor utilisation of ANC services by pregnant adolescents:

- Doubts about the efficacy of ANC.
- Limited exposure to information and new ideas.
- Limited decision making authority and control over their health and lives by virtue of being women, young and dependent on their spouses and/or parents.
- Expensive ANC charges for poor adolescents, who then resort to cheaper and more compassionate services from traditional birth attendants (TBAs).
- Lack of transport.
- Long distances from the clinics.
- Perceptions that the health care providers are rude.
- Religious beliefs in the case of some women.
- Being single, which posed psychosocial and economic challenges to using ANC services.

2.3.1 Antenatal care in Zimbabwe

Antenatal care in Zimbabwe is expected to focus on goal-oriented activities that emphasise qualitative, client-focused care, as opposed to quantitative care. In order to promote its effectiveness, ANC services should be accessible, available, acceptable, effective, efficient, appropriate and equitable to pregnant women, including pregnant adolescents.

The initial ANC visit should take place any time before 16 weeks of gestation during the first trimester of pregnancy. The ANC activities performed at the first visit include history taking, physical examination, laboratory investigations for syphilis, haemoglobin estimations, testing urine for albumen and glucose, as well as counselling and management of prevention of parent-to-child transmission (PPTCT) of HIV. Tetanus toxoid and anti-malarial prophylaxis are given. The goal of the first interview is to make a risk assessment, provide appropriate health education and discuss the plan for delivery with the pregnant adolescent, and to supply iron supplements throughout the pregnancy (MOHCW 2001:27).

The second ANC visit should occur between 16 and 23 weeks' gestation. The aim is to discuss the laboratory results and take action on abnormal results and to treat the partner if necessary. The interview focuses on foetal movements, problems the woman might be experiencing and findings of the urine tests. The blood pressure is checked to exclude pregnancy-induced hypertension (PIH). Health education is given on danger signs during pregnancy, how to recognise them and what actions to take. The second dose of anti-tetanus toxoid is given (MOHCW 2001:27).

The third ANC visit takes place between 24 and 28 weeks' gestation and this visit also centres on potential problems, blood pressure checks and urine analysis. Obstetric problems such as APH and PIH are discussed. The palpation should detect multiple pregnancies and abnormalities (MOHCW 2001:27).

The fourth ANC visit takes place between 32 and 34 weeks of gestation; the assessment and the discussion focuses on problems the mother might be experiencing and also review the delivery plan, including labour. Haemoglobin estimations, palm and conjunctival pallor, foetal size in relation to gestational dates, foetal heart rate and presentation should be recorded on the client's ANC card (MOHCW 2001:27).

The fifth interview is conducted between 36 and 37 weeks, and the sixth interview between 38 and 42 weeks respectively. The interviews ensure re-assessment of the woman, health education, emotional and social support. Information on labour, childbirth and the preparation for the coming baby is reinforced. The ANC visits may be more frequent when there are potential health risks.

The ANC attendance registers for 2004 and 2005 reveal that the majority of Zimbabwe's pregnant adolescents had an average of one ANC visit before delivery, and the initial ANC visit was made during the second or third trimester (Singh & Khare 2001:34). This situation compromises the quality of care, as some of the key activities and investigations, such as STI, APH, PIH and PPTCT, might not be complete before delivery, thereby increasing the chances of poor maternal and neonatal outcomes.

2.3.1.1 Antenatal care and HIV infection

The HIV sero-prevalence in Zimbabwe is estimated at 18.1% and is highest (21%) among women aged 15-49 (MOHCW 2007:11; WHO 2001:1). The HIV status of pregnant adolescents in Zimbabwe might not be accurate, since ANC records only reflect figures for those who attended ANC, minus those who may not opt for the PPTCT programmes and those who deliver without attending ANC. Non-attendance of ANC among adolescents is a cause for concern, as this exposes both the mother and the infant to many health complications, including MTCT, which could have been detected and addressed during the antenatal period.

2.4 CONCEPTUAL FRAMEWORK

A conceptual framework/model provides a broad understanding of the phenomena of interest, the assumptions and the philosophical views of the model's designer (Polit & Beck 2004:116).The phenomenon under study is the pregnant adolescents' utilisation of ANC services. The HBM is used to guide the study. The literature review will be discussed in line with the research questions which were derived from the three components of the HBM, as highlighted in section 1.8 and figure 1.2 in chapter 1 of this thesis.

2.4.1 Modifying factors that could influence pregnant adolescents' utilisation of ANC services

Modifying factors likely to influence the utilisation of ANC services are grouped into demographic variables, psychosocial and structural variables. These variables create positive or sometimes negative influences towards the utilisation of ANC services, particularly by the pregnant adolescents, because of the interplay of biological, psychosocial, economic and structural factors. Modifying factors discussed in this study are grouped into demographic, psychosocial and structural variables.

2.4.1.1 Demographic variables

Demographic variables could contribute to poor utilisation or non-utilisation of ANC services. The factors discussed in this study are age, gender inequalities, marital status, educational level and parity. Pregnancy, inadequate ANC and childbirth are the leading causes of maternal mortality and morbidity among women aged 19 and younger. The implementation of skilled ANC services could improve maternal outcomes through the timely diagnosis and management of obstetric complications (Karen, Findlay, Frappier, Goldberg, Pinzon, Sankaran & Taddeo 2006:243). As many as 90% of pregnant adolescents' births occur in developing countries and the majority are from sub-Saharan Africa (SSA) (Reynolds, Wong & Tucker 2006:6). The pelvic bones and birth canals of adolescents, especially the younger ones, are still growing, which increases the risk of complications during childbirth (Reynolds, Wright, Olukoya & Neelofur-Khan 2004:1).

