Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in a Sub District North of eThekwini District, South Africa

Ethics: Biomedical Research Ethics Committee

(BREC 00000363/2019)

by

Preantha Reddy

Student number: 209521513

Supervisor: Dr. O. B. Baloyi

Co-supervisor: Dr. M. A. Jarvis

Dissertation submitted to the School of Nursing and Public Health

College of Health Sciences

University of KwaZulu-Natal

In partial fulfilment for the Coursework Master's in Nursing (Advanced Midwifery, Maternal and Child Health Nursing).

2020

DECLARATION

I, Preantha Reddy, student number 209521513, declare that:

I. The research reported in this dissertation, except where otherwise indicated, is my original research.

II. This thesis has not been submitted in part, or whole, to UKZN or any other tertiary institution for purposes of obtaining an academic qualification, whether by myself or any other party.

III. My contribution to the project was as follows: I read deeply on the topic to arrive, with supervision, at the conceptualisation of the topic, the design of the study, and data collection methods. I solely liaised with the research sites for access and co-operation in the study. I headed up the data collection, I led the compilation of the thesis, the analysis of the data, that the contribution of others in the project was as follows: …….

IV. This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as sourced from other persons.

V. This dissertation does not contain other persons' writing, unless specifically acknowledged as sourced from other researchers. Where other written sources have been quoted, then:

a) Their words have been re-written but the general information attributed to them has been referenced;

b) Where their exact words have been used, their writing has been placed inside quotation marks, and referenced.

VI. This dissertation does not contain text, graphics or tables copied and pasted from the Internet, unless specifically referenced.

VII. This original piece of work is submitted for Course Work Master's degree in Advanced Midwifery, Maternal and Child Health.

Signature: 

Date: 09 June 2020

Discipline of Nursing, School of Nursing and Public Health, College of Health Sciences, University of KwaZulu-Natal South Africa.

This dissertation has been examined and approved for submission.

Supervisor: Dr OB Baloyi

Date:09 June 2020

Co-supervisor: Dr M A Jarvis

Date 09 June 2020

DEDICATION

I dedicate this thesis to

My love, my husband, Krish Reddy

My loving parents and aunt (Mack and Selvie Reddy, Saroj Naidoo)

From you all I take the inspiration to continue and attribute my success to your patience, encouragement and unconditional love….

ACKNOWLEDGEMENTS

- My first appreciation is too the mighty God above who has created me and given me the strength, knowledge and determination to complete my research study.
- My love, my husband Krish Reddy for his constant love, support and believing in me.
- My loving parents, aunt and mother-in-law for instilling self-belief, guidance and wisdom.
- My sister-in-law Malini Reddy for additional support and motivation.
- Friends that became family along this journey.
- Reneshen and Nicole for been a source of motivation and always holding the guiding light.
- Sanveer my dearest and oldest friend thank you for your constant support and guidance has helping me through this time, your voice of reason.
- Dr Olivia Bayoli and Dr Mary-Ann Jarvis my supervisor and co-supervisor without your support, supervision and knowledge my study would have not been completed. The voice reinstating in my thoughts of how can I do better and achieve my goal. I sincerely thank you for all the time, consideration and thought that was put into my supervision. You both have been strong role models to me.
- Dr S.Hussen I thank you for your assistance in your published work and permission for adaption of your tool. Your research had laid the foundation for my research to build on.

ABSTRACT

Background

The late utilisation amongst adolescents of Antenatal Care (ANC) has shown to be detrimental to the pregnancy and the mother as inappropriate screening, testing and management is done due to delayed initiation. This is especially so, in the vulnerable population of adolescents where they are more susceptible which can contribute to maternal and child mortality. The adolescent is exposed to many challenges during pregnancy that can affect their utilisation of ANC, resulting in late booking.

Aim

The aim of the study was to identify the contributing factors to the adolescent's (15-19 years) late entry to ANC at the select Primary Health care clinics.

Methodology

A quantitative study was conducted with self-administered questionnaires to adolescents who had booked late (>20 weeks) for ANC. The questionnaire was adapted to identify the contributory factors to the late utilisation of ANC with adolescents in which the variables socio-economic factors, knowledge of ANC, experiences of ANC services and obstetrical history were examined. The questionnaire was structured to maintain anonymity and had asked short ended questions and has Likert scales. Content and face validity was used to verify the questionnaire and show evidence that the tool is measuring the target construct. Face validity was obtained with the help of three health care experts (Medical officer, Nursing service manager and Midwife). Data analysis was performed using IBM Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics such as frequencies and percentages were used to summarise categorical variables. Central tendency and dispersion of data were measured using means and standard deviations for normally distributed variables and medians and interquartile ranges for skewed variables. The Anderson and Newman`s Health Utilisation model guided the study.

Results

The response rate was 88%, with 96 respondents completing the questionnaire (anticipated sample size of 109). The data was collected from participants (15-19 years) in 13 clinics (eight Primary Health Care Clinics and five Community Health Care Clinics). The demographics showed majority age group of 18 years (n= 27, 28.1%), 95.8% (n= 92), of participants were single and 85.45% (n= 82) unemployed. The obstetrical and current history results showed the majority of participants had not used any contraception method (n= 68, 70.8%), 88.5% (n= 85) had not planned their pregnancy and 77.1% (n= 74) had no health problems. The majority of participants reported that they were satisfied with the experiences at the clinics, with 78.1% (n= 75) and 65.6 % (n= 63) were satisfied with the privacy and the staff respectively. A quarter (n =24, 25%) of the participants did not know the importance of ANC for pregnancy, while a lesser number (n=18, 18.8%) were unaware of the significance of ANC for their unborn baby.

Conclusion

Study findings highlighted the contributory factors to adolescents' late utilisation of Antenatal Care. Basic Antenatal Care Plus Programme (BANC PLUS) has been shown to be beneficial to the adolescent as early utilisation of ANC can reduce maternal mortality. However, based on the Anderson and Newman Health Utilisation framework contributory factors, specific to the select geographical area were identified for late ANC utilisation. The targeting of the contributory factors through the recommendations can add value to the maternal health of the adolescent and in so doing recognise the global goal of universal health coverage and achieving Sustainable Development Goal 3.1.

Recommendations

Recommendations included Antenatal learning and supports, strengthening of health care systems and promotion and recognition of staff.

Limitations

Only selecting one district from eThekwini and only including the Department of Health clinics.

KEYWORDS

Antenatal Care; Basic Antenatal Care Plus (BANC PLUS); adolescent; predisposing; enabling; illness level; pregnancy; utilisation; booking.

ABBREVIATIONS

A.N.C	Antenatal Care
BANC	Basic Antenatal Care
BREC	Biomedical Research Ethics Administration
LMIC	Lower to Middle Income Countries
MMR	Maternal Mortality Rate
SANDoH	South African National Department of Health
PHC	Primary Health Clinic
S. A	South Africa
SPSS	Statistical Package for Social Science
WHO	World Health Organisation

TABLE OF CONTENTS

DECLARATION i
DEDICATION iii
ACKNOWLEDGEMENTS iv
ABSTRACT v
ABBREVIATIONS vii
CHAPTER ONE: INTRODUCTION TO THE STUDY 1
1.1. Introduction and background 1
1.2. Problem statement 3
1.3. Purpose of the study 3
1.4. Research objectives, research questions 3
1.5. Significance of the study 4
1.5.1. Nursing Practice 4
1.5.2. Nursing Research 5
1.5.3. Nursing Policies 5
1.5.4. Nursing Education 5
1.6. Key and operational definitions 5
1.7. CONCEPTUAL FRAMEWORK 7
1.7.1. Introduction 7
1.7.2. Constructs of the Health Services Utilisation model 7
1.8. Summary of Chapter One 9
CHAPTER TWO: LITERATURE REVIEW 10
2.1. Literature Search 10
2.2. Characteristics Contributing to Late Utilisation 11
2.3. Predisposing Characteristics For Late Utilisation of Antenatal Care Amongst Adolescents 12
2.3.1. Age of the adolescence 12
2.3.2. Adolescent`s level of education and occupation 13
2.3.3. Marital status and family size of the adolescent 14
2.3.4. Past illness of the Adolescents 16
2.3.5. Religion and cultural beliefs 16

2.4. Enabling Characteristics Amongst Adolescents for Utilisation of Antenatal Care 17
2.4.1. Income for adolescent mother 18
2.4.2. Geographical location of the adolescent's residence 19
2.4.3. Healthcare worker and facility issues 19
2.5. Summary Chapter Two 20
CHAPTER THREE: METHODOLOGY 21
3.1. Introduction 21
3.2. Research Paradigm 21
3.3. Research approach and design 22
3.3.1. Study Approach 22
3.3.2. Study Design 22
3.4. Study Setting 22
3.5. Sampling and population 24
3.5.1. Sampling 24
3.5.2. Study population 25
3.6. Instrument for data collection 26
3.6.1. Description of the questionnaire 26
3.6.2. Content Validity 28
3.6.3. Face validity of the questionnaire 29
3.6.4. Reliability 29
3.6.5. Inter-rater reliability 30
3.7. Data collection 30
3.7.1. Preparation for data collection 30
3.7.2. Data collection 31
3.7.3. Field Information 32
3.8. Data management and storage 33
3.9. Data Analysis 33
3.10. Ethical considerations 33

3.11. Summary of chapter three 36
CHAPTER FOUR: RESULTS 37
4.1. Introduction 37
4.2. Response Rate 37
4.3. Presentation of Findings 38
4.3.1. Demographic characteristics of respondents 38
4.3.2. Obstetrical History of respondents 39
4.3.3. Respondents' knowledge of antenatal care 40
4.3.4. Respondents' experiences of ANC services 41
4.3.5. Respondents current pregnancy history 41
4.4. Summary of Chapter Four 43
CHAPTER FIVE: DISCUSSION OF RESULTS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION 44
5.1. Introduction 44
5.2. Discussion 44
5.2.1. Predisposing characteristics for adolescent's (15-19 years) (*n*=96) late utilisation of ANC. 44
5.2.2. Recommendations to enhance early ANC booking. 46
5.2.2.1 Recommendation One 46
5.2.3. Enabling characteristics for adolescent`s (15-19 years) (*n*= 96) late utilisation of ANC and recommendations to enhance early ANC bookings. 47
5.2.4. Recommendations to enhance early ANC booking. 47
5.2.4.1. Recommendation Two 48
5.2.4.2. Recommendation Three 49
5.2.3. Illness level of adolescents (15-19 years) (*n*= 96) which contribute to late utilisation and recommendations to enhance early ANC bookings 49
5.2.4. Key findings of the study 50
5.3. Recommendations 51

5.3.1. Midwifery practice 51
5.3.2. Midwifery research 51
5.3.3. Education 51
5.4. Limitations 52
5.5. Summary of Chapter Five 52
5.6. Conclusion of the study 52
REFERENCES 53
Appendix 1: Questionnaire 57
Appendix 2: Isizulu version of questionnaire 61
Appendix 3: Information sheet and consent to participate in the research study for adolescent 18-19 years 65
Appendix 4: Information sheet and consent to participate in research study for minors independent consent 67
Appendix 5: Letter by translator 69
Appendix 6: Confidentaility agreement for research assistants 70
Appendix 7: Request for waiver 71
Appendix 9: Letter to kzndOH 74
Appendix 10: TRREE research ethics certificates 75
Appendix 11: KZNDoH approval letter 78
Appendix 12: BREC approval letter 79
Appendix 13: Certificate from editor 80

LIST OF TABLES

Table 1: Content validity 28
Table 2: Data collection allocation roster from 17 February 2020 to 06 March 2020 31
Table 3: Demographics of respondents (n=96) 38
Table 4: Obstetrical History of respondents (n= 96) 40
Table 5: Respondents' knowledge of antenatal care (n= 96) 40
Table 6: Experiences of respondents when visiting ANC clinic (n= 96) 41
Table 7: Respondents current pregnancy history (n=96) 41
Table 8: History of current pregnancy: Enabling factors 42

LIST OF FIGURES

Figure 1: Anderson and Newman's Individuals Health Service Utilisation Model 1973 (Andersen & Newman, 1973) 8
Figure 2: Sub Districts of eThekwini (KZNDoh, 2018) 24

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1. INTRODUCTION AND BACKGROUND

Globally in 2018 the adolescent (15-19 years) birth rate was recorded at 43.9 per 1000 live births (WHO, 2018a). The World Health Organisation (WHO) (2004) and South Africa (SA) (SANDoH, 2015b) both define an adolescent as a person between the ages of 10-19 years. Worldwide the number of births to adolescents (15–19 years) are estimated at 11% and 90% of these births occur in lower-middle income countries (LMICs) (Ganchimeg et al., 2014). Annually, an estimation of 21 million girls (15-19 years) and a further two million girls under 15 years become pregnant in LMIC (WHO, 2018b). However despite the large numbers, globally in the period 1990-2015 the adolescent birth rate decreased from 65 to 47 per 1000 live births and even lower in 2018 at 43.9 per 1000 live births (WHO, 2018a). This decline is not expected to be sustained as global projections show that adolescent pregnancies will increase in numbers by 2030, due to a projected growth worldwide in the adolescent population numbers (WHO, 2018b), in particular Sub Saharan Africa (from 75 to 113 million between 2010-2030) (UNFPA, 2013). Already in 2018, Africa`s adolescent (15-19 years) birth rate was close to the 2030 projections, recorded at 99.1 per 1000 live births and in 2017 South Africa's rate was 43 per 1000 live births(WHO, 2018a; World Bank Group, 2017).

Globally adolescent pregnancy is a key predisposing factor to maternal (MMR) and child mortality rates (WHO, 2018b). In LMICs adolescent pregnancy accounts for 99% of maternal deaths amongst 15-49 years old women (WHO, 2018b). In 2015 the global MMR including adolescents (15-49 years) was 216 per 100 000 live births (World Bank, 2015) versus MMR in South Africa (S.A.) for under 18 years which was 78.29 per 100 000 per live births which shows the substantial contribution made by S.A to the maternal mortality figures (SANDoH, 2015b) . This can be attributed to the finding that in LMICs adolescents are more at risk for developing complications such as pre-eclampsia, eclampsia, puerperal endometritis and systemic infections

(Ganchimeg et al., 2014) which predispose them to caesarean section (Odimegwu & Mkwananzi, 2016).

As a strategy to prevent and minimise unfavourable outcomes in all pregnancies the WHO (2016) developed the Basic Antenatal Care Plus (BANC PLUS), (previously known as Basic Antenatal Care [BANC]). BANC was built on evidence that an increase from four to a minimum of eight ante-natal care (ANC) clinic visits, would allow the midwife to identify and treat complications of pregnancy and improve pregnancy outcomes (WHO, 2016). ANC services are a strategy that ensures the best possible outcome of pregnancy for mother and child (SANDoH, 2015b). In April 2017, BANC was endorsed by the South African National Department of Health (SANDoH), recognising that a continuum of care is a key strategy to reduce maternal mortality (SANDoH, 2015b). However South African Maternity Guidelines (BANC PLUS and South African Maternity Guidelines) have not translated into practice amongst adolescents in South Africa where, despite free ANC services, late ANC bookings remain prevalent (Muhwava, Morojele & London, 2016).

The South African Maternity Guidelines define booking after 20 weeks as late (SANDoH, 2015b). Socio-economic factors not only predispose adolescents to pregnancy in LMICs, but also affect their utilisation of ANC services (Odimegwu & Mkwananzi, 2016). Patient related factors to adolescents' access to ANC vary from age discrimination, lack of confidentiality to unplanned pregnancies (Bwalya et al., 2018; Heaman et al., 2014). Service related issues such as strained health care worker relationships can also negatively affect adolescents' utilisation of ANC services (Bwalya et al., 2018). The above mentioned all contribute to, socio-emotive and economic factors which can influence the adolescent during her pregnancy and their utilisation of ANC services (Bwalya et al., 2018).

According to the District Health Plan 2018/2019 Sub District North of eThekwini, ANC booking before 20 weeks of gestation was at 64% during 2016/2017, the lowest amongst the four sub districts in eThekwini, with the highest reported at 70% in Sub District West (KZNDoH, 2018). In addition, amongst the districts in eThekwini the Sub District North presents with the highest rate of deliveries under the age of 18 years, at 7.8%, compared to the lowest of 6.7% in Sub District South Central (KZNDoH, 2018). Sub District North with the highest rates of late ANC

bookings coupled with the highest rate of adolescent pregnancies is cause for concern for maternal health as the population numbers are growing and it needs investigation.

1.2. PROBLEM STATEMENT

ANC services centre on providing health promotion, screening, diagnosis, disease prevention and management in pregnancy (WHO, 2016). It is evident that by providing timeous ANC services, mothers' lives can be saved (WHO, 2016). In the Sub District North of eThekwini, there is a two-prong concern for adolescents' health. Firstly, the rate of adolescent pregnancies of 7.8% is the highest of the four eThekwini Sub districts. Secondly, the rate for ANC bookings before 20 weeks of gestation is at 64% which includes adolescents, and is the lowest amongst the four Sub Districts (KZNDoH, 2018). The percentages represent lower compliance to the BANC PLUS and South African Maternity Guidelines, which recommend that all women including adolescents, attend ANC as soon as they find out they are pregnant and before 20 weeks of gestation (SANDoH, 2015b). Thus in order to offer the best possible maternal health care to adolescents it is important to understand the factors which contribute to their late entry into ANC at Primary Health Care Clinics.

1.3. PURPOSE OF THE STUDY

The aim of the study was to identify the factors which contributed to adolescents' (15 to 19 years) late utilisation of antenatal care services at Primary Health Care Clinics in Sub District North, eThekwini, South Africa.

1.4. RESEARCH OBJECTIVES, RESEARCH QUESTIONS

In this research study, there were two research objectives, each with a research question. In order to assist the readability, the research questions follow the related objective.

Research objective one

To identify and describe the factors that contribute to adolescents' (15 to 19 years) late utilisation of ANC at PHC clinics in Sub District North, eThekwini.

Research question one

What are the factors that contribute to adolescents' late utilisation of ANC at PHC clinics in Sub District North, eThekwini?

Research objective two

To develop recommendations to enhance early ANC bookings by adolescents (15 to 19 years) into PHC clinics in Sub District North, eThekwini.

Research question two

What are the recommendations for ANC services in PHC settings to enhance adolescent utilisation in Sub District North, eThekwini?

1.5. SIGNIFICANCE OF THE STUDY

1.5.1. Nursing Practice

The identification of the factors that contribute to the late entry of adolescents (15 to 19 years) into ANC services has a potential to increase the understanding of the underlying barriers. The emergence of the barriers can highlight the areas for service recommendations to address the barriers to late entry. In the light of ANC services demanding no payment by the healthcare user and through utilisation of the information gleaned from this study there is a possibility to reduce the maternity mortality rate in eThekwini. The results from this study will help to better understand the factors that contribute to adolescents (15 to 19 years) not attending ANC early which can assist at a community level to change this underutilisation of ANC by community leaders.

1.5.2. Nursing Research

Through the identification of the contributory factors to adolescent's late entry into ANC it provides concrete evidence that adds value to the existing body of knowledge in nursing research specifically to the barriers in utilisation of ANC.

1.5.3. Nursing Policies

EThekwini Health district may use the findings of this study, to help develop adolescent sensitive strategies and guidelines towards ANC in doing so help to improve and sustain better ANC utilisation amongst adolescents.

1.5.4. Nursing Education

The identification of the contributory barriers to late ANC that the adolescents present with, will offer once the information is published and disseminated to clinical practice of Midwifery, an opportunity to increase the midwives' understanding and uplifting the holistic care that is rendered to the adolescent.

1.6. KEY AND OPERATIONAL DEFINITIONS

The following terms have been defined and as indicated operationalised for this study.

Adolescent "is defined as a person between the ages of 10-19 years of age" (WHO, 2018a).

> *Operationalised definition:* In this study an adolescent is described as a person between the ages of 15-19 years.

Adolescent pregnancy is defined as pregnancy in a women aged between 10-19 years of age (SANDoH, 2015a; WHO, 2004)

> *Operationalised definition:* For the purpose of this study adolescent pregnancy refers to pregnancies in mothers between the ages of 15-19 years of age.

Adolescent birth rate: "The annual number of births to women aged 15-19 years per 1,000 women in that age group (WHO, 2018a). It is also referred to as the age-specific fertility rate for women aged 15-19 years" (WHO, 2018a).

Antenatal care "attempts to ensure, by antenatal preparation, the best possible pregnancy outcome for women and their babies" (SANDoH, 2015b).

> *Operationalised definition:* For the purpose of this study antenatal care is defined as the care provided in the ANC clinic of PHC to ensure the best possible pregnancy outcome for women and their babies.

Late booking is booking for ANC on or after 20 weeks of gestation as before 20 weeks is considered early (SANDoH, 2015b) .

> *Operationalised definition:* For the purpose of this study late booking is defined as booking for antenatal care after 20 weeks of gestation.

Maternal mortality ratio (MMR) "is the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 100,000 live births, for a specified year" (WHO, 2016)

Primary Health Care (PHC) clinic "is a facility from which a range of primary health care services are provided and that is normally open eight or more hours a day based on the need of the community to be served" (KZNDoH, 2019)

> ***Operationalised Definition*:** For the purpose of this study a PHC clinic is defined as any one of the 13 facilities at and from which a range of primary health care services, in particular ANC, services are provided and that is normally open nine or more hours a day based on the need of the community to be served.

1.7. CONCEPTUAL FRAMEWORK

1.7.1. Introduction

Anderson and Newman (1973)'s Health Services Utilisation model frames this study. This model is based on a behavioural model of health services use that focuses on contextual and individual determinants of the utilisation of health care (Andersen, Davidson & Baumeister, 2007). The main focus of the individual`s determinants utilisation model is the health behaviour of people, primarily in the use of healthcare and the outcomes resulting in health and service satisfaction (Andersen et al., 2007). Andersen and Newman`s Health Behaviour model proposes that the utilisation of health care is linked to characteristics before a person decides on using health care, namely predisposing and enabling characteristics and illness level (Andersen & Newman, 1973).

1.7.2. Constructs of the Health Services Utilisation model

The contextual characteristics included in the Anderson and Newman`s Health Service Utilisation model are i. the Predisposing characteristics that affect people's utilisation of services, even though these conditions are not responsible for use, ii. Enabling characteristics that promote or prevent use of services iii. Illness level, which has been identified and requiring health services (Andersen et al., 2007).

Firstly the **Predisposing Characteristics** are characterisitcs (demographics; social structure; beliefs) that are present in the people prior to the illness, which are suggested to determine their likelihood to utilise health care (Andersen & Newman, 1973). Demographic characteristics include age, gender, matrial status and past illnesses. Social characteristics include education, race, occupation, family size, religion and residential mobility (Andersen, 1995b). While belief characteristics refer to a person's values, knowledge and attitude towards disease and illness (Andersen, 1995b)(Figure 1).

Predisposing charcteristics influence the second compoment, namely **Enabling Characteristics** (family; community), which suggest that even though some people are predisposed to utilise health care, there must exist a means to do so (Andersen & Newman, 1973). Enabling charcteristics include family characteristics such as income, health insurance and type and access to a regular source of health care (Andersen & Newman, 1973). Community characteristics such as ratio of (health personnel and facilities) to community members, cost of health care and (the

urban verses rural) aspect enable the utlization of health care (Andersen & Newman, 1973) (Figure 1). The third component is the **Illness Level** (perceived; evaluated) which refers to the persons' pre existing health conditions or the probablity of the use of health services before utilising health care (Andersen & Newman, 1973). Perceived characterisitcs are a disablity, diagnoses, symptoms and the general state of a person (Andersen & Newman, 1973). The Evaluated characterisitcs are symptoms and diagnoses, the perceived illness level together with the evaluated illness level influence the need for utilisation of health care (Andersen & Newman, 1973) (Figure 1).

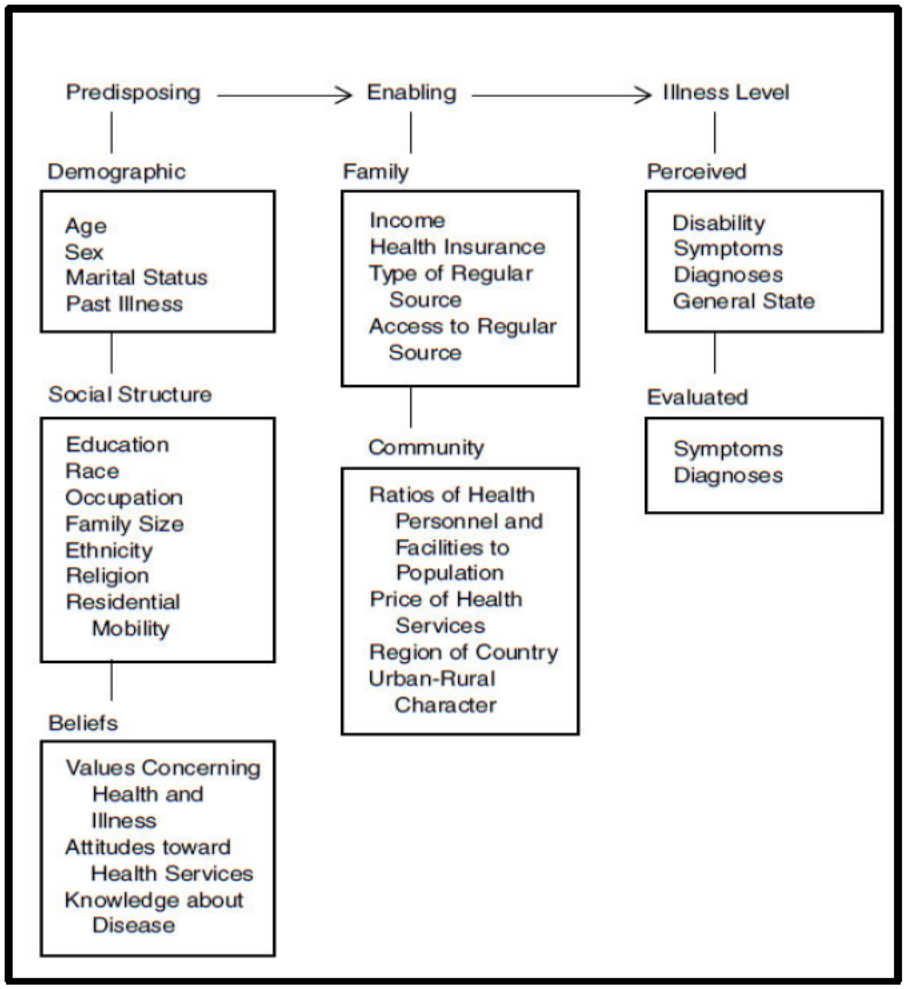


Figure 1: Anderson and Newman's Individuals Health Service Utilisation Model 1973 (Andersen & Newman, 1973)

In this study health insurance and price of health service characteristic was not applicable t as the study was conducted within the PHC settings which offered free ANC services (SANDoH, 2015b). Type of regular source of health care and region of country characteristic was not considered for the study as the study was conducted in the 13 PHC clinics in the eThekwini District, all of which offer ANC services (KZNDoH, 2018).

1.8. SUMMARY OF CHAPTER ONE

This first chapter introduced the research study i.e. identifying the contributory factors to adolescent's late entry into ANC and provided an introduction and background which contained the current statically standing of MMR and the adolescents contribution to this as well as adolescent pregnancy. The research study`s problem was identified and the significance of the study. The antenatal program: BANC PLUS was described for how it could reduce MMR amongst adolescents. It also defines late ANC booking and states some of the factors that hinder the adolescent from ANC booking. The problem statement states the recommended and endorsed gestational age to commence ANC and justifies the examination of the problem faced in Sub District North of late ANC booking amongst adolescents and the high teenage pregnancy rate. The purpose of the study shapes the research questions into asking what could be the possible contributory factors to adolescent's late entry into ANC and the possible recommendations that can be put forth to PHC services for adolescents booking. The objectives were then stated to help shape the findings from the introduction and background and supports the study. Lastly the significance of the study explained how the findings will contribute to the nursing practice, research, policy and education.

The next chapter presents the reviewed literature.

CHAPTER TWO: LITERATURE REVIEW

2.1. LITERATURE SEARCH

The literature search started with the researcher identifying the databases to search for articles that could serve as evidence and supporting information for the literature review. Databases searched were Google Scholar, EBSCOhost, MEDLINE via PubMed and Cochrane Library. The outcome was there was limited research that identified the contributory factors to adolescents' late utilisation of Antenatal Care (ANC) in Primary Healthcare Clinics, in particular in Africa. The examination of maternal health directed polices and reports, both international and national, provided the most recent statistics, programmes and policies that were in place to maintain and monitor maternal health.