The pregnant adolescents' ages might influence their decision to initiate ANC late or not to attend ANC at all. Pregnant adolescents might tend to hide their pregnancies because they might be unmarried, attending school, afraid of or prejudiced against health care providers or they might be simply too young and ignorant to appreciate the value of ANC. Pregnant adolescents might resort to unsafe abortions, leading to deaths or complications as they are more likely to experience pregnancy complications than adult women (Ajayi, Garba, Ngoran & Ojo 2004:37; Jewkes et al 1998:20; Nyoni 2006:1). Pregnant adolescents might shun ANC services for fear of being labelled "promiscuous" (Matua 2004:35). On the other hand, older adolescents who have had uneventful pregnancies and deliveries with previous pregnancies might see no reason to attend ANC.

In 19 out of 26 developing countries, women who were 19 years or younger were reportedly less likely than older women to seek ANC from health professionals (Reynolds et al 2006:7).

Though gender is not a variable, gender inequalities play a part. Factors such as marriage patterns, inheritance customs, age differences between spouses and the pregnant adolescent's status and lack of decision making powers are closely associated with poor utilisation of ANC services (Reynolds et al 2006:12). Women in many African societies are accorded an inferior status that enhances their powerlessness and vulnerability to health problems and leads to inadequate health care seeking behaviours. Tlou (2002:65) expresses concerns that the girl child lacks empowerment in many African countries. This author encourages nurses and midwives to mobilise communities to empower the girl child by elevating her status, her education and enhancing her independent decision making powers.

Pregnant adolescents, as girl children, are deprived of some of the key positions and rights in society that should empower them to make informed decisions on matters related to reproductive health (Dlamini & Van der Merwe 2002:55). The WHO (2003:2) recommends gender equality and empowerment of women and the girl child in order to reduce their vulnerability to HIV through positive health seeking behaviours and through education that promotes gender equality within a culturally sensitive framework. Pregnant adolescents should have easy access to information, skills and services for PPTCT of HIV during pregnancy, childbirth and lactation.

Marital status could influences health care seeking behaviours. Unmarried pregnant adolescents are less likely to seek ANC services due to a lack of economic and social support from parents, guardians or spouses. Married pregnant adolescents may also lack social independence and decision-making powers to seek ANC. There may be pressure or oppression from the spouse or influential members of the extended family forcing pregnant adolescents to accept the decisions made on their behalf (WHO 2003:2). According to WHO (2003:2), married adolescents have an increased risk of exposure to HIV infection because they are unlikely to reduce the frequency of intercourse and they may not be able to negotiate safer sex as they may be under pressure to bear children. Llongo (2004:84) and Kathryn (1997:1) suggest that health education should be given to the pregnant adolescent and her family, as well as the community, on the importance of initiating early ANC, for providing information about family planning options, nutrition and PPTCT.

The client's level of education could also influence pregnant adolescents' utilisation of the health facilities as well as the understanding of the importance of seeking health care promptly. Low educational status has been identified as a major barrier to the utilisation of health care services,

Cultural beliefs and ideologies on seeking health care are determined by the way diseases or conditions are perceived and the subsequent actions taken. Culture provides a way of life and is the result of the way people have adapted to a particular environment, acting in line with their ideas, perceptions and shared knowledge (Bouwer, Dreyer, Herselman, Lock & Zeelie 1997:30). Cultural factors may limit or promote health care-seeking behaviours among pregnant adolescents (Reynolds et al 2006:9). According to George (2002:498), traditional factors and cultural values influence individuals' behaviours, thoughts, decisions and actions. Family members may expect the pregnant adolescents to be under their care and deliver with the help of TBAs without attending ANC (Irinoye et al 2001:14).

In Zimbabwe, TBAs have been equipped with information and basic hygienic skills. These TBAs are also informed about danger signs requiring immediate skilled attendance at the nearest health centre. Pregnant adolescents who are pregnant for the first time, and those aged 17 and younger, are classified as a 'high-risk' group and should not deliver their babies assisted by the TBAs. However, the training of TBAs in Zimbabwe has not achieved the goals for which it was designed. Some of the TBAs do not comply with the training regulations that 'high risk' women should receive care at a health centre (Mathole et al 2005a:953). Women who delay seeking skilled attendance may experience complications (MOHCW 2007:22). The MOHCW in Zimbabwe is aiming at reducing maternal mortality and morbidity by developing strategies to address the three delays that have been found to contribute to poor maternal and neonatal health outcomes (MOHCW 2007:22), namely the delay in

- seeking appropriate health care
- reaching a health facility
- receiving expeditious and effective care

The three delays also impact on the four safe-motherhood pillars, namely family planning, ANC, safe delivery and emergency obstetric and neonatal care as well as postnatal care.

Religious beliefs in certain societies may pose barriers to the utilisation of ANC services because some religious communities might believe in prayer and prefer home deliveries with no ANC from skilled health personnel. Bouwer et al (1997:30) recommend that health workers should understand variations in family compositions, social class, health beliefs and behaviours and be able to bridge the gaps between the beliefs and behaviours. Pregnant adolescents may be tied to

religious norms that might interfere with their freedom and power to make decisions about seeking early ANC. It is important that midwives inform pregnant adolescents and adolescent mothers on matters related to self-care during the preconception period, pregnancy and childbirth.

Poverty is one of the social factors responsible for the non-utilisation of health services, including ANC. Limited economic power may be an impediment in seeking ANC services among pregnant adolescents, since most of them might be school going and financially dependent on parents, spouses or boyfriends and might be unable to afford ANC fees and the basic requirements for delivery in a hospital. According to Matua (2004:36), some women preferred delivery by TBAs because their charges were lower than those of health facilities, and sometimes TBAs could be paid in kind. Some TBAs in Nigeria reportedly rendered unsafe care to women during pregnancy, using herbs and holy water to treat minor ailments, while fortune telling, visions and prayer were used to promote pregnancy well-being (Matua 2004:36).