Keywords and *MeSH terms: *adolescent pregnancy, *antenatal care, factors contributing to late antenatal booking in adolescents, late antenatal care booking, occurrence of late antenatal booking amongst adolescents,

2.1 INTRODUCTION

The literature was reviewed in three core areas. It commences with an overview of the characteristics contributing to adolescents'' late utilisation of antenatal care (ANC), followed by the predisposing characteristics and closes with the enabling characteristics which contributed to late utilisation. The predisposing characteristics centre around the demographics (age, marital status and past illness), health beliefs towards ANC and social structure (education, occupation family size, religion and residential mobility), while the enabling characteristics have their predominant focus on family (income, type and access to healthcare) and community (health personnel and facility) characteristics.

2.2. CHARACTERISTICS CONTRIBUTING TO LATE UTILISATION

Regular attendance at ANC clinics has proved to reduce maternal mortality rates (MMR) and improve perinatal outcomes (WHO, 2016). Regular and early ANC attendance, together with stricter screening and monitoring, is significant amongst adolescents as they are at higher risk for complications, such as eclampsia (WHO, 2018b). In order to provide structure, increased frequency of ANC screening and thereby managing obstetrical risks more closely, the World Health Organisation (WHO) revised the Basic Antenatal Care (BANC) programme to the current BANC PLUS programme, which allows for the best possible pregnancy outcomes (WHO, 2016b). The recommended WHO BANC PLUS programme emphasises an increase from four to eight ANC visits by a pregnant woman (WHO, 2016b).

This increase in ANC visits is relevant for adolescents who present with a global birth rate of 43.9 per 1000 births (WHO, 2018a), which is of higher prevalence in lower and middle income countries (LMICs), such as sub-Saharan African countries (WHO, 2018b). Global statistics do not reflect adolescent ANC attendance, but show only 61% of mothers, which includes adolescents, seek more than four ANC visits per pregnancy (UNICEF, 2019; WHO, 2018a). In sub-Saharan countries, women access ANC as late as the second to third trimester, which results in ineffective ANC resulting in an increased risk of maternal and neonatal mortality (Grum & Brhane, 2018). Current research has shown that in LMICs there are common predisposing and contributory socio-demographic and economic characteristics that give rise to adolescent's late utilisation of ANC services (discussed later in this chapter) (Andersen et al., 2007; WHO, 2016).

These predisposing and enabling characteristics unavoidably affect the utilisation of ANC services by adolescents, hence the South African Government opted to assist this vulnerable group by providing free maternity services (Dookie & Singh, 2012). In 2017, the South African National Department of Health (SANDoH) sanctioned the BANC PLUS programme, as recommended by the WHO (2017), into the existing ANC services (Govender, Reddy & Ghuman, 2018). In South Africa, free ANC services were designed to meet the needs of pregnant women, however underutilisation and a delay in booking still occurs (SANDoH, 2015b), which is attributed to many demographic and socioeconomic factors experienced more readily by vulnerable population groups, such as adolescents (Grum & Brhane, 2018). ANC visits

particularly before 20 weeks gestation are still low (61%) in South Africa (Dookie & Singh, 2012; UNICEF, 2019).

2.3. PREDISPOSING CHARACTERISTICS FOR LATE UTILISATION OF ANTENATAL CARE AMONGST ADOLESCENTS

Health service utilisation, especially ANC, can be predicted by predisposing characteristics of the adolescent, which include demographics (age, marital status and past illness), health beliefs (attitude towards seeking ANC and health services, their values and concerns towards health and illness and knowledge about disease) and social structures (education, knowledge of ANC by the adolescent, occupation, family size, religion and residential mobility) (Johnson et al., 2003). The above aspects can individually or simultaneously contribute to the adolescent's late utilisation of ANC (Govender et al., 2018).

The following discussion addresses the contribution of each of the predisposing characteristics to the late utilisation of ANC in adolescents.

2.3.1. Age of the adolescence

Over the last decade in particular, LMICs have witnessed an increase in adolescent pregnancy and a subsequent rise in the adolescent birth rate (WHO, 2018a). Mahajan and Sharma (2014) identified, in both rural and urban areas (80% and 66% respectively) of India, that a significant number of young women had married before the age of 20 years due to cultural and economic obligations, and all adolescents were first time mothers (Mahajan & Sharma, 2014). These authors identified this early age of marriage had an impact on the adolescents' mental health and their attitude towards self-care, in particular their utilisation of ANC services, as some adolescents were not mentally nor physically mature enough to make sound decisions towards their health in pregnancy (Mahajan & Sharma, 2014). Likewise, in Ethiopia adolescents' ages predisposed them to book late for ANC (81.5%) (Ejeta et al., 2017). Similarly, in areas in Nepal, Acharya (2016) found there was a higher percentage of mothers above 20 years attending ANC and bookings compared to those below 20 years, with the adolescents' age group showing low compliance to ANC guidelines. In these studies, the common finding was that the predisposing

characteristic of age had deterred the mother from utilisation of ANC services (Acharya, 2016; Berhe et al., 2014).

In other LMICs such as Tanzania and Ghana, adolescent mothers felt they were "too young" to be pregnant and to access ANC, and were of the opinion that ANC was established for older women (Hackett et al., 2019). Similarly, in South Africa studies revealed that adolescents had not utilised ANC as they were scared to disclose their pregnancy to their parents for fear of being disowned, by having a baby out of marriage and being below the age of 18 years (Govender et al., 2018; Kaswa, Rupesinghe & Longo-Mbenza, 2018). The age of the mother has a significant effect on the low and late ANC utilisation due to the portrayal of innocence and fear of exposing herself and her pregnancy to the family; consequently this results in the adolescent endangering the pregnancy (Govender et al., 2018).

Late utilisation of ANC amongst adolescents, which is not only confined to age but also influenced by education level and occupation (Heaman et al., 2014; Johnson et al., 2003).

2.3.2. Adolescent`s level of education and occupation

The educational level of the adolescent mother plays a vital role in her utilisation of ANC services, as this can affect the decision to make the first ANC booking and understanding the benefits of ANC, which will improve her maternal health care (Johnson et al., 2003). Mahajan and Sharma (2014) found that adolescents in the rural areas versus urban areas of India were less likely to have completed high school level of education (22% versus 45% respectively) (Mahajan & Sharma, 2014). Furthermore, the study revealed that although the families from both communities were financially able to educate their girl children they had chosen not to do so, which showed disinterest by parents in attempts to educate female adolescents (Mahajan & Sharma, 2014). This low level of educational status has a direct effect on ANC utilisation, as Mahajan and Sharma (2014) revealed there were more full term deliveries in the urban areas (92%) versus the rural areas (88%), indicating that with a higher educational level adolescents are more knowledgeable about early utilisation of ANC and therefore have better delivery outcomes.

Similarly, Acharya (2016) showed that adolescent mothers in Nepal with no education had less than four ANC visits compared to those with secondary level education who attended more than four visits. The higher the educational level predisposes the adolescent to seek medical help and to have a safe pregnancy and delivery (Heaman et al., 2014; Johnson et al., 2003).

The predisposing characteristic of level of education amongst adolescents is also evident in South Africa, as researchers Govender et al., (2018) and Worku and Woldesenbet (2016) showed lack of knowledge as a significant contribution to ANC utilisation amongst adolescents. Education level is a major factor in accessing ANC amongst adolescents, as this age group is still obtaining their education and might not have gained the knowledge that seeking ANC early in pregnancy is of importance (Worku & Woldesenbet, 2016). In addition, the school-going adolescent needs to divide her attention between her school studies and preparing for being a parent (Odimegwu & Mkwananzi, 2016).

Another predisposing factor to the late utilisation of ANC by adolescents in LMICs is the occupational obligations, wherby mothers feel that earning an income is more important than attending ANC (Solarin & Black, 2013). This is where the adolescent is unable to absent themselves from work to attend ANC and subsequebtly delay their booking until they deem it necessary (Solarin & Black, 2013). However in upper income countries, such as America, women employed outside their homes showed a higher ANC intiation (85%) compared to unemployed women (64%), which can be attributed to better financial resources, transport and child minders for other children in the household in order to support ANC visits (Johnson et al., 2003).

2.3.3. Marital status and family size of the adolescent

Due to economic and cultural beliefs, some adolescents become wives early in their lives and their marital status can impede or promote their utilisation of ANC (Kim et al., 2019; Tesfaye et al., 2018). Research done in Senegal, by Kim et al. (2019), found the husband (63%) was the decision maker on seeking maternal healthcare in the relationship, and 55% of the husbands supported the women in obtaining ANC. This highlights the impediment that marriage had on obtaining ANC (Kim et al., 2019). Conversely, in America and Ethiopia married adolescents showed a higher early utilisation of ANC percentage than did unmarried adolescents (Johnson et

al., 2003; Tesfaye et al., 2018). In this instance, the marriage seemed to support the use of ANC, as they were aware of the benefits of early ANC and the husbands had a positive attitude towards it. Likewise, in South Africa amongst the rural communities, researchers found that adolescents who were married or in a committed relationship were more likely to initiate ANC earlier than adolescents who were not married or in a committed relationship (Ebonwu et al., 2018; Muhwava et al., 2016; Solarin & Black, 2013). The early booking of ANC could be due to the support the married or committed adolescent had gained from her husband or partner versus been single, as the committed adolescents would have financial and emotional support from their partners, (Ebonwu et al., 2018; Muhwava et al., 2016)

In some relationships a different dynamic exists, such as abuse and depression, caused by the husband, which can prevent the adolescent from utilising ANC due to fear or lack of support from their partner (Heaman et al., 2014). However, not being married or in a relationship can also affect the adolescent in attending ANC late, as she may feel ashamed or alone (Manda-Taylor, Sealy & Roberts, 2017). Manda-Taylor, Sealy and Roberts, (2017) also discovered that young mothers felt stigmatised for having a baby out of wedlock, or if they had conceived with a partner with whom they were no longer involved, and would be judged by the community members and healthcare workers when seeking ANC resulting in ANC utilisation being deferred.

Family size can be a deciding factor in utilising early ANC, as the adolescent mother could be faced with the dilemma of whether the pregnancy is wanted or not, as she might not want to expand her family size and therefore delay in seeking ANC (Heaman et al., 2014; Manda-Taylor et al., 2017). The number of children the women already have can affect the utilisation of early ANC, as in India, Meshram et al. (2014) found that the more children the adolescent mother had, the earlier and frequent her visits would be to ANC. The earlier attendance by these adolescent mothers could be attributed to the experience they gained from being a mother versus being educated on the benefits of seeking ANC early (Meshram et al., 2014). However, Nguyen, Deoisres and Sangin (2013) revealed the adolescents would be more prone to attend ANC early if they had no previous pregnancies or children, compared to a mother who had two or more children, as being a prim gravidae can also predispose the adolescent to be more cautious and wanting the best possible outcome for her pregnancy. Family size and marital status coincide as

contributors in adolescents accessing early ANC, and therefore are linked as predisposing components (Heaman et al., 2014; Manda-Taylor et al., 2017).

2.3.4. Past illness of the Adolescents

It is possible that adolescents could have a pre-existing illness prior to the pregnancy, and due to this burden, they could seek ANC early (Chikalipo et al., 2018). Chikalipo et al. (2018) discovered in Malawi that adolescents sought ANC, as they not only wanted to receive treatment for themselves and their unborn baby, but more especially for HIV. Similarly in Ethiopia, adolescents sought medical treatment through ANC as they were "unwell" before pregnancy, and being pregnant was seen as a means of seeking help (Berhe et al., 2014). Due to the all-inclusive BANC PLUS programme, screening, testing and management for HIV/AIDS, Tuberculosis and Syphilis are part of the programme (KZNDoH, 2018). The fear of disclosing their status to their partner is a determinant preventing the adolescent from attending ANC as partner testing is imperative (Govender et al., 2018). Adolescents may fear losing their partner and their livelihood due to the disclosure of their illness, therefore they choose not to divulge any information and as a result, delay the ANC booking to the time of the delivery (Govender et al., 2018; Worku & Woldesenbet, 2016).

However some adolsecents might not perceive any health issues at the start of their pregancy and thus feel there is no need to attend ANC as pregnancy is not an illness, and therefore delay the ANC booking (Tesfaye et al., 2018). Past illnesses in adolescents can be seen as both a motivator and deterrent for early ANC utilisation, with influences from the individual's social and economic standing (Govender et al., 2018).

2.3.5. Religion and cultural beliefs

In many countries cultural beliefs preside over conventional health beliefs, as culture is well entrenched in societies, and going against these beliefs is unwelcome. For example, in India young brides are a well-known cultural practice that has been carried out for many generations to protect wealth, continue family growth and to preserve young girls (Mahajan & Sharma, 2014). In the study conducted by Mahajan and Sharma (2014) in India, they found that 47% of rural and

37% of urban adolescents had been married before the age of 18 years, equating to the same percentage first time mothers before that age. This young age of marriage increases the adolescent's family demands and chores, which restricts time for ANC visits (Mahajan & Sharma, 2014). Likewise, Achraya (2016) discovered in Nepal that religion, ethic group and caste affects utilisation of ANC, as this country also has strong beliefs on intergenerational cultures and valuing traditions.

In other LMICs, adolescents are influenced by older generations when it comes to cultural beliefs, such as if they (the older generation) saw ANC as an appropriate activity then adolescents would be allowed to spend time on ANC (Hackett et al., 2019). Other beliefs, such as keeping the pregnancy a secret to prevent miscarriages from occurring through negative omens, and the fear of being bewitched, are very common (Kim et al., 2019). Due to the stronghold cultural beliefs have over adolescents and being well entrenched over generations, moving away from these practices and being independent are seen as being disrespectful, therefore cultural beliefs and religion continues to hinder utilisation of ANC (Acharya, 2016; Kim et al., 2019). The recent studies of Acharya (2016), Hackett et al. (2019) and Kim et al. (2019) revealed that even in today's society, adolescents are protected from certain issues due to their deep cultural beliefs that intertwine with health beliefs and delay in utilising ANC early, which could result in a negative outcomes for the pregnancy and delivery (Acharya, 2016; Hackett et al., 2019; Kim et al., 2019).

The following section reviews the enabling characteristics, and their contribution towards the adolescents' utilisation of ANC.

2.4. ENABLING CHARACTERISTICS AMONGST ADOLESCENTS FOR UTILISATION OF ANTENATAL CARE

Enabling characteristics (family, community) suggest that even though some people are predisposed to utilise healthcare, there must exist a means to do so (Andersen & Newman, 1973). Enabling charcteristics are the means that exist, which include family characteristics, such as income, type and access to a regular source of healthcare (Andersen & Newman, 1973). Community characteristics, such as ratio of health personnel and facilities to community

members, cost of healthcare, and the urban verses rural aspect, enable the utilisation of healthcare (Andersen & Newman, 1973). The enabling characterisitcs described in the next section will substantiate how they contribute towards or prevent the adolescent from utilising ANC.

2.4.1. Income for adolescent mother

Financial stability for a pregnant adolescent can be a worrisome state, as caring for a new-born baby can be costly and adolescents who lack financial stability can be especially affected (Heaman et al., 2014). Adolescents in Canada have attributed financial strain as being one of the barriers to delaying ANC booking, including follow up appointments, as economic resources are low (Heaman et al., 2014). Even though in most countries ANC is free, other expenses are endured, such as transport to the clinic, child minders for other children, and even losing a day's salary to attend ANC (Heaman et al., 2014). Many adolescents rely on the household income to support them. Nayak et al. (2018) found in India that young mothers who resided in a household that received a regular income visited the ANC clinic more frequently (Nayak, Varambally & Nayak, 2018). Furthermore, the higher the income bracket the more the adolescents visited the clinics, which was possibly due to higher levels of financial security and support (Nayak et al., 2018). This evidence is also supported in Bangladesh, where Ali et al. (2018) discovered that the poorest of young women were less likely to utilise ANC than were the middle to upper income earners (Ali et al., 2018).

The low income in a household could result in the adolescent ignoring the commencement of ANC, and investing in what they consider to be more important basic needs (Tesfaye et al., 2018). This trend seems to filter into Africa, as in Ethiopia the financial income and husband's financial status played a role in the mother attending ANC (Tesfaye et al., 2018). Similarly, in South Africa economic status dictated the frequency and timing of ANC, as adolescents relied on family support for income, and due to lack of job opportunities, many family members were unemployed and unable to provide the necessary financial support for ANC attendance (Govender et al., 2018; Kaswa et al., 2018).

2.4.2. Geographical location of the adolescent's residence

The geographical location of the adolescent's place of residence contributed to the utilisation of ANC services (Govender et al., 2018; Tesfaye et al., 2018; Worku & Woldesenbet, 2016). Difficulties in accessing the ANC clinic, exacerbated by increased distances to ANC clinics and a lack of transport monies, can impede and delay the adolescent's utilisation of the necessary ANC care for a successful pregnancy, with the possibility of adverse maternal and perinatal outcomes (Govender et al., 2018; Worku & Woldesenbet, 2016). Rural areas with infrastructure challenges dominate the geography of LMICs where many adolescents reside, posing an added contributory factor to the low utilisation of ANC services (Tesfaye et al., 2018). In Ethiopia, the Health Demographic Surveillance Systems Areas (HDSSA), a monitoring system for the health and demographics of the area, showed that in areas where healthcare facilities are more concentrated, ANC visit attendance is greater than not so concentrated areas (Tesfaye et al., 2018).

In some remote areas, adolescent`s ANC utilisation was not affected by geographical location, as in Senegal adolescents had made timely ANC bookings as services were readily available and could be accessed by foot (Guevarra et al., 2017; Kim et al., 2019).

2.4.3. Healthcare worker and facility issues

Healthcare workers' attitudes, as experienced by adolescents in upper to middle income countries, appeared to be less of a deterrent to ANC utilisation (Heaman et al., 2014), compared to LMICs inclusive of South Africa where adolescents experienced negative provider/patient attitudes and they felt "stigmatised" when visiting clinics (Govender et al., 2018; Hackett et al., 2019; Worku & Woldesenbet, 2016). Through focus groups, Hackett et al. (2019) determined from the adolescents that they were defamed when going to the clinic as they were school-going age, which resulted in them concluding that ANC was not a service for them and consequently defaulted (Hackett et al., 2019). In South Africa, adolescents reported that when they attempted to book at their local clinics, similarly they were turned away as it was not the "recommended day for ANC services," and they had to return another day (Ebonwu et al., 2018). This type of practice is not sanctioned as per South African Maternity Guidelines, as ANC must be offered at any time to mothers irrespective of the day or time they present themselves (SANDoH, 2015b).

Further concerns that exist within the healthcare worker-related issue is the long waiting times and queues that the adolescents experience when visiting the clinics (Hackett et al., 2019; Tesfaye et al., 2018). This time delay can be attributed to the lack of trained staff and treatment rooms resulting in the adolescents not wanting to book for ANC (Kim et al., 2019).

Both the healthcare worker and facility issues contribute to the late utilisation of ANC amongst adolescents, together with the geographical location and income, which can serve as evidence that the enabling characteristics constitute those that predispose adolescents to ANC, but there must exist a means to utilise ANC (Andersen & Newman, 2005).

2.5. SUMMARY CHAPTER TWO

This chapter presented the literature reviewed that supported the predisposing and enabling characteristics that could contribute to the adolescent's utilisation of ANC. Each characteristic was broken down to identify how it predisposes and enables the adolescent to utilise ANC. The next chapter discusses the research methodology.

CHAPTER THREE: METHODOLOGY

3.1. INTRODUCTION

This chapter outlines the methodology, inclusive of the research design, used to achieve the research objectives and answer the research questions. Methods in a research study are the steps, procedures and strategies used in obtaining, organising and analysing data using a quantitative approach (Polit & Beck, 2008). The research setting gives an overview of the location involved in the study and clearly states the economic and social aspects of the people residing in the area. Sampling addresses how the area, clinics and respondents were selected, while the data collection process explains how the data was extracted, giving specific consideration to the ethics involved with adolescents, followed by data analysis.

3.2. RESEARCH PARADIGM

A positivist paradigm underpins the study, as a positivist uses a scientific method that refers to a set of orderly, disciplined procedures to acquire information (Polit & Beck, 2008). The positivist paradigm allows for the identification of the factors amongst adolescents that contribute to the late utilisation of ante-natal care (ANC), which is dictated by the ontology that these factors are not arbitrary and can be measured (Gray, Grove & Sutherland, 2016). Positivists value objectivity and attempt to hold their personal beliefs and biases in check to avoid contaminating the findings under study (Burns & Grove, 1997). The ontological assumption of the researcher is that there is a reality that exists out in the world which is driven by natural laws and mechanisms (Guba, 1990), thus the researcher believes that the study was conducted without any interference or personal belief/bias from the researcher. The epistemology refers to how the researcher related to the participants being studied, and in this study, with the approach being positivist, the researcher was independent from the participants and findings were not influenced by the researcher (Polit & Beck, 2009). The epistemology is evident in this study using a self-administered structured questionnaire, to generate an empirical understanding of the factors

contributing to late booking at ANC services (Polit & Beck, 2008). The study analysed the pregnant adolescent in her own setting i.e. in her utilisation of ANC and factors that contributed to this without the researcher`s ideas or thoughts affecting their setting (Guba, 1990). The study followed a deductive process through the formulation of a hypothesis prior to the study, which was tested through the analysis of the data from the questionnaire given to the adolescents (Burns & Grove, 1997). The positivist paradigm helps to ground the researcher`s study and to substantiate that the adolescent can think and act independently without interference from the researcher, which resulted in the data obtained from the study being unbiased (Gray et al., 2016).

3.3. RESEARCH APPROACH AND DESIGN

3.3.1. Study Approach

A quantitative approach was adopted.

3.3.2. Study Design

A non-experimental quantitative survey made use of a self-administered questionnaire for adolescents who booked late (20 weeks and greater gestation) at the Primary Healthcare (PHC) clinics offering ANC services. The variables of interest were socio-demographics, socio-economic variables, adolescents' obstetrical history, current health status and their knowledge towards ANC. A descriptive design was utilised as it was envisaged it would allow for obtaining information about the characteristics within the ANC clinics of the PHC clinics as perceived by the adolescent (Gray et al., 2016).

3.4. STUDY SETTING

A study setting is the physical location in which data has been collected (Polit & Beck, 2008), which in this study was the eThekwini District, an area divided into four sub districts, namely South Central, Lower South, West and Sub District North, (KZNDoH, 2018). In the eThekwini district, 61% of the population are below 35 years of age and marginally more (50.4%) are

females. The South Africa 2016 statistics showed that constitution of the populations in eThekwini were Black African (71.9%), Indian/Asian (16.3%), White (6.6%) and Coloured (2.2 %) persons (KZNDoH, 2018), with 30.2% of this population unemployed and specifically, 39% unemployment in the youth (Statistics S.A, 2016a). The education level in eThekwini showed that of the population, 2.5% had no schooling, 35% had some primary schooling, 5.1% had completed primary schooling, 31.3 % had some secondary level education, 21.4% had completed secondary schooling, and 3.4% had higher education (Statistics S.A, 2016a). The lower levels of education could be a contributory factor to the presence of approximately 60% of eThekwini`s households as low income earners of less than 38 400 South African Rands per annum (eThekwini Municipality, 2017). However despite the above, eThekwini has shown a decrease in the poverty headcount from 4.5% to 3.8% in the past five years (eThekwini Municipality, 2017). A contributor to the poverty headcount is the child male and female headed households in eThekwini, which accounted for 1 344 and 1 657 households respectively (Statistics S.A, 2016a).

Despite the lower income levels, the adolescents of the eThekwini Municipality, inclusive of Sub District North, can access free healthcare as managed by the eThekwini Municipality and the SANDoH (KZNDoH, 2019) In Sub District North, the first point of entry to the tiered health system is Level 1 and for this research study this included eight PHC clinics and five Community Health Centres (CHC) where service delivery is orientated towards disease prevention focused on individuals and families (Dookie & Singh, 2012). Regardless of the umbrella body (DoH or EThekwini Municipality) overseeing the PHCs, they all provide healthcare and ANC services such as immunisation, family planning, ante-natal care, and treatment of common diseases, treatment and management of Tuberculosis, HIV/AIDS counselling (KZNDoH, 2019). If the PHC clinic cannot assist the patient, he or she will be referred to the CHCs where the center is operated 24 hours, offering maternity service, emergency care and casualty and a short stay ward (KZNDoH, 2019). If the patient requires more specialised treatment then he/she is referred to the local District Hospital (KZNDoH, 2019). The study was conducted within the 13 PHC facilities (8 PHC and 5 CHC) clinics of the Sub District North, specifically the ANC clinics; for the purpose of the study, they are collectively referred to as PHC clinics. The clinics are as followed, Inanda Community Health Centre, Kwamashu Community Health Centre, Newtown Community Health Centre, Phoenix Community Health Centre, Tongaat Community Health Centre,

Starwood PHC, Amaoti PHC, Qadi PHC, Lindelani PHC, Sivanada PHC, Maphephetheni PHC, Ntuzuma PHC and Oakford PHC clinic.

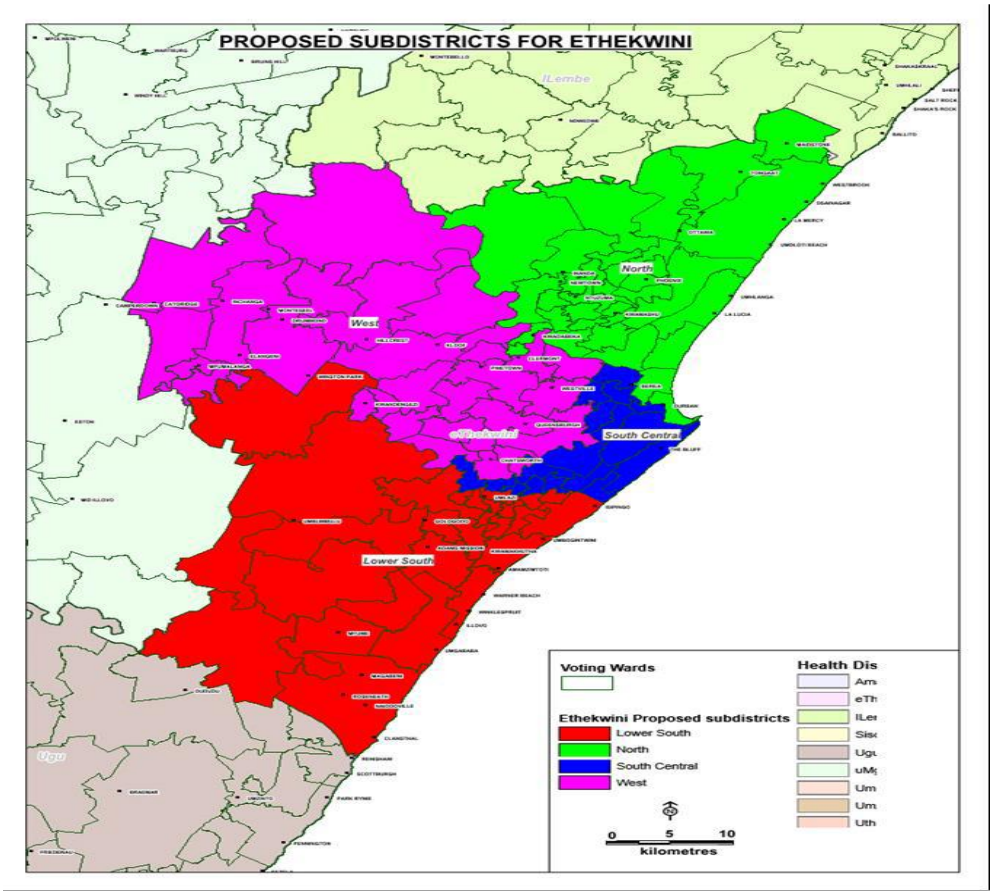


Figure 2: Sub Districts of eThekwini (KZNDoH, 2018)

3.5. SAMPLING AND POPULATION

3.5.1. Sampling

This study was non-probability purposive sampling; this is when the researcher selects the setting and respondents by non-random methods where there is no way to estimate the probability of including each respondents (Polit & Beck, 2009). The researcher adopted a purposive sampling method to select the respondents and the research setting. Purposive sampling is where the researcher`s knowledge about the population can be used to purposefully select sample members (Polit & Beck, 2009).

District: The eThekwini District was purposively selected from the 10 KwaZulu-Natal districts. In the period 2017/2018, eThekwini presented with the highest maternal deaths in facility (n= 50) compared to all the districts in KZN, and remained the most highly populated district in KZN with the greatest proportion of adolescents (KZNDoH, 2018).

Sub District: The Sub District North was purposively selected from the four eThekwini sub districts because this district had the lowest ANC booking before 20 weeks of gestation and the highest number of under 18 years of age deliveries compared to the other three sub-districts (KZNDoH, 2018).

Sample size: The eThekwini Health district office was unable to provide statistics for the utilisation of ANC, specifically for adolescents' (15-19 years) late entry (after 20 weeks' gestation) for the Sub District -North. Therefore, the researcher gained permission from the clinic mangers to view their monthly statistics and tallied the numbers, which showed that the CHC clinics and the PHC clinics in the Sub District North had a total of 109 late adolescent bookings in a month (Total bookings of adolescent 156/month). The Raosoft calculator (2004), with a 5% margin of error and confidence level of 95%, calculated a minimum sample size of 86 respondents for this study (Raosoft.com, 2004) oversampled to the total population of 109 adolescents (Gray et al., 2016).