In Zimbabwe all pregnant women, including pregnant adolescents, pay 1 million ZWD (USD 34.00) at the government hospitals, while the PHC clinics charge ZWD 750 000 (USD 25.00), according to the *Zimbabwe Chronicle* newspaper (2008:8) (see Annexure M), 1USD=ZWD30000.00 (see Annexure M)**.** These fees cover consultation, examination and routine laboratory tests such as haemoglobin estimation, Rapid Plasma Reagin (RPR) and Rhesus factor determination. This may be viewed as one of the factors influencing pregnant adolescents' poor utilisation of ANC services in Bulawayo, since most pregnant adolescents have limited financial resources and depend on handouts from parents, partners or spouses.

According to the *Zimbabwe Chronicle* (2006:13) (see Annexure M), high maternity fees reportedly contribute to delays in seeking ANC, or not attending ANC at all and home deliveries (see Annexure M). However, studies done by Westaway et al (1998:57) in the Gauteng province of South Africa revealed that free ANC services did not automatically increase the utilisation of ANC services.

2.4.2 Structural variables (knowledge)

In this study knowledge was identified as a major structural variable that could influence the decision on whether to utilise ANC services. Adolescents need information about pregnancy and the ANC services during their preconception period so that they can make informed decisions

when they fall pregnant. The school health programmes should inform the adolescents about reproductive health knowledge related to sexuality, pregnancy, nutrition, family planning, malaria, STIs, HIV/AIDS including PPTCT (Barnet et al 2003:349; Lesser et al 2003:513). Information should indicate where these services are offered, including the requirements for attending ANC. In Zimbabwe ANC, including family planning (FP) services, are provided by both public and private health facilities.

Lack of knowledge about the ANC services in Bulawayo could be a major barrier to pregnant adolescents' utilisation of ANC services timeously or at all. Pregnant adolescents are likely to have limited knowledge and experiences in seeking health care. Matua (2004:34) and Jewkes et al (1998:23) cite lack of adequate knowledge and information about pregnancy, laboratory tests results and dangers of late bookings or not attending ANC at all, as contributors to the poor utilisation of ANC services.

Slap (1995:3) reports that high utilisation rates by adolescents in school-based reproductive health programmes, including improved contraceptive use, decreased rates of pregnancy, substance abuse and school dropouts. This suggests that increased knowledge about reproductive services increases compliance and promotes healthy behaviour.

Inadequate knowledge about ANC and its benefits to the mother's and the infant's health may also negatively influence the utilisation of ANC services. Sometimes pregnant adolescents may not be aware of the health problems related to poor or no utilisation of ANC services (Dennill et al 1999:156.) Lack of knowledge about the dangers of not seeking health care in pregnancy and delivery, including the inability to make independent decisions, were major barriers to seeking health care among pregnant women in Uganda (Matua 2004:35**).**

The Zimbabwe, the maternal and neonatal health road map developed by the MOCHW (2007:21), reports that many women and youths in Zimbabwe have limited knowledge about pregnancy and its complications. This has contributed to delays in seeking health care. Nurses, midwives and other health care personnel should provide accurate information about the signs and symptoms of pregnancy and the importance of initiating early ANC to pre-adolescent and adolescent girls and their parents (Lee & Grubbs 1995:38). This initiative might increase the likelihood of pregnant adolescents seeking early ANC and their parents supporting them. Some adolescents fail to initiate early ANC because they may not recognise pregnancy (Lee & Grubbs 1995:38). Pregnancy in adolescents may be masked by the menstrual irregularities of early adolescence (Karen et al 2006:243).

The contraceptive utilisation rate in Zimbabwe was 60% in 2006 and family planning is one of the pillars aimed at preventing unwanted pregnancies and encouraging child spacing (MOHCW 2007:10). Adolescents also need information on available contraceptives, and counselling helps delay future pregnancies and protects them from contracting STIs and possibly HIV. Biko (2006:55) found that many adolescents would not seek contraceptive advice until after sexual activities had been initiated or even until after the first child's birth.

Knowledge about the importance of good nutrition before pregnancy and during pregnancy should be given to adolescents, including the obstetric complications resulting from the poor nutritional status of the woman. Nutritional deficiencies in pregnancy have been found to contribute to poor maternal outcomes (Reynolds et al 2006:6).

Malaria and the complications of malaria such as anaemia should be discussed, and adolescents should be made aware of preventive measures such as mosquito nets, insecticide sprays and taking malarial prophylaxis (Van Eijk 2006:2; MOHCW 2001:25). Studies by Oboro, Tabowei and Jemikalajah (2002:612) revealed that 56% of women in developing countries present with iron deficiency anaemia in pregnancy. Pregnant adolescents are susceptible to malaria parasitic infection, which is one of the most common causes of iron deficiency anaemia during pregnancy in many African countries (Reynolds et al 2006:7). Anaemia is rated as a significant risk factor for pregnancy and child birth complications where there is late booking for ANC among young adolescents and those pregnant for the first time (Oboro et al 2002:612).

The adolescents need information pertaining to the transmission of HIV during unprotected sexual intercourse and the likelihood of transmission of the virus from the mother to the child (MTCT) during pregnancy, childbirth and lactation. Young people are at risk of STI and HIV because they are sexually active and they have a long period of sexual activities ahead of them (Zwane, Mgandi & Nxumalo 2004:16). Information on PPTCT programmes could be disseminated through community health education activities in the schools, during commemoration days and other multi-sectoral programmes. The rate of HIV infection in Zimbabwe is still high (18.1%) and is higher (21%) among female adolescents (MOHCW 2007:11). Pregnant adolescents might avoid attending ANC because of fears of testing for HIV status or even knowing their status. On the other hand, if they know the benefits of ANC and knowing their HIV status, and that chances are better for prevention of mother-to-child transmission (PMTCT) and anti-retroviral therapy (ART) for the mother and the baby, they are

likely to initiate ANC early. Jackson (2002:147) advocates the integration of the PPTCT package into ANC as a strategy for addressing HIV transmission to the babies.

2.4.3 Individual perceptions of pregnant adolescents that could influence the non-utilisation of ANC services

Individual perceptions involve individuals' beliefs about their susceptibility to disease, as well as the seriousness with which they view the perceived threat of illness (Onega 2000:271). Each individual has his or her own perceptions of the likelihood of experiencing a condition that would adversely affect their health. Individuals vary in their perceptions of susceptibility to a condition, and the nature and intensity of these perceptions may significantly affect their willingness to take preventive actions**.** In this study individual perceptions concern the pregnant adolescents' beliefs about their susceptibility to pregnancy complications if they attend ANC late in their pregnancies or not at all (Bellon, Delgado, De Dios, Luna & Lardelli 1999:1354).

The role of a need to seek ANC becomes important if the pregnant adolescent perceives the possibility of a condition that might complicate pregnancy such as hyperemesis gravidarum, diabetes mellitus or a previous poor pregnancy outcome (Perloff & Jaffee 1999:118). Pregnant adolescents with such needs are likely to initiate early ANC. Some pregnant adolescents might perceive ANC as not being important, with no effects to pregnancy and childbirth and their health in general. Pregnant adolescents in some studies have expressed doubts about the efficacy and benefits of ANC (Ikamari 2004:27). These perceptions, attitudes, beliefs and values may contribute to negative health seeking behaviours. Individual health seeking choices are influenced by the meaning attached to health (Bouwer et al 1997:24). Pregnant adolescents are at high risk for pregnancy complications and poor pregnancy outcomes and they might have distorted beliefs leading to inadequate or non-utilisation of ANC services. They may consider themselves not to be at risk (perceived lack of susceptibility) or believe that complications are genetic or a result of witchcraft (Llongo 2004:84). A study by Llongo (2004:84) on health belief gaps demonstrated that clients such as pregnant adolescents might consider themselves not at risk of developing obstetric complications if they did not attend adequate ANC. Repeated educational interventions are necessary to change the pregnant adolescents' beliefs about the utilisation of ANC services. According to Aretakis (2004:818), adolescents have limited experiences of independently seeking health care and they have varied opinions about health services and the providers of health care. ANC services may be viewed as fault-finding institutions that exist to rebuke adolescents and therefore compromise their privacy and dignity.

The individual's use of the health facility is also influenced by the characteristics of the community in which the person lives, indicating a need to look beyond the individual factors when examining health seeking behaviours (Stephenson & Tsui 2002:309).

Health care seeking during pregnancy provides an opportunity to teach pregnant adolescents how to recognise and respond to signs of obstetric complications and also helps to improve certain health outcomes through the detection and management of potential complications. Behaviour is expected to change if pregnant adolescents are aware of the implications of not attending ANC and if they are convinced of the benefits of practising preventive care (MOHCW 2001:25). Health professionals have an important advocacy role of ensuring that reproductive health services are available to meet specific needs and concerns of young people that are planned with the adolescents in mind. Health care programmes and policies should observe adolescents' rights to confidentiality, privacy and accessibility to low-cost and personalised services, including appropriate health information and services for adolescents (Lee & Grubbs 1995:38; Slap 1995:3).

2.5 VARIABLES AFFECTING THE LIKELIHOOD OF PREGNANT ADOLESCENTS' UTILISATION OF ANC SERVICES

Perceived benefits of and barriers to ANC influence pregnant adolescents' utilisation of ANC. The likelihood of early initiation of ANC is enhanced if the pregnant adolescents perceive the expected benefits of ANC as outweighing the disadvantages.

2.5.1 Perceived benefits of ANC utilisation

Perceived benefits of utilising ANC services provide a platform for interacting with the pregnant women, identifying needs or problems and jointly arriving at possible solutions to these needs. Good ANC should focus on adequacy, quality and effectiveness of care in promoting and protecting maternal and foetal health. The pregnant adolescents need to know the benefits of attending ANC, as well as the implications of not attending ANC. Perloff and Jaffee (1999:124) report that the pregnant adolescents are motivated to seek early ANC if they are not feeling well; when they have support from the spouse and/or parent and when they have a sufficient knowledge base about pregnancy (Bellon et al 1999:1355). Effective social support is closely

related with early-initiated, frequent ANC attendances. Pregnant adolescents who value the benefits of ANC and attend ANC regularly from the first trimester of pregnancy might see themselves as vulnerable to pregnancy complications if they do not attend ANC (Bellon et al 1999:1355).

2.5.1.1 The adequacy of ANC services

The pregnant adolescents might value the benefits of receiving adequate ANC services in Bulawayo, which are measured according to the timing and the quantity of care provided. The adequacy of ANC utilisation may be measured by initial and continuing access to care, weeks of gestation at initial booking and the actual number of ANC visits compared with the expected number of visits (Barnet et al 2003:353). The measure of adequacy of ANC utilisation also includes the concept of comprehensiveness, which can be assessed through a desk review of clinical records and determining whether the pregnant adolescents received all the expected care as stipulated in the guidelines. According to Barnet et al (2003:353), adequacy of ANC utilisation is classified as follows:

- Late initiation, which is up to 49% of expected visits
- Intermediate utilisation: that is 50% to 79% of the expected number of visits
- Adequate ANC utilisation, which is 80% to 109% of the expected number of ANC visits
- Adequate plus should be 110% and above the expected number of ANC visits

Adequate ANC utilisation implies that the initial ANC visit should take place before 16 weeks of gestation, with a minimum of four ANC visits during the pregnancy (MOHCW 2001:27). These visits are essential for monitoring the progress of the pregnancy where there are no complications. Adequacy also refers to interventions taken based on the results of laboratory tests such as haemoglobin estimations, urine analyses for glucose and albumen, syphilis, HIV, blood pressure and any danger signs (MOHCW 2001:27; Munjanja et al 1996:366; Villar et al 2001:1552). Pregnant adolescents might value the importance of ANC if they were aware of its benefits to their health and to that of their babies.