The focus of this study was the adolescents attending the PHC clinics in Sub District North, who had booked late (> 20 weeks' gestation) for ANC at these clinics. A study respondent is an individual who participates and provides information in a study (Polit & Beck, 2008). The inclusion and exclusion criteria are listed below.

3.5.2. Study population

The age of the adolescent, 15-19 years, was chosen on the basis that the age group younger than 15 years was seen by ethics as a younger age category and parent/guardian consent would be needed to participate in the study (Gray et al., 2016). Obtaining the concerns of adolescents less than 15 years was an ethical concern, as some of the adolescents would have not disclosed their

pregnancy to their parents and violation of patient confidentiality would have been broken (SANDoH, 2015a).

Inclusion criteria

- Adolescent females between the ages of 15-19 years who had booked late for ANC (> 20 weeks' gestation).
- Adolescent females between 18-19 years who had booked late for ANC (> 20 weeks' gestation) and willing to participate and had signed written informed consent
- Adolescent females between 15-17 years who had booked late for ANC (> 20 weeks' gestation) and were both willing to participate and had signed minor independent consent.

Exclusion Criteria

The following persons were excluded from participating:

- Pregnant women attending the ANC of the PHCs over the age of 19 years.
- Adolescents who had booked early for ANC (<20 weeks' gestation).
- Adolescents between 15-17 years' old who had booked late for ANC (>20 weeks' gestation), but did not sign minor independent consent.
- Adolescents 18-19 years who had booked late for ANC (>20 weeks' gestation) who did not sign informed consent

3.6. INSTRUMENT FOR DATA COLLECTION

In this study, a self-administered questionnaire was used to obtain information from the respondents. A questionnaire is a written, possibly self-reporting form aimed at producing evidence that can be acquired from a respondents' written response (Gray et al., 2016). Questionnaires are designed in a consistent manner and there is less room for biases in the data collected (Gray et al., 2016).

3.6.1. Description of the questionnaire

A self-administered questionnaire was used to obtain the information from the respondents (Appendix 1: Questionnaire). The questionnaire was adapted from the questionnaire designed by

Hussen (2016), which he developed for his own study titled *Timely Initiation of First Antenatal Care Visit of Pregnant Women Attending* (n= 255).

The author (Hussen) granted, through e-mail correspondence, written permission for the use and adaptation of the questionnaire (Appendix 5: Written permission for questionnaire). Hussen, Melese and Dembelu (2016) reviewed the relevant literature when developing the questionnaire and ensured that it met the objectives of their study. The researcher made language adjustments to suit the context of the potential respondents without adjusting the meaning of the questions, allowing use in the South African context. An example of such an adjustment is asking the respondent what religion they practise, with options of predominant religions practiced in South Africa.

The two predominant languages spoken in the Sub District North are English (26.5%) and isiZulu (62.2%) (Statistics S.A, 2016b), which necessitated the translation and back translation of the questionnaire into isiZulu (Appendix 2:isiZulu version of questionnaire); an isiZulu language expert translated the questionnaire. An expert, a healthcare worker familiar with ANC, whose first language was isiZulu and second language English, and could read and write fluently in both languages, back translated the questionnaire. The expert (healthcare worker) found the questionnaire a good interpretation of the original tool, however, there were minor spelling errors, corrected by the translator.

Structure of the questionnaire: The questionnaire was divided into five sections, namely demographics, socio-economic background, obstetrical history, knowledge and experiences of ANC services and current pregnancy (Hussen, Melese & Dembelu, 2016).

The *first section* required the demographic and socio-economic information, which was asked in the form of short closed-ended questions with nominal (religion, marital status, and employment status) and ordinal measurements (educational level).

Section two required obstetrical history, which had short closed-ended questions and nominal measurements (family planning method).

The *third sectio*n required knowledge of ANC, which had Likert-scale type questions ranging from “highly important, medium important, less important and do not know,” using ordinal measurements, with the highest number representing nine months of gestation and asking how many times a pregnant woman should attend ANC, from a choice of once to four times

The *fourth section* required responses about the experiences of the adolescent of ANC services with short closed-ended questions and Likert-scale type questions ranging from "Extremely satisfied, to extremely dissatisfied."

The *fifth and last section* required short closed-ended responses, with ordinal measurements of which month did the adolescent book for ANC and the number of ANC visits completed (highest was 9/12 gestation; highest was greater than eight visits to the ANC clinic) and nominal measurement of who had informed the adolescent to attend clinic (Hussen et al., 2016). The time taken to complete the questions was between 15 and 20 minutes.

3.6.2. Content Validity

Content validity examines the amount to which the measurement method, i.e. the questionnaire, contains all key components applicable to the construct being measured. Table 1 shows the content validity of the questionnaire.

Table 1: Content validity

Research Objective	Anderson and Newman's Model (1973)	Hussen et al, (2016) questionnaire	Questionnaire
Research objective one To identify the factors that contribute to adolescents' late utilisation of ANC at PHC clinics in Sub District North, eThekwini.	Demographics	1 and 4	1.1 , 1.4
	Social Structure	2, 3 and 5 to 8	1.2; 1.4 to 1.5 a
	Family (Income)	9 and 10	1.6 to 1.7
	Demographics	11 to 15	2.1 to 2.2.1
	Beliefs	Nil	2.3 to 2.3.1
	Beliefs	17 to 18 and 20	3.1, 3.2, 3.4
	Perception	19	3.3
	Demographics	21 to 23	Nil
	Beliefs	30.1 to 30.2	4.2.a
	Family(Income)	25 to 27 and 30.5	Nil
	Community	24 and 30.3 to 30.4	4.1.a to 4.1.b
	Beliefs	33, 37 to 40 and 42, 44 to 48	5.2, 5.6 to 6.1, 6.4 to 7.1.c
	Perception	31 to 32, 35 to 36 and 41	5.1, 5.4 to 5.6.a
	Evaluation	34 and 43	5.3
	Family	Nil	6.2, 6.3

Research Objective	Anderson and Newman's Model (1973)	Hussen et al, (2016) questionnaire	Questionnaire
Research objective two To develop recommendations to enhance early ANC bookings by adolescents into PHC clinics in Sub District North, eThekwini	Beliefs	30.3 and 30.4	4.2.b ; 4.2.c
	Beliefs	42	6.1; 6.4 to 6.8
	Family	42.2 and 42.3	6.2, 6.3

3.6.3. Face validity of the questionnaire

Face validity, just like content validity, refers to whether the instrument shows evidence to be measuring the target construct (Polit & Beck, 2008). Face validity was obtained through three experts, namely a medical officer working in the ANC clinic, nursing services manager in charge of an ANC clinic, and a midwife working in an ANC clinic. The experts provided expertise in understanding the language requirements of the population accessing the clinic and examined for grammar, language and instructions on the questionnaire. Grammar changes (in particular tense) were made to a few questions (Questions 3.3, 5.3, 5.5 and 5.8). The experts also provided feedback on the research process, which consisted of suggestions on how to identify the late bookers by using the ANC card information and a pregnancy calculator to calculate the gestation age.

3.6.4. Reliability

The reliability of an instrument represents the consistency of the measures obtained of a construct, and it is concerned with the precision reproducibility and comparability of the measurement method, i.e the questionnaire (Gray et al., 2016). Hussen et al. (2016) tested the reliability of the questionnaire by performing a pre-test with 5% (n=12) of the respondents in his sample. These respondents were from another institution and were excluded from the study (Hussen et al., 2016). The researcher of this study experienced failed e-mail attempts to contact Hussen et al. (2016) for reliability measures.

3.6.5. Inter-rater reliability

Inter-rater reliability is the comparison of the equivalence of the judging of two experts (Gray et al., 2016). The researcher visited every site once to observe the research assistants in providing and explaining the questionnaire to ensure the research assistants had provided the correct information and consistency was maintained between the eight PHCs and five CHCs, in total 13 sites.

3.7. DATA COLLECTION

3.7.1. Preparation for data collection

Step 1: (Contact with PHC managers). Once the researcher had received ethical clearance from the study university's Biomedical Research and Ethics Committee (BREC)(00000363/2019) (Appendix 12), and gatekeeper permission from the KwaZulu-Natal Department of Health (Appendix 11), the managers of the PHC clinics were contacted to initiate a working relationship, explain the study and discuss the logistics of data collection (identification of participants, suitable time, process and duration), involving the eight PHCs and five CHCs clinics in the Sub District North.

Step 2: (Training research assistants). Upon receipt of BREC clearance and gatekeeper permission, three professional nurses were trained by the researcher as research assistants. The training was conducted on the 6 February 2020, a day suitable to all three persons at a suitable venue, namely the residence of the primary researcher. Training included the instructions, objectives, information and consent of the questionnaire. The research assistants were taught how to work with the professional nurses working in the ANC clinic to identify late bookers, as the researcher assistants were not employees of the clinic therefore did not have access to patient's records. Other items of training included recruitment of potential respondents without coercion, administering the questionnaire, maintenance of a private environment for completing the questionnaire, and obtaining consent. The research assistants received all the vital information to equip them to answer any potential questions from the respondents and to safely handover all questionnaires in the sealed box at the end of each day of data collection. All research assistants signed a confidentiality agreement prior to commencement of data collection (Appendix: 9).

3.7.2. Data collection

Step 3: (Data collection plan)*:* The data was collected with the aid of three trained research assistants and the principal researcher. Each research assistant was allocated three PHC clinics from the Sub District North and required to collect data in nine days as pre-arranged with the select PHC managers, and the principal researcher spent 12 days collecting data at four ANC clinics (See Table 2: Data collection roster).

Table 2: Data collection allocation roster from 17 February 2020 to 06 March 2020

Researcher	Assigned number of ANC clinics located within PHC & CHC clinics	Duration for data collection at each clinic (17/02/2020- 06/03/2020)
Research assistant 1	3	3 days
Research assistant 2	3	3 days
Research assistant 3	3	3 days
Primary researcher	4	3 days

Step 4: (Selection of respondents). Adolescents' (15-19 years) late booking in pregnancy (>20 weeks' gestation) was identified with the assistance of the professional nurse working in the PHC, because the researcher and research assistants were not employees of the clinics and patients' files were confidential. The professional nurse viewed the patient`s ANC book to establish the booking date on the initial page either by symphysis fundal height (> 20 cm), palpation (>20 cm) or through ultrasound. If the initial booking measurement was not documented and the patient presented with an ultrasound scan, then a gestational calculator was used to calculate the gestational measurement.

Step 5: (Informing the potential respondent): Once the professional nurse had established that the adolescent (15-19 years) booked late in order to maintain privacy, the eligible adolescent was spoken to in a private room, where they were invited to participate in the study. The researcher/assistant provided the potential participant with verbal information and written information in English or isiZulu on the objectives, consent procedure and questionnaire (Annexure 3 & 4). The researcher/research assistant informed the potential respondent that at any

time she wished to terminate the study she could do so without any harm to her or interference to the ANC services she would be receiving. There was no coercion and the potential respondent was allowed time to consider participation.

Step 6: (*Obtaining consent/minor independent consent*): Since the BREC waivered the need for parental permission, the eligible consenting minors (15-17 years) were requested to sign minor independent consent (Appendix 4) in either English or isiZulu, and eligible and consenting adolescents (18-19 years old) signed consent (Appendix 3) in either English or isiZulu, as dictated by the potential respondents' home language. Consents were kept separate from the questionnaires in order to maintain confidentiality.

Step7: (Respondents' completion questionnaire): The respondents were provided with privacy to complete the questionnaire and the researcher/research assistant were available for any queries.

***Step 8: (Deposit completed questionnaire)*:** Once the respondents had completed the questionnaires they were shown where to insert the questionnaire into the sealed box and were thanked for their participation. They were offered a cool drink due to their extended time in the ANC clinic.

3.7.3. Field Information

During the data collection phase, the researcher had made field notes to document the process in retrospect. Field notes are analytic and interpretive descriptions of an occurrence (Polit & Beck, 2009). Highlighted in the notes was the busyness of the clinic, i.e. the influx of patients. Fortunately, the ANC clinics are separate from other departments, but there was always an overspill of patients and in some clinics, noise levels caused some disturbances. Unavoidable circumstances, such as shortage of staff in the ANC clinics, resulted in the researcher and assistant having to wait for the professional nurse to render vital nursing care before assisting in screening for possible respondents

3.8. DATA MANAGEMENT AND STORAGE

The respondents placed the completed questionnaires into a sealed box in the PHC clinics. Each day of data collection, the questionnaires were placed in the sealed box and at the end of every data collection day, the box was collected by the principal researcher and stored under lock and key in the researcher's office and returned to the study sites by the researcher the following day. The questionnaires were retrieved from the boxes on the 07th and 08th February 2020 upon completion of data collection. The collected raw data and consents were stored under lock and key in the research supervisor's office until the data was captured by the researcher on a password-protected computer. Thereafter the hardcopies were scanned to a USB and then shredded. The USB will be retained under lock and key by the supervisor for a period of five years, and then crushed; all captured data on completion of the study was saved to the same USB. All study related information stored on the computer and the cloud was deleted and the recycle bin emptied on completion of the study.

3.9. DATA ANALYSIS

Data were entered into IBM Statistical Package for the Social Sciences (SPSS) version 26, and cleaned. SPSS v.26 was used to analyse the data. Descriptive statistics such as frequencies and percentages were used to summarise categorical variables. Central tendency and dispersion of data were measured using means and standard deviations for normally distributed variables and medians and interquartile ranges for skewed variables. To assist with the analysis of data, some variables (age, religion, marital status, income and traveling cost, satisfaction responses, and informers of ANC attendance) were recoded based on the respondents' responses into different variables.

3.10. ETHICAL CONSIDERATIONS

For the study, the researcher took into consideration the following ethical criteria as applicable to the female adolescents aged 15 to 19 years.

***Permission to conduct the study and use of questionnaire*.** Upon receipt of ethical clearance from BREC (00000363/2019), the researcher made a written request to the gatekeepers, the KZNDoH and PHC clinics, for permission to conduct the study (Appendix 7: Letter of Permission for KZNDoH). In order to inform the ethical decision makers, the written request included all the important information pertaining to the study, including purpose of study, the target population, sampling, study design and methodology, in particular measures to mitigate ethical risks (Gray et al., 2016). The researcher was available through telephonic or email to respond to any questions or concerns relating to the study from the gatekeeper, clinic manager and researcher assistants. Nil concerns were noted.