2.5.1.2 The quality of ANC services

Quality care in ANC should ultimately do what is right, acceptable to and good for the pregnant adolescents and should adhere to professional ethics. Quality ANC has to be imbued with the concept of caring, including the humanistic attributes of competence, confidence, commitment, compassion and conscience, and should be based on knowledge, skills, and values (Van der Wal 2002:16). Quality of ANC provision can be assessed through auditing ANC records, on the assumption that care recorded would reflect care rendered, while non-recorded expected care would reflect care not rendered (Mudokwenyu-Rawdon, Ehlers & Bezuidenhout 2005:76). In this study the review of ANC records, using a pre-developed checklist, was used to determine the quality of ANC rendered to the pregnant adolescents in Bulawayo. According to Mudokwenyu-Rawdon et al (2005:76), clinical records are a source of data and the aspects of care should correspond with the pre-set questions of the checklist.

Focused ANC, with reduced visits where there are no health problems, promotes qualitative and not quantitative care. The JHPIEGO/MNHP (2004:3-4) stipulates the following general principles in the provision of quality ANC care:

- Adolescent-friendly services inclusive of the partner
- Culturally appropriate ANC services
- Individualised services
- Preventive education, empowering the pregnant adolescents to protect themselves from HIV and promote gender equality

This approach requires midwives to spend more time with women, provide equitable and evidence-based care which is centred on the needs of pregnant adolescents and promotes partnership in care (Sidebotham 2003:705). According to Mbabazi and Cassimjee (2006:41), quality ANC should include complete and accurate documentation as well as the efficient flow of care activities.

2.5.1.3 The effectiveness of ANC services

The effectiveness of ANC has provoked much debate about its usefulness because little is known about its effectiveness in the reduction of maternal and infant mortality and morbidity (Carroli et al 2001:S1). Despite all these reservations, ANC in developing countries is important especially to pregnant adolescents. ANC provides the opportunity to identify health risks such as malaria,

which contributes to anaemia in pregnancy, syphilis, HIV status and malnutrition. These health interventions are effective in detecting, treating or minimising conditions in pregnancy that might contribute to maternal and neonatal morbidity and or mortality rates (Carolli et al 2001:5; Ehlers 2003:230). Efficacy of ANC should also ensure dissemination of information on maintaining good health in pregnancy, danger signs, and when and where to go for help should these appear (Yuster 1995:S61). The goal-oriented ANC guidelines, using need-focused care, have been designed to address aspects of quality, adequacy and effectiveness. However, studies continue to report late ANC bookings among pregnant adolescents in Zimbabwe (MOHCW 2001:27; Singh & Khare 2001:34; Westaway et al 1998:58).

With the advent of HIV, affecting many adolescents, early ANC including VCT for PPTCT would benefit the mother and the baby. Although several studies have questioned the efficiency of ANC, a number of obstetric complications can be diagnosed, reduced and managed during ANC. These complications include PIH, APH, anaemia, malaria, syphilis, HIV and cephalo-pelvic disproportion (CPD). Knowledge about the dangers of inadequate ANC and the poor obstetric outcomes resulting from inadequate care during pregnancy could motivate pregnant adolescents to appreciate the importance of attending ANC.

Adult women and pregnant adolescents have expressed doubts and uncertainties about the value of ANC services. The ANC procedures and health education have been labelled as repetitive routines failing to focus on the mothers' needs. Little is known about the effectiveness of the goal-oriented approach that is provided in Zimbabwe and in particular to pregnant adolescents in Bulawayo. The number of women who are not utilising the ANC programmes is increasing in developing countries. The shortage of midwives also contributes to the poor provision of ANC services (Yayla 2003:386).

2.5.2 Perceived barriers to the utilisation of ANC services

The major barriers to pregnant adolescents' utilisation of ANC services have been cited as staff attitudes, accessibility and affordability of ANC services in Zimbabwe (Ikamari 2004:27; Starrs 1997:12; Westaway et al 1998:58; Van Rensburg, Friedman, Ngwena, Pelser, Steyn, Booysen & Adendorff 2002:46-47) .

2.5.2.1 The attitudes of health care workers

- Cultural beliefs and perceptions about ANC
- Expensive health care services
- Previous health care experiences and the reputation of the health centre
- Fear of positive HIV test results

2.5.2.3 Affordability of ANC services

The majority of pregnant adolescents might not be able to afford the maternity fees that are charged because most of them have financial limitations. Pregnant women pay ZWD 1 million (USD34.00) at central hospitals and ZWD 750 000 (USD 25.00) at the PHC clinics. The Government of Zimbabwe tries to assist those pregnant women who genuinely cannot afford to pay by referring them to social welfare. However, the process of obtaining state assistance is long and frustrating, causing mothers to shun social welfare. The perceived high fees might influence some pregnant women, including adolescents, to resort to the services of traditional birth attendants (TBAs), which are cheaper and can be paid in kind (Ikamari 2004:27). This has serious implications for the pregnant adolescents' health. Home care and home deliveries without ANC may contribute to poorer pregnancy outcomes for the adolescent mother and her baby. Many pregnant adolescents depend on spouses and/or parents and are unlikely to have health insurance to cover the health care costs. Reynolds et al (2006:6) cite socio-economic factors as contributing to poor ANC attendance and thus also to poor maternal and neonatal outcomes.

2.5.2.4 The acceptability of ANC services

Pregnant adolescents would be motivated to use the ANC services if they are acceptable and need focused without restrictions. Zimbabwe's Maternal and Neonatal Health Programme (MOHCW 2004b:3) recommends culturally appropriate, woman-friendly and individualised ANC services. Pregnant adolescents expect care that is acceptable and focuses on their individual needs. In Zimbabwe, there are no organised ANC services specifically for pregnant adolescents. Health education and information are usually disseminated to groups of mothers of different ages, in an environment that might not be conducive to the pregnant adolescents' enhanced understanding of the health issues at stake. A number of studies recommended the introduction or strengthening of school-based adolescents' pregnancy programmes that will ensure health care for the adolescents as well as continuity with their school education. There

should be adolescent-friendly programmes at the community settings, schools, nursing homes, surgeries and hospitals (Barnet et al 2003:349; Biddle 1997:1; Slap 1995:2).

2.5.2.5 The availability of ANC services

ANC services should be available to pregnant adolescents without any restrictions. Although in Zimbabwe ANC is provided at every health centre, it is not clear whether its availability is acceptable to the pregnant adolescents, since ANC services cater for all age groups.

2.6 SUMMARY

Chapter 2 discussed ANC, guided by the research questions and the HBM, attempting to explain factors influencing pregnant adolescents' utilisation of ANC services. Factors likely to influence ANC utilisation from related literature sources were identified, namely:

- Modifying factors such as age, marital status, parity and educational level of the individual pregnant adolescents
- Psychosocial and economic variables including cultural and religious factors
- Structural variables: knowledge about pregnancy, nutrition and health and PPTCT of HIV/AIDS
- Individual perceptions about ANC and aspects of ANC services
- Perceived benefits of utilisation of ANC
- Perceived barriers to its utilisation, including inaccessible, unacceptable, unaffordable and unavailable adolescent-friendly ANC services

The next chapter discusses the research methodology adopted to conduct the four phases of this study in attempting to identify factors that could influence pregnant adolescents' utilisation of ANC services in Bulawayo, Zimbabwe.

CHAPTER 3

Research methodology

3.1 INTRODUCTION

This chapter discusses the research methodology in four phases. The first phase describes the research methods that were applied during the review of ANC records for the adolescent mothers; the second phase discusses the process of eliciting data from pregnant adolescents, and the third from those adolescent mothers who delivered their babies without attending ANC. The fourth phase describes the data collecting process from the midwives working in the maternity settings of Bulawayo, Zimbabwe.

The chapter will describe triangulation, including the types of triangulation appropriate for the study. The descriptive research design for this study was applied in all four phases. Analyses of the findings for each of the four phases were done using triangulation in order to obtain diverse views about the utilisation of ANC services by adolescent mothers in Bulawayo (Burns & Grove 2005:229). This chapter will also outline the plan for data presentation and analysis. The actual analysis and discussion of the research results will be presented in subsequent chapters of this thesis; chapters 4-7 will analyse and discuss the results of phases one to four respectively. The results obtained during the four phases of the study will be compared and contrasted in chapter 8 of this thesis.

3.2 SCOPE OF THE STUDY

The study was conducted in Bulawayo, the second largest city in Zimbabwe. Bulawayo has an estimated population of 864 232 (City of Bulawayo 2004:1). In Bulawayo, health care services, including ANC, are provided by the PHC clinics, government hospitals, private hospitals, surgeries and nursing homes. This study focused on ANC services that are rendered at the 18 local government PHC and the two government hospitals. All 18 PHC clinics provide ANC services, but only four of them, together with the two government hospitals, provide delivery services. The two government hospitals provide specialist services to pregnant women with

health risks that require the services of obstetricians, physicians, paediatricians and intensive midwifery care. These women are referred from the PHC clinics and provincial hospitals in Matebeleland South, as well as in the Midlands and Masvingo regions of Zimbabwe. The study also focused on adolescent mothers who did not attend ANC but delivered their babies at the four PHC clinics and the two government hospitals that conduct deliveries. A total of 3 777 booked adolescent mothers and 965 unbooked adolescent mothers delivered their babies at the four PHC clinics and the two government hospitals during 2005 (MOHCW 2005:1).

3.3 DESIGN OF THE STUDY

A research design is an overall plan or picture of the study that spells out basic strategies and efficient methods that are used to obtain data about a specific phenomenon (Polit & Beck 2004:162). The research design is also defined as a complete strategy that provides the plan for the overall structure that the researcher follows, namely the data collected and the data analyses conducted. Decisions on methods to be used should aim at achieving greater control over factors that may interfere with the validity and reliability of the study findings. (Burns & Grove 2005:211; Brink & Wood 2001:99; Leedy & Ormrod 2001:91).

3.3.1 Quantitative research design

Qualitative research designs involve the collection of data using narrative descriptions, while quantitative designs involve the investigation of phenomena in a rigorous and controlled design using precise measurement (Polit & Beck 2006:508). The study utilised a quantitative non-experimental design in all four phases of the methodology. According to Brink and Wood (2001:99), the purpose of a design is to provide a plan for answering research questions and to specify control mechanisms. The quantitative nature of the research design is concerned with measurement and statistical analyses of data where the investigation of a phenomenon involves rigorous and controlled design as well as the use of both deductive and inductive reasoning (Cormack 1996:135; Polit & Hungler 1995:712). A quantitative research design provides a broad view of a large sample through using a representative sample (Mouton 2001:152).

According to Polit and Beck (2006:179), quantitative designs can be experimental, quasi-experimental or non-experimental and they use descriptive or inferential statistics. They can be cross-sectional in nature or longitudinal over an extended period of time. This study utilised non-experimental and cross-sectional designs because data were collected at specific points in time

and there was no experimental manipulation of the subjects. Data were collected from the natural environments, namely ANC records, the ANC clinics and the postnatal wards.

3.3.2 Non-experimental research design

Non-experimental designs are often used in nursing studies because some human characteristics are not subject to experimental manipulation because of ethical implications (Polit & Beck 2004:188). Non-experimental research designs are categorised into two broad classes: the ex-post facto correlational design and the descriptive research design (Polit & Beck 2004:192). Ex-post facto or correlational research is designed to explore the causal relationships and can be either retrospective or prospective. Retrospective designs link observed existing phenomena to the phenomena that occurred in the past, while prospective correlational designs attempt to link the presumed cause to the presumed future effect (Polit & Beck 2006:188). The non-experimental descriptive design was used in all four phases of the study in order to observe, describe and document factors influencing pregnant adolescents' utilisation of ANC services. None of the ANC records of the adolescent mothers in phase one, the pregnant adolescents in phase two and
the adolescent mothers in phase three or the midwives working in the ANC clinics and postnatal wards were subjected to any experimental manipulation in this attempt to understand the pregnant adolescents' utilisation of ANC services in Bulawayo.