The researcher obtained written permission from the author of the tool (Dr. Hussen) and will make acknowledgement of the permission in any publication that should arise from the study (Appendix 5: Written permission for use of questionnaire).

Informed consent and voluntary participation: Informed consent (Appendix 3 & 4: Minors independent consent and Informed consent) involved the researcher disclosing essential information about the study and the process of answering the questionnaire. (Gray et al., 2016).

According to the SANDoH policy document titled "Ethics in Health Research" (2015), minors can be granted "minors independent consent" in particular, circumstances where it is "desirable and ethically justifiable for minors to choose independently, i.e. without parental assistance, whether to participate in research," provided the research study be of minimal risk to the minor. SANDoH (2015, pg:33) cite the particular circumstances as "reasons of sensitivity." Hence, in these circumstances consideration was given to the possibility that the adolescent had not disclosed her pregnancy to her parents, and requiring parental consent might breech their confidentiality. Due to the nature of the study and its objectives in requiring sensitive issues, the minors' independent consent created a platform to obtain this information from the adolescent without breaking their right to confidentiality and maintaining the right to minimal harm. In light of the above ethical justification, the researcher appealed to BREC for a waiver of the parental (or substitute) permission requirement for minors and the approval of minor independent consent (Appendix 9: Request for wavier); BREC provided a waiver.

The researcher only commenced data collection following ethical clearance from BREC and permission from the gatekeeper (KZNDoH). The respondents were invited to participate in the study with the information that participation was voluntary and there would be no harm in the form of compromised care should they decline to participate. The informed consent or minor independent consent was obtained according to the ages of the respondents, as discussed earlier.

Risk of harm: Researchers have the obligation to avoid and prevent harm towards the respondents (Polit & Beck, 2008). The risk of harm was considered low for the respondents because the researcher had maintained privacy and confidently of the respondent and reduced the risk of them having to disclose their pregnancy status to their guardian/parent.

As adolescents were the targeted age group for the study their confidentially and anonymity was of vital importance. In order to prevent any psychological or emotional harm being inflicted on the respondents through requests of assent and possible disclosure to parents/guardians of their pregnancy or sexual activity, the researcher requested from the BREC a waiver of parental permission for minor's participation in the study (SANDoH, 2015a)

The researcher, supervisor and co-supervisor all completed the ethics online course, ensuring through ethical certification a reduction in exposure of the respondents to unsound ethical practices (Appendix 6: Ethical certificates).

***Statement of confidentially and anonymity*:** Anonymity, the most secure means of protecting confidentiality, occurs when the researcher cannot link respondents to their data (Polit & Beck, 2008). In this study, the respondents remained anonymous with the retention of confidentiality, as no names were placed on the questionnaires that would identify a specific respondent or any of the 13 PHC clinics.

Once the respondents completed the questionnaire and dropped it into the sealed box, it further guaranteed confidentiality as it could not be retrieved.

The researcher has a responsibility to protect the anonymity of the respondents and to maintain the confidentiality of the data collected during the study (Gray et al., 2016). In this study, all potential respondents were given an information sheet and informed consent to sign, which stated that every respondent's identity remained anonymous and that all findings when published would be shared with them. The informed consents were stored separately from the raw data in a

locked cupboard in the research supervisor's office so that no connection could be made to the raw data and consents (Gray et al., 2016).

Privacy is an individual's right to determine the time, extent and general circumstances under which personal information is shared with or withheld from others (Gray et al., 2016). To avoid invasion of privacy, the respondents signed the minor's independent consent (See Appendix 4: Minors' independent consent). All respondents were invited to speak to the researcher/assistant in a private room and given time to think about participation, and only thereafter provided with the questionnaire to complete in a private room in the clinic.

3.11. SUMMARY OF CHAPTER THREE

Firstly, the researcher explained the positivist paradigm that underpinned the study and then went on to describe the quantitative approach adopted and the survey design of the self-report questionnaire used. The study setting was a select area in Northern eThekwini, and the study participants were adolescents aged 15 to 19 years old. The researcher described the purposive sampling of the sub-district and the non-probability purposive sampling of the participants, together with the data collection instrument of a self-reporting questionnaire and the steps taken to maintain validity and reliability. Lastly, the ethical considerations were explained pertaining to the vulnerable population of adolescents.

CHAPTER FOUR: RESULTS

4.1. INTRODUCTION

This Chapter presents the findings of the quantitative survey. To reiterate the objectives of the study were: to identify the factors that contribute to adolescents' (15 to 19 years) late utilisation of antenatal clinics (ANC) at Primary Health Care (PHC) clinics in Sub District North, eThekwini and to develop recommendations to enhance early ANC bookings by adolescents (15 to 19 years) into PHC clinics in Sub District North, eThekwini. The data collected were checked for completeness and each question was coded and recorded in a codebook for reference. IBM Statistical Package for the Social Sciences (SPSS) version 26 analysed the data. Descriptive statistics (frequencies (*m*) and percentages (%)) were used to summarize the data. Numerical variables were tested for normality which dictated the measures of central tendency (means (*m*) or medians (*md*)) and distribution (standard deviations (±) interquartile ranges (*IQR*)). Variables (age, religion, marital status, income and traveling cost, satisfaction responses, and informers of ANC attendance) were recoded for ethical reasons and comparison between groups.

4.2. RESPONSE RATE

The response rate was 88%, with 96 respondents completing the questionnaire (anticipated sample size of 109). The response rate was not a hundred percentage, as during the data collection period not every clinic had potential respondents and some questionnaires were incomplete. Incomplete questionnaires are explained through questionnaires being incomplete and therefore could not be included in the study. Data were collected from respondents (15-19 years) in 13 clinics (8 PHCs and 5 CHCs).

4.3. PRESENTATION OF FINDINGS

4.3.1. Demographic characteristics of respondents

The nature of the study, dictated that all respondents were female and in the age range of 15 to 19 years. The majority of the adolescents were 18 years of age (*n*=27, 28.1%) (Table 3), with slightly more majors (18-19 yrs.) (*n*=50, 52.1%) compared to minors (15-17 yrs.) (*n*=46, 47.9%). Religion showed 83.3% (*n*= 80) of respondents were Christians and 87.5% (*n*=84) were single, either due to never marrying (*n*=92, 95.8%), or because of separation (*n*= 4, 4.2%), or widowers (*n*=6, 6.3%) (Table 3). The majority of the respondents (*n*=73, 76.0%) were in secondary school, while a minority (*n*=8, 8.3%) had a primary level of education. Employment status showed the majority of adolescents (*n*= 82, 85.4%) not working (Table 3). The monthly income had a wide range, from no income to 6500.00 South African Rands (R) per month, with the mean earnings as R1311.46 (±R1398.37). The income of the majority of the adolescents (*n*=52, 54.2%) was R1000.00 or less per month, with earnings of R425.00 for 15 respondents (15.6%), which is possibly received through the child support grant (S.A Governement News Agency, 2020) and 16 respondents (16.7%) had no income (R0.00). The income of 12 respondents (12.5%) was R1700.00, which is the amounts of both the disability grant and the care dependency grant. Lastly the monies spent on transport to the clinic ranged from R10.00 (*n*=7, 7.3%) to R100.00 (*n*=3, 3.5%), with the average trip costing R32.03 (±R18.09), and the majority of the respondents (*n*=47, 49.0%) paid up to R20.00 (Table 3).

Table 3: Demographics of respondents (n=96)

Characteristics		Number (n)	Percentage %
Age (years)	15	9	9.4
	16	16	16.7
	17	21	21.9
	18	27	28.1
	19	23	24.0
Age groups (years)	< 18	46	47.9
	≥18	50	52.1
Religion	Christian	63	65.6
	Muslim	3	3.1
	Hindu	3	3.1
	Shembe	17	17.7
	Other	10	10.4
Religious groups	Christian	80	83.3

Characteristics		Number (n)	Percentage %
	Non-Christian	16	16.7
Marital status	Married	4	4.2
	Separated	2	2.1
	Widowed	6	6.3
	Single	84	87.5
Marital groups	Single (never married)	92	95.8
	Other (married, separated, widowed)	4	4.2
Level of education	Primary School	8	8.3
	Secondary School	73	76.0
	Tertiary	15	15.6
Education groups	School going	81	84.4
	Tertiary	15	15.6
Employment status	Unemployed	82	85.4
	Employed	14	14.6
Income (R))(*m*=R 1311.46 ± 1398.37)	0	16	16.7
	1-1000	52	54.2
	1001-2000	23	24.0
	2001-3000	8	8.3
	3001-4000	5	5.2
	4001-5000	5	5.2
	5001-6000	1	1.0
	6001-7000	2	2.1
Income groups (R))based on monthly income	≤ 1300	62	64.6
	>1300	34	35.4
Travel cost to and from clinic (R)(*m*= R32.03 ± 18.09)	0-19	47	49.0
	20-39	24	25.0
	40-59	20	20.8
	60-79	2	2.1
	80-99	0	0
	100-119	3	3.1
Travel cost to clinic in groups (R)	≤ 32	62	64.6
	>32	34	35.4

Key: R=South African Rands

4.3.2. Obstetrical History of respondents

Regarding obstetrical history, the data collected from the respondents showed that the mean number of pregnancies was one. The respondents showed that a significant percentage (*n*= 93; 96%) of respondents had not had an abortion and over two-thirds had not used any contraceptive methods (*n*= 68, 70.8%) (Table 4). Considering the 29.2% (*n*=28) of respondents who had used contraceptives, the injectable method was the most popular (*n*= 18, 18.8%) (Table 4).

Table 4: Obstetrical History of respondents (*n*= 96)

Characteristics		Number (*n*)	Percentage (%)
Previous abortion	No	93	96.9
	Yes	3	3.1
If yes, type	Spontaneous abortion	2	2.1
	Termination of pregnancy	1	1.0
Use of contraception	No	68	70.8
	Yes	28	29.2
Type of contraceptive	None	68	70.8
	Injectable	18	18.8
	Oral	6	6.3
	Condoms	3	3.1
	Intra-uterine device	1	1.0
	Implanon	0	0

4.3.3. Respondents' knowledge of antenatal care

Approximately two-thirds of the respondents rated ANC as highly important for their pregnancy (*n*= 61, 63.5%), and their unborn child (*n*=67, 69.8%), contrasting with a quarter of respondents (*n*= 24, 25.0%), who reported they did not know the importance of ANC to their pregnancy and a lesser for their baby (*n*=18, 18.8%) (Table 5). The largest portion of respondents (*n*=24, 25.0%) revealed that they perceived the right time to attend ANC for the first visit was after a month, and 71.9% (*n*= 69) reported ANC should be attended to more than four times (Table 5).

Table 5: Respondents' knowledge of antenatal care (*n*= 96)

Characteristics		Number (*n*)	Percentage (%)
Importance of ANC to the pregnancy	Do not know	24	25.0
	Less important	1	1.0
	Medium important	10	10.4
	Highly important	61	63.5
Importance of ANC towards the baby	Do not know	18	18.8
	Less important	2	2.1
	Medium important	9	9.4
	Highly important	67	69.8
Perceived correct time to commence ANC (months)	1	24	25.0
	2	20	20.8
	3	18	18.8
	4	11	11.5
	5	13	13.5
	≥6	8	8.3
Perceived correct number of times to attend ANC	1	8	8.3
	2	14	14.6
	3	5	5.2
	≥4	69	71.9

4.3.4. Respondents' experiences of ANC services

There was little difference shown between time spent for the first and subsequent visits at the ANC The time spent for the first ANC visit was reported to have ranged between one and nine hours with a median of four hours (*IQR*= 3 hours), and ranged between one and eight hours for subsequent visits (*md*= 4.00 hours; *IQR* =3 hours). Additionally, the respondents were satisfied with their experiences at the clinic as data showed that a cumulative percentage of 67.3 % of the respondents were satisfied with the staff, waiting time at the clinic and privacy provided by the clinic.

Table 6: Experiences of respondents when visiting ANC clinic (*n*= 96)

Experiences of respondents	Rank	Frequency (*n*)	Percentage (%)
Satisfaction with staff	Dissatisfied	9	9.4
	Neither satisfied nor dissatisfied	12	12.5
	Satisfied	75	78.1
Waiting times at clinic	Dissatisfied	22	22.9
	Neither satisfied nor dissatisfied	18	18.8
	Satisfied	56	58.3
Privacy at clinic	Dissatisfied	17	17.7
	Neither satisfied nor dissatisfied	16	16.7
	Satisfied	63	65.6

4.3.5. Respondents current pregnancy history

Just over two-thirds of the respondents (*n*= 63, 65.3%) were aware that they should be attending ANC; however, when asked how long after a "missed period" did they commence ANC, the responses ranged between three and six months, with the most frequent month as month five (*n*= 28, 29.2%) (Table 7). Nearly three quarters of the respondents (*n*=70, 72.9%) were informed by another that they should be attending ANC, with the mother of the respondents being the most frequent informer (*n*=50, 52.1%) (Table 7). Three months was the most selected response as when to commence attendance at ANC (*n*=17, 17.7%) (Table 7).

Table 7: Respondents current pregnancy history (n=96)

Characteristics		Number (*n*)	Percentage (%)
Awareness of ANC	No	33	34.4
	Yes	63	65.6
Booking month for ANC (Months)	Not applicable	5	5.2
	1	6	6.3

Characteristics		Number (*n*)	Percentage (%)
	2	6	6.3
	3	17	17.7
	4	12	12.5
	5	28	29.2
	6	16	16.7
	7	5	5.2
	8	1	1.0
Informed of ANC	No	26	27.1
	Yes	70	72.9
Individual informing adolescent to attend ANC	No-one	24	25.0
	Mother	50	52.1
	Other family member	18	18.8
	Non-family member	4	4.2
Suggested month to commence ANC	Not applicable	41	42.7
	1	4	4.2
	2	9	9.4
	3	17	17.7
	4	9	9.4
	5	11	11.5
	>6	4	4.2

Furthermore, predominantly the respondents discovered their pregnancy status following a missed menstrual cycle (*n*= 65, 67.7%) and 77.1% (*n*= 74) of respondents reported having no health problems, followed by 14.6 % (*n*= 14) only reporting medical conditions as health problems (Table 8). The majority of the respondents (*n*= 41, 42.7%), even though late bookers, had commenced ANC attendance as they had thought it was the right time. Nearly all respondents reported the pregnancy as unplanned (*n*= 85, 88.5%); however, 93.8 % (*n*=90) had informed their partner, with the majority accepting it (*n*=88, 91.7%) (Table 8).

Table 8: History of current pregnancy: Enabling factors

Characteristics		Number (*n*)	Percentage (%)
Identifying factor of pregnancy	Missed menstrual cycle	65	67.7
	Changes in body	18	18.8
	Symptoms of pregnancy	13	13.5
Health Issues	Nil problems	74	77.1
	Medical conditions	14	14.6
	Pregnancy symptoms	5	5.2
	Fetal conditions	3	3.1
Reasons for not attending ANC	Perceived correct time	41	42.7
	Unsure of when to start	15	15.6

Characteristics		Number (*n*)	Percentage (%)
earlier	Attending school	13	13.5
	Fear	13	13.5
	Financial reasons	5	5.2
	Unhelpful responses from healthcare workers	2	2.1
	Peer influences	2	2.1
Planned pregnancy	No	85	88.5
	Yes	11	11.5
If No, acceptance by respondent	No	8	8.3
	Yes	88	91.7
Informed partner	No	6	6.3
	Yes	90	93.8
If yes, acceptance of pregnancy by partner	No	6	6.3
	Yes	90	93.8

4.4. SUMMARY OF CHAPTER FOUR

In Chapter Four the data obtained was presented in the form of tables which recorded the frequencies, percentages and medians. The data was grouped into the respective categories as presented in the questionnaire: demographics, obstetrical history, knowledge of antenatal care, the experiences of antenatal services and history of current pregnancy. In the next chapter the findings are discussed with respect to current maternal health policies, programmes and relevant research.

CHAPTER FIVE: DISCUSSION OF RESULTS, RECOMMENDATIONS, LIMITATIONS AND CONCLUSION

5.1. INTRODUCTION

The final chapter discusses the results in relation to the study`s purpose, objectives, and the guiding conceptual framework, supported by relevant literature which cemented the findings. The purpose of the study was to identify the factors, which contributed to adolescents' (15 to 19 years) late utilisation of antenatal care (ANC) services. Anderson and Newman`s 1973 Health Services Utilisation model framed this study, which focused on the health behaviour of people, primarily in the use of healthcare, and the outcomes resulting in health and service satisfaction (Andersen et al., 2007). The study focussed on meeting the following two objectives, which were to identify the factors that contribute to adolescents' (15 to 19 years) late utilisation of ANC at PHC clinics in Sub District North, eThekwini, and to develop recommendations to enhance early ANC bookings by adolescents (15 to 19 years) into PHC clinics in Sub District North, eThekwini. The limitations of this study are recognised, and the chapter culminates in the conclusion.

5.2. DISCUSSION

The discussion is presented according to the conceptual framework of Anderson and Newman`s Health Utilisation Model (1973) in which the findings are grouped according to the predisposing and enabling characteristics as well as the illness level. The discussion includes the key findings from the study

5.2.1. Predisposing characteristics for adolescent's (15-19 years) (*n*=96) late utilisation of ANC.

The study revealed that the in demographics of age and marital status, being single (*n*=92, 95.8%) predisposed the adolescents to late booking. Mulinge, Yusuf and Aimakhu, (2017) showed that marital status has an influence on ANC utilisation, as married or partnered adolescent couples were three times more likely to access ANC earlier compared to single adolescent. This study also indicated that 47.9% (*n*= 46) of the adolescents were minors between the ages of 15 and 18 years, an age group that predisposes the adolescent to late booking of ANC, as shown by Ejeta et al, (2017) in a study which involved adolescents age predisposing them to late utilisation.

In addition to the age of the adolescents, there were further demographics, namely education, employment and family size that contributed to their late utilisation of the ANC services. The demographics are reflected in Andersen's and Newman Health Utilisation Model as predisposing characteristics (Andersen et al., 2007). Results from this study in the education category showed that 84.4% (*n*= 81) of the adolescents were attending school. One reason could be that although attending school, they had not gained the knowledge to attend ANC early. Govender, et al. (2018) and Worku and Woldesenbet (2016) showed that lack of knowledge contributed to the adolescent's late utilisation of ANC. A further contributory factor, was employment status, with 85.4% (n=82) of the respondents not generating an income, which can predispose the adolescent to late ANC booking. Johnson et al. (2003) indicated that unemployed adolescents had a lower ANC utilisation compared to the employed adolescent as they had less financial resources to support the ANC visits. Meshram et al. (2014) linked that the adolescent mother who had more children had the early and more frequent visits to ANC clinic (Meshram et al., 2014), which leads to the conclusion that in this study where the mean family size was one, therefore a greater predisposition to late utilisation. .

The beliefs (values concerning health and illness and knowledge about disease) of the adolescent can also predispose the adolescent to book late for ANC (Andersen, 1995a). The values concerning health and illness of the adolescent predisposes them to utilise ANC, however in this study 88.5% (*n*= 85) of adolescents had not planned the pregnancy, hence this value towards health predisposed them to late ANC utilisation. Manda-Taylor, Sealy and Roberts (2017) linked late utilisation of ANC to unplanned pregnancies. The knowledge of the disease (utilisation of ANC) of the adolescents showed that 25 % (*n*= 24) perceived the right time to go to the ANC

clinic was after one month of being pregnant, however due to other predisposing characteristics (demographics and social structure) utilisation of ANC was late.

5.2.2. Recommendations to enhance early ANC booking.

The predisposing characteristics listed above are multifaceted as they contribute to the adolescent's late utilisation of ANC, hence a holistic approach towards recommendations are made to enhance early bookings. The first recommendation is addressing service provision to target the greater number of scholars, and the financial constraints possibly involved in attending clinics as the majority did not generate an income.

5.2.2.1 Recommendation One

- Guided by the WHO (2016) recommendations to improve utilisation and quality of ANC a community-based interventions and support can be facilitated through participatory learning and action cycles with women groups (WHO, 2016). Furthermore, South Africa National Department of Health recommends a strategy to intensify maternal health care through community participation in which communities, families and adolescents be empowered to contribute actively to improve maternal health and promote early utilisation of ANC (SANDoH, 2015b).
- Antenatal learning and support groups (ALS) can be created and held at the clinic sites school sites, community centres, community halls and even religious institutions as these are public venues made available for community use. The use of a facility closer to the adolescent allows for easier access, especially in the context of financial constraints.
- The ALS groups can be promoted within school assemblies and religious gatherings and print media (flyers) and social media platforms (Facebook and WhatsApp).
- The ALS groups can be started by the community leaders, home based care workers and health care workers. The health care worker can be a midwife from the clinic who initiates the group and provides correct ANC health education which can then be disseminated to the community leaders and youth group leaders. The community leaders and home based carers can then facilitate the groups and have the health care worker check in on a monthly basis.

- The groups can be facilitated by a more age appropriate facilitators as research shows that adolescents did not want to be seen by community members accessing ANC (Chikalipo et al., 2018), like Midwifery students attending the clinic for practical`s as the clinics are rotated with new students every six months as per training.
- The ALS groups can have monthly meetings commencing, after school hours (15h00-16h00) on weekdays and weekends (10h00-11h00) in which adolescents can discuss, participate and learn about maternal health including contraception, termination of pregnancy and the importance of early antenatal care. Adolescents can discuss their pregnancy needs and barriers they are facing in the group resulting in increased support to the adolescent. This can create a safe environment for the adolescent to learn on the importance of early ANC.

5.2.3. Enabling characteristics for adolescent`s (15-19 years) (*n*= 96) late utilisation of ANC and recommendations to enhance early ANC bookings.

The enabling characteristics (family and community) give authority to the adolescent to be able to utilise ANC early or hinder the use of such (Andersen, 1995a). In this study family income of between R 1 and R1000, represented most adolescents (n=52, 54.2%). This indicates that the majority of the adolescents and their household lived below the poverty line (R 1227.00) Which deters the adolescent from attending ANC early (South African Market Insights, 2019). Sarker et al. (2018) showed that adolescents with lower levels of economic status were less likely to attend ANC at the recommended rate compared to adolescents with a higher economic status (Sarker et al., 2018). In the community characteristics, the ratio of health personnel and staff, privacy and waiting times at the clinics was 78.1%, 58.3%, & 65.6% respectively. This indicates the adolescent was generally satisfied with clinic, staff and privacy. Even though the adolescent was satisfied with the health personnel and facility, due to other predisposing and disenabling characteristics overall the adolescents booked late for ANC.

5.2.4. Recommendations to enhance early ANC booking.

From the Health Services Utilisation model the enabling characteristics was found to either promote or hinder the utilisation of ANC. The family income in this study was seen to hinder the

use of ANC possibly due to lack of financial support and transport hence recommendation two is directed towards this contributory factor to late utilisation. The community characteristics showed the adolescent satisfied with the clinic and the facility, however they continued to book late therefore recommendation two follows.

5.2.4.1. Recommendation Two

- Support and service via the mobile clinics and ward-based outreach programmes (WABOTS) can result in the adolescent having access to ANC booking and care without having to go to the clinic (SANDoH, 2015b). Likewise, household and community mobilization and antenatal home visits are recommended to improve antenatal care utilisation and perinatal health outcomes, particularly in rural settings with low access to health services (WHO, 2016).
- Stakeholders to strengthen health care system interventions by home antenatal visits.
- Stakeholders like District Health System can assist in strengthening the mobile clinics and WABOTS by providing an adequate number of trained staff (4 or more midwives) to render maternal health services via the outreach programs. The outreach programs can target specific areas in the communities in Sub District North that are of low economic status. Also stakeholders to provide the staff with safe transportation to and from the communities.
- Relationships can be established with community leaders and health care workers to ensure participation from the community.
- Stakeholders to provide adequate resources for health care workers to render home based antenatal care including appropriate medical supplies, health education material example teaching aids, pamphlets and booklets in appropriate language for the adolescents.
- Through the outreach programs the communities can have access to ANC especially the adolescents that are unable to visit the clinic and possibly encourage early ANC bookings.

5.2.4.2. Recommendation Three

- WHO (2016) recommends policy-makers should consider educational, regulatory, financial and personal and professional support interventions to recruit and retain qualified health workers (WHO, 2016). In addition, improving infrastructure in healthcare facilities and increasing qualified health care professional are part of the building blocks set out by the National Department of Health (2015).
- Promotion and recognition of staff rendering maternal health care
- The continued promotion and recognition of the health care worker can have an effect on the staff satisfaction which can result in staff`s continued dedication in promoting early utilisation of ANC. The staff that have been working in the antenatal clinics can be recognised through their long service.
- Staff in the clinics can be recognised for their hard work by been given the opportunity of furthering their educational level and skills such as acquiring specialised training in maternal health care. This can result in movement of staff in higher positions and creating more job opportunities. Furthermore, resulting in staff possessing job satisfaction and loyalty to their profession which can motivate good work ethics and positive attitudes towards rendering health education in ANC for adolescents.

5.2.3. Illness level of adolescents (15-19 years) (*n*= 96) which contribute to late utilisation and recommendations to enhance early ANC bookings

The illness level of the adolescent (perceived and evaluated characteristics) pertains to their pre-existing health status and the probability of the use of ANC services (Andersen & Newman, 1973). The adolescents perceived illness level in this study reported 77.1 % (*n*= 74) had presented with no health problems in their pregnancy. The nil health illness resulted in the adolescent perceiving their illness level as low, therefore their late utilisation of the ANC. Govender, et al., (2018) and Tesfaye et al. (2018) illustrated that adolescents delayed their ANC utilisation as they did not perceived any health issues and felt no need to attend ANC early (Govender et al., 2018; Tesfaye et al., 2018). The study also recorded that the adolescents (*n*=41, 42.7%) utilised ANC late as they perceived it was the correct time to book ANC. The evaluated

illness level of the pregnancy for the adolescent contributed to the adolescent perceiving that booking late for ANC was the correct time to do so (Andersen, 1995a).

From the Illness level of characteristics that contributed to the adolescents' late utilisation of ANC recommendations to enhance ANC booking are as above.

5.2.4. Key findings of the study

- Predisposing characteristics that contributed to adolescent`s late utilisation for this study included certain demographics and beliefs. Demographic characteristics included age (47.9% single adolescents), education level (84.4% attending school), employment status (85.4% not generating an income) and family size (mean family size of one pregnancy) which contributed to late utilisation of ANC.
- The beliefs of the adolescent predisposed them to late utilisation, as 88.5 % (*n*= 85) had unplanned pregnancies, and disease knowledge had predisposed the adolescent to book late as 25% (*n*= 24) of adolescents perceived that after one month of being pregnant was the right time to attend ANC.
- The enabling characteristics can either assist or hinder the adolescent in utilisation of ANC, and in this study family income deterred the adolescent in booking for ANC as 54.2% (*n*= 52) were in the income bracket of R 1-1000. The community characteristics resulted in the adolescent being generally satisfied with the clinic facility and staff.
- The Illness level of the adolescent contributed to late utilisation, with 77.1 % (*n*= 74) perceived no health problems in this pregnancy, thus a low illness level and consequential late booking.
- The perceived level of illness in this study showed that 42.7 % (*n*=41) of the adolescents perceived it was the right time to book for ANC was at the respective gestational age past 20 weeks.

5.3. RECOMMENDATIONS

The following recommendations, as based on the study's findings are made towards midwifery practice, research and education.

5.3.1. Midwifery practice

The midwifery practise recommendations are in addition to the recommendations described earlier in this chapter.

- Contraception methods and health education to adolescents should be made more accessible e.g. easier access to condom dispensers, access contraception through school health systems, mobile clinics, media and print adverts to the community.
- Health care works should maintain a positive and empowering attitude to motivate the adolescent towards ANC.
- The clinic facility can improve its setting to encourage adolescent attendance possibly different waiting areas with a more youthful approach such as colourful seating and posters.

5.3.2. Midwifery research

- An exploratory approach to describe the adolescents' experiences of their utilisation of ANC.
- Focus groups and discussions with health care workers to determine their experiences and feelings from the health care worker perspective about adolescents' late utilisation of ANC.

5.3.3. Education

- Encourage basic education to incorporate more informative sexual health education in school curricula e.g. family planning and antenatal care for appropriate grades.
- To incorporate into nursing education a more age specific nursing care towards adolescents with regards to maternal and child health.
- To reinforce health care worker's knowledge and practise on current maternal health programmes such as BANC PLUS and to ensure health care workers maintain competencies and updates.

5.4. LIMITATIONS

The study was conducted within one district of eThekwini, which yielded findings in only one district (North district) hence the researcher could not generalise the findings. The eThekwini municipality declined (without reason) permission to conduct the study in their clinics, hence the study sites consisted only of the Department of Health Primary Health care and Community Health care clinics; and excluded the 21 local Municipal clinics.