3.3.3 Descriptive research design

Descriptive designs are used to obtain information about the characteristics of phenomena within a particular field of study. Descriptive designs can be used to develop a theory, identify problems in current practice, justify current practice, make judgments and determine what others are doing in similar situations (Burns & Grove 2005:232). Descriptive designs can be used in both qualitative and quantitative approaches. A quantitative descriptive research design was used in the study because it provides detailed information about the variables under study, namely pregnant adolescents and ANC utilisation (Brink & Wood 2001:108). According to Burns and Grove (2005:232) and Polit and Beck (2004:193), the purpose of the descriptive design is to provide a true picture of situations as they naturally happen by observing, describing and documenting. The descriptive design was expected to yield a true picture of ANC services in Bulawayo, identify challenges influencing the pregnant adolescents' utilisation of ANC services

in Bulawayo and make recommendations on ANC services that would meet the pregnant adolescents' needs.

3.4 TRIANGULATION

Triangulation is defined as the collection of data from a variety of sources in a study of the same phenomenon (Burns & Grove 2005:224). The purpose of using triangulation is to minimise the limitations that stem from using a single method (Ziyani et al 2004:12). The hypotheses are tested using a series of complementary methods which increase the reliability and validity of the findings.

Denzin (1989) in Burns and Grove (2005:225) identifies the following types of triangulation:

- *Data triangulation,* which involves the collection of data of the same foci from multiple sources in order to obtain diverse views of the phenomenon under study and for the purpose of enhancing validity (Burns & Grove 2005:225). Data triangulation was appropriate for this study as data were collected from subjects of different characteristics and different backgrounds, but the focus was on the utilisation of ANC services by pregnant adolescents. Data were collected from four categories of subjects of different characteristics. Data sources comprised the adolescent mothers' antenatal records; the pregnant adolescents attending ANC; the adolescent mothers who delivered in the postnatal wards without attending ANC; and the midwives working in the maternity settings of Bulawayo. Cross-tabulation of data using the Statistical Package for Social Sciences (SPSS) version 10 computer program was done in order to compare the findings about pregnant adolescents' utilisation of ANC services in Bulawayo. Different types of sources provide insights about the same phenomenon; provide an enriched explanation of the problem and assist in validating conclusions (De Vos, Strydom, Fouche & Delport 2005:362).
- *Time triangulation,* which involves gathering data at different times of the day or at different times of the year (Polit & Beck 2004:431). In this study data from ANC records were collected between December 2006 and January 2007, interviews with pregnant adolescents and the adolescent mothers who had delivered their babies without attending ANC were conducted between February 2007 and April 2007, while the self-administered questionnaires were distributed to midwives during July 2007. Time

triangulation is similar to test-retest reliability because it determines the congruence of the phenomenon across time (Polit & Beck 2004:431).

- *Space triangulation,* which aims to validate the data by testing them for consistency by gathering data of the same phenomenon from multiple sites (Polit & Hungler 1995:428). In this study data were collected from the PHC clinics and the central hospitals.
- *Person triangulation,* which involves collecting data from people of different types and different levels for the purpose of validating multiple perspectives on the phenomenon (Polit & Beck 2004:431). Data in this study were collected from the adolescents' ANC records, the pregnant adolescents attending ANC, the adolescent mothers who had delivered their babies in hospitals without attending ANC and from the midwives working in the maternity settings of Bulawayo.
- *Investigator triangulation, which* refers to a situation where two or more investigators with diverse backgrounds examine the same phenomenon and each one of them has a specific role in the study. This method removes the potential for bias which might occur if there is only one investigator (Burns & Grove 2005:225). The researcher utilised two trained research assistants for conducting interviews with pregnant adolescents in phase two and with adolescent mothers in phase three of the research. This reduced potential bias during the data collection stage because the research assistants were not involved in the other stages of the study.
- *Theoretical triangulation,* which uses all the theoretical interpretations that could be applied to a given phenomenon and critically examines them from different theoretical points of view (Polit & Beck 2004:431). Theoretical triangulation was not used in this study as only one theoretical framework the HBM was used to contextualise this study.
- *Methodological triangulation, which* refers to the use of two or more research methods in a single study to address a problem (Polit & Beck 2006:333). This study did not utilise this method as only one research design, the quantitative approach, was used in all four phases.
- *Analysis triangulation,* which uses two or more different analysis techniques in order to evaluate similarity of findings (Burns & Grove 2005:226). This study used the SPSS version 10 computer program to analyse data from closed questions, while simple descriptions were used to analyse data from open-ended questions of the interview schedule and the self administered questionnaires. Thus analysis triangulation was not used in this study.

3.5 ORGANISATION OF THE STUDY IN FOUR PHASES

The study was conducted in four phases. Phase one describes the procedure of collecting data from the adolescent mothers' ANC records, phases two and three deal with data collection procedures from the pregnant adolescents attending ANC and those adolescent mothers who delivered their babies without attending ANC, while phase four addresses the data collection process from midwives working in the maternity centres of Bulawayo. The research steps followed in these four phases are described according to the following areas:

Phase 1: Checklists: Adolescents' ANC records

- Population and sampling
- Research instrument and data collection procedure
- Validity
- Reliability
- Ethical considerations
- Method of data analysis

Phases 2 and 3: Structured interviews conducted with pregnant adolescents and post partum unbooked adolescent mothers

- Population and sampling
- Research instrument and data collection procedure
- Validity
- Reliability
- Ethical considerations
- Method of data analysis

Phase 4: Self-administered questionnaires for midwives

- Population and sampling
- Research instrument and data collection procedure
- Validity
- Reliability

- Ethical considerations
- Method of data analysis

3.6 PHASE 1: CHEKLIST FOR THE ADOLESCENTS' ANC RECORDS

Phase one describes the data collection process from adolescent mothers' ANC records using a quantitative, non-experimental and descriptive method. The findings attempted to assess the nature of recorded ANC provision in Bulawayo. The adequacy, quality and effectiveness of ANC provision might influence the utilisation of ANC services by pregnant adolescents in Bulawayo.

3.6.1 Population and sampling in phase 1

The population of adolescents' ANC records for phase 1 of the study comprised all the ANC records, of adolescents whose babies had been delivered between 1 September and 30 November 2006, at the four PHC clinics and two central hospitals in Bulawayo that participated in this study.

Sampling is the process of selecting a portion of the population and in quantitative studies the representativeness of the sample enhances generalisation of the findings (Polit & Beck 2004:291). Sampling methods are classified into probability and non-probability sampling methods. *Probability sampling* involves randomness in selecting elements into the sample and is the more respected of the two, as there is a probability that each element in the population will be included in the sample (Polit & Beck 2004:291). The commonly used probability sampling methods are simple random, stratified random, cluster and systematic sampling. In simple random sampling elements are selected from the sampling frame for inclusion in the study and each study element has a probability greater than zero of being selected for inclusion in the study (Burns & Grove 2005:751). Stratified random sampling is used when the researcher wants to include certain characteristics in the variables that are critical to the study such as age group, gender and social class (Burns & Grove 2005:753). According to Brink and Wood (2001:140), cluster sampling is used when the study elements cover a wide geographical area and it is not possible to use simple random sampling procedures. It involves the process of moving through stages until the sample has been selected. Systematic sampling involves selecting every nth individual on the list, provided that a list of all the members of the population is available, and

investigate the nature of recorded ANC care provided to pregnant adolescents (De Vos et al 2005:322), based on the assumptions that documented care reflected care rendered, and that poor ANC care might discourage adolescents from utilising ANC services.

A checklist is a type of a questionnaire consisting of a series of questions on a topic that require the same response format from each respondent (Polit & Hungler 1995:336). Checklists are relatively efficient and easy to understand, although they tend to have forced-choice and rigid questions (Polit & Hungler 1995:337). In this study, the checklist was used to review adolescent mothers' ANC records because its advantages outweighed the disadvantages. Items for the checklist were derived from the Zimbabwe goal-oriented protocol (see Annexure H) and the researcher recorded the care that was documented (see Annexure D). The use of a checklist is criticised for not reflecting human behaviour such as attitudes and non-verbal communication (De Vos et al 2005:323). However, analysis of the ANC records was the initial phase in attempting to determine whether the perceived benefits such as adequacy, quality and effectiveness of ANC could influence the pregnant adolescents' utilisation of ANC services in Bulawayo (see sections 2.5.1.1; 2.5.1.2; 2.5.1.3).

3.6.3 Validity of the checklist in phase 1

Validity is concerned with the extent to which the instrument reflects the phenomenon being examined and addresses the appropriateness, meaningfulness and usefulness of specific inferences drawn from instrument scores (Burns & Grove 2005:376). According to Polit and Beck (2004:423) and Leedy and Ormrod (2001:98), there are four types of validity, namely:

Face validity, which refers to whether the instrument looks as though it is measuring the appropriate constructs. This type of validity is not usually accepted as evidence of instrument validity as it appears to be subjective. Face validity was not used in this study.

Content validity, which is described as the degree to which an instrument provides an appropriate and adequate sample of items or content for the construct that is being measured. Content validity is based on judgment by experts but has no objective measure to reflect adequate content coverage (De Vos et al 2005:161). The content validity index (CVI) uses a four point scale (Polit & Beck 2004:423) whereby the experts rate the content validity as follows:

1= not relevant 2= average 3= relevant 4= very relevant.

A CVI score of 4 (.80) is rated high and indicates that the content is very relevant to the phenomenon to be studied. Midwifery experts and obstetricians were consulted to use the CVI formula to assess the content validity of the checklist. The average CVI score was 4 (.80) after repeated adjustments of the questions, which confirmed the content validity of the checklist. The project promoters also agreed that the checklist's items were relevant to the evaluation of recorded ANC services rendered to pregnant adolescents.

Criterion related validity refers to the extent to which the results of an assessment instrument correlate with another related measure. The availability of an acceptable, reliable and valid criterion is a requirement for measuring criterion-related validity (Leedy & Ormrod 2001:98). In this study the checklist was designed to measure the adequacy, quality and effectiveness of ANC services against the stipulated goal-oriented ANC guidelines (MOHCW 2001:27).

Construct validity is difficult to measure as it is more concerned with the underlying attribute than with the scores that the instrument produces and it uses both logical and empirical procedures (Polit & Hungler 1995:421). An approach developed by Campbell and Fiske (1959 in Polit & Hungler 1995:421), known as the multi-trait-multimethod matrix method (MTMM), ensures construct validity by relying on evidence of yielding similar results where different methods of measurement were applied (Polit & Hungler 1995:421). This type of validity was not measured due to the unavailability of other measuring methods. The validity of the checklist was enhanced through comparing the instrument's items with the Zimbabwe goal-oriented ANC guidelines and also by consulting midwifery experts, obstetricians, a statistician and two promoters.

3.6.4 Reliability of the checklist in phase 1

Reliability refers to the degree of consistency or dependability with which a research instrument measures the attributes it is designed to measure (De Vos, et al 2005: 169). Reliability of an instrument is crucial to consistency in producing similar results, if employed under similar conditions, regardless of who uses the instrument and irrespective of time and place. Polit and Hungler (1995:416) assert that an instrument is reliable if repeated measurements produce limited variations. Each ANC record was evaluated twice – at two separate occasions. The two checklists completed about each ANC record were compared. There were minimal differences in the test-retest scores, and the reliability coefficient was relatively high (=.80). The researcher used the services of the statistician in computing the reliability score.