5.5. SUMMARY OF CHAPTER FIVE

The discussion of the characteristics to late utilisation, recommendations that could enhance early utilisation of ANC, limitations of study and the conclusion were presented in this last chapter. The discussion was based on Health Service Utilisation model (1973) and included the predisposing and enabling characteristics as well as illness levels that contributed to the adolescent's late utilisation of ANC. Recommendations were provided according to key findings from the data analysed. The conclusion based on the aim of the study and final analysis realised that certain factors contribute to adolescent's late utilisation of ANC. Recommendations from the study were guided by the study`s findings and directed towards midwifery nursing research and practise, and education, not confined to midwifery education. The limitations of the study followed.

5.6. CONCLUSION OF THE STUDY

The study revealed the contributory factors towards the adolescents' late utilisation of ANC. Basic Antenatal Care Plus Programme (BANC PLUS) has been shown to be beneficial to the adolescent as early utilisation of ANC can reduce maternal mortality. However, based on the Anderson and Newman Health Utilisation framework contributory factors, specific to the select geographical area were identified for late ANC utilisation. The targeting of the contributory factors through the recommendations can add value to the maternal health of the adolescent and in so doing recognise the global goal of universal health coverage and achieving Sustainable Development Goal 3.1.

REFERENCES

Acharya, S. K. 2016. Demographic and Socio-economic Factors Affecting Antenatal Care Services Utilization in Nepal. *Journal of Development and Administrative Studies,* 24**,** 71-87.

Ali, N., Sultana, M., Sheikh, N., Akram, R., Mahumud, R. A., Asaduzzaman, M. & Sarker, A. R. 2018. Predictors of Optimal Antenatal Care Service Utilization Among Adolescents and Adult Women in Bangladesh. *Health Services Research and Managerial Epidemiology,* 5**,** 2333392818781729.

Andersen, R. 1995a. Andersen and Newman framework of health services utilization. 36**,** 1-10.

Andersen, R. & Newman, J. F. 1973. Societal and Individual Determinants of Medical Care Utilization in the United States. *The Milbank Memorial Fund Quarterly. Health and Society,* 51**,** 95-124.

Andersen, R. & Newman, J. F. J. T. M. Q. 2005. Societal and individual determinants of medical care utilization in the United States. 83**,** Online-only-Online-only.

Andersen, R. M. 1995b. Andersen and Newman Framework of Health Services Utilization. *Journal of Health and Social Behavior* 36**,** 1-10.

Andersen, R. M., Davidson, P. L. & Baumeister, S. E. 2007. Improving Access to Care in America. Changing the US health care system: Key Issues in Health Services Policy and Management. 3-31.

Berhe, K. K., Welearegay, H. G., Abera, G. B., Kahsay, H. B. & Kahsay, A. B. 2014. Assessment of Antenatal Care Utilization and Its Associated Factors Among 15 to 49 Years of Age Women in Ayder Kebelle, Mekelle City 2012/2013; A Cross Sectional Study. *American Journal Advance Drug Delivery,* 62**,** 75.

Burns, N. & Grove, S. K. 1997. *Study guide for the practice of nursing research : conduct, critique, and utilization, third edition,* Philadelphia, Pa. ;, W.B. Saunders.

Bwalya, B. C., Sitali, D., Baboo, K. S. & Zulu, J. M. 2018. Experiences of Antenatal Care Among Pregnant Adolescents at Kanyama and Matero Clinics in Lusaka District, Zambia. *Reproductive Health,* 15**,** 124.

Chikalipo, M. C., Nyondo-Mipando, L., Ngalande, R. C., Muheriwa, S. R. & Kafulafula, U. K. 2018. Perceptions of Pregnant Adolescents on The Antenatal Care Received at Ndirande Health Centre in Blantyre, Malawi. *Malawi Medical Journal : The Journal of Medical Association of Malawi,* 30**,** 25-30.

Dookie, S. & Singh, S. 2012. Primary Health Services at District Level in South Africa: A Critique of the Primary Health Care Approach. *Biomedical Center Family Practice,* 13**,** 67.

Ebonwu, J., Mumbauer, A., Uys, M., Wainberg, M. L. & Medina-Marino, A. 2018. Determinants of Late Antenatal Care Presentation in Rural and Peri-Urban Communities in South Africa: A Cross-Sectional Study. *PLOS ONE* 13**,** e0191903-e0191903.

Ejeta, E., Dabsu, R., Zewdie, O. & Merdassa, E. 2017. Factors Determining Late Antenatal Care Booking and The Content of Care Among Pregnant Mother Attending Antenatal Care Services in East Wollega Administrative Zone, West Ethiopia. *Pan African Medical Journal,* 27.

eThekwini Municipality 2017. Economic Development and Growth in eThekwini. eThekwini.

Ganchimeg, T., Ota, E., Morisaki, N., Laopaiboon, M., Lumbiganon, P., Zhang, J., Yamdamsuren, B., Temmerman, M., Say, L., Tunçalp, Ö., Vogel, J. P., Souza, J. P., Mori, R. & WHO 2014. Pregnancy and Childbirth Outcomes Among Adolescent Mothers: A World Health Organization Multicountry Study. *BJOG : An International Journal of Obstetrics and Gynaecology,* 121 Suppl 1**,** 40-48.

Govender, T., Reddy, P. & Ghuman, S. 2018. Obstetric Outcomes and Antenatal Access Among Adolescent Pregnancies in KwaZulu-Natal, South Africa. *South African Family Practice,* 60**,** 1-7.

Gray, J. R., Grove, S. K. & Sutherland, S. 2016. *Burns and Grove's The Practice of Nursing Research-E-Book: Appraisal, Synthesis, and Generation of Evidence,* Elsevier Health Sciences.

Grum, T. & Brhane, E. 2018. Magnitude and Factors Associated with Late Antenatal Care Booking on First Visit Among Pregnant Women in Public Health Centers in Central Zone of Tigray Region, Ethiopia: A Cross Sectional Study. *PLOS ONE,* 13**,** e0207922.

Guba, E. G. 1990. The Alternative Paradigm Dialog. *The Paradigm Dialog.* Thousand Oaks, CA, US: Sage Publications, Inc.

Guevarra, M. V., Stubbs, J. M., Assareh, H. & Achat, H. M. 2017. Risk Factors Associated with Late Entry to Antenatal Care Visits in NSW in 2014. *Australian and New Zealand Journal of Public Health,* 41**,** 543-544.

Hackett, K., Lenters, L., Vandermorris, A., LaFleur, C., Newton, S., Ndeki, S. & Zlotkin, S. 2019. How Can Engagement of Adolescents in Antenatal Care be Enhanced? Learning from the Perspectives of Young Mothers in Ghana and Tanzania. *BMC Pregnancy and Childbirth,* 19**,** 184.

Heaman, M. I., Moffatt, M., Elliott, L., Sword, W., Helewa, M. E., Morris, H., Gregory, P., Tjaden, L. & Cook, C. 2014. Barriers, Motivators and Facilitators Related To Prenatal Care Utilization Among Inner-City Women in Winnipeg, Canada: A Case–Control Study. *BMC Pregnancy and Childbirth,* 14**,** 227.

Hussen, S., Melese, E. & Dembelu, M. 2016. Timely Initiation of First Antenatal Care Visit of Pregnant Women Attending Antenatal Care Service. *Journal of Women Health Care,* 5**,** 2167-0420.1000346.

Johnson, A. A., El-Khorazaty, M. N., Hatcher, B. J., Wingrove, B. K., Milligan, R., Harris, C. & Richards, L. 2003. Determinants of Late Prenatal Care Initiation by African American Women in Washington, DC. *Maternal and Child Health Journal,* 7**,** 103-114.

Kaswa, R., Rupesinghe, G. F. D. & Longo-Mbenza, B. 2018. Exploring the Pregnant Women's Perspective of Late Booking of Antenatal Care Services at Mbekweni Health Centre in Eastern Cape, South Africa. *African Journal of Primary Health Care & Family Medicine,* 10**,** e1-e9.

Kim, K. H., Choi, J. W., Oh, J., Moon, J., You, S. & Woo, Y. 2019. What are the Barriers to Antenatal Care Utilization in Rufisque District, Senegal?: a Bottleneck Analysis. *Journal of Korean Medical Science* [Online], 34. Available: http://europepmc.org/abstract/MED/30804730 [Accessed 2019/02//].

KZNDoH 2017/2018. Annual Report. Kwa Zulu Natal.

KZNDoH 2018. eThekwini District Health Plan *In:* HEALTH (ed.). Kwa Zulu Natal.

KZNDoH. 2019. *Referral System : Levels of Health Care* [Online]. South Africa: KwaZulu-Natal Department of Health. Available: http://www.kznhealth.gov.za/Referral-system.htm [Accessed 22 Decemeber 2019].

Mahajan, H. & Sharma, B. 2014. Utilization of Maternal and Child Health Care Services by Primigravida Females in Urban and Rural Areas of India. *ISRN Preventive Medicine* [Online], 2014. Available: http://europepmc.org/abstract/MED/24977099 [Accessed 2014].

Manda-Taylor, L., Sealy, D. A. & Roberts, J. 2017. Factors Associated with Delayed Antenatal Care Attendance in Malawi: Results from a Qualitative Study. *Medical Journal of Zambia*, 44**,** 17-25.

Meshram, I. I., Rao, K. M., Reddy, C. G., Kakani Sreerama, K., Venkaiah, K., Laxmaiah, A., Narasimhachary, G. & Brahmam, V. 2014. Predictors of Ante-Natal Care, Delivery and Infant Feeding Practices Among Rural Women in Madhya Pradesh, India. *International Journal of Medicine and Public Health,* 4**,** 385-391.

Muhwava, L. S., Morojele, N. & London, L. 2016. Psychosocial factors associated with early initiation and frequency of antenatal care (ANC) visits in a rural and urban setting in South Africa: a cross-sectional survey. *BMC Pregnancy and Childbirth,* 16**,** 18.

Nayak, S., Varambally, K. V. M. & Nayak, V. 2018. Impact of Attitude Towards Pregnancy on Maternal Care Seeking Behavior: Evidence from Rural Landscapes of India. *Pakistan Journal of Medical and Health Sciences,* 12**,** 538-543.

Odimegwu, C. & Mkwananzi, S. J. A. j. o. r. h. 2016. Factors associated with teen pregnancy in sub-Saharan Africa: a multi-country cross-sectional study. 20**,** 94-107.

Polit, D. F. & Beck, C. T. 2008. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, Lippincott Williams & Wilkins.

Polit, D. F. & Beck, C. T. 2009. *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*, Lippincott Williams & Wilkins.

Raosoft.com. 2004. *Sample Size Calculator* [Online]. Available: http://www.raosoft.com/samplesize.html [Accessed 10 September 2019].

S.A Governement News Agency. 2020. *Increased Allocations in Grants, Education and Health* [Online]. South Africa. Available: https://www.sanews.gov.za/south-africa/increased-allocations-grants-education-and-health [Accessed 27 March 2020].

SANDoH 2015a. Ethics in Health Research. *In:* HEALTH (ed.) 2nd ed. South Africa.

SANDoH 2015b. Guidelines for Maternity Care in South Africa: A Manual for Clinics, Community Centres and District Hospitals. *In:* HEALTH, D. O. (ed.) Fourth ed. South Africa.

Sarker, A., Sheikh, N., Mahumud, R. & Sultana, M. 2018. Determinants of Adolescent Maternal Healthcare Utilization in Bangladesh. *Public Health,* 157**,** 94-103.

Solarin, I. & Black, V. 2013. "They told me to come back": Women's Antenatal Care Booking Experience in Inner-City Johannesburg. *Maternal and Child Health Journal,* 17**,** 359-367.

South African Market Insights. 2019. *South Africa's National Poverty Lines for 2019. How Much Does Every South African Need to Buy Basics to Survive?* [Online]. South Africa. Available: https://www.southafricanmi.com/south-africa-poverty-lines-1aug2019.html [Accessed 14 April 2020].

Statistics S.A. 2016a. *Community Survey* [Online]. South Africa: SA STATS. Available: http://www.statssa.gov.za/?page_id=993&id=ethekwini-municipality [Accessed 14 August 2019].

Statistics S.A 2016b. Population Groups. South Africa.

Tesfaye, G., Chojenta, C., Smith, R., Loxton, D. & East, C. E. 2018. Application of the Andersen-Newman Model of Health Care Utilization to Understand Antenatal Care Use in Kersa District, Eastern Ethiopia. *PLOS ONE,* 13**,** e0208729.

UNFPA 2013. Adolescent Pregancy: A Review of Evidence New York

UNICEF. 2019. *Antenatal Care* [Online]. UNICEF. Available: https://data.unicef.org/topic/maternal-health/antenatal-care/ [Accessed 23 November 2019].

WHO 2004. Adolescent Pregnancy: Issues in Adolescent Health and Development. *In:* (WHO), W. H. O. (ed.).

WHO 2016. WHO recommendations on antenatal care for a positive pregnancy experience. World Health Organization.

WHO. 2018a. *Adolescent birth rate* [Online]. Available: http://apps.who.int/gho/data/view.main.1610A?lang=en [Accessed January 25 2019].

WHO. 2018b. *Adolescent Pregancy* [Online]. Available: https://www.who.int/health-topics/news-room/fact-sheets/detail/adolescent-pregnancy [Accessed March 28 2019].

Worku, E. B. & Woldesenbet, S. A. 2016. Factors that Influence Teenage Antenatal Care Utilization in John Taolo Gaetsewe (JTG) District of Northern Cape Province, South Africa: Underscoring the Need for Tackling Social Determinants of Health. *International Journal of Maternal and Child Health and AIDS,* 5**,** 134-145.

World Bank. 2015. *Maternal Mortality Ratio* [Online]. Available: https://data.worldbank.org/indicator/SH.STA.MMRT [Accessed 15 August 2019].

World Bank Group. 2017. *Adolescent Birth Rate* [Online]. Available: https://data.worldbank.org/indicator/SP.ADO.TFRT?end=2017&locations=ZA&name_desc=false&start=1960&type=shaded&view=chart [Accessed 15 August 2019].

APPENDIX 1: QUESTIONNAIRE

IDENTIFYING THE CONTRIBUTING FACTORS TO LATE ULTISATION OF ANC AMONGST ADOLESCENTS IN PRIMARY HEALTH CARE CLINICS IN SUB DISTRICT NORTH OF ETHEKWINI

ALL INFORMATION IN THIS QUESTIONNAIRE WILL BE TREATED CONFIDENTIALLY. PLEASE DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE.

INSTRUCTIONS:

1. PLEASE ANSWER ALL QUESTIONS BY PROVIDING AN "X" IN THE BOX SHOWING YOUR CHOICE OR BY FILLING IN THE ANSWER IN THE SPACE
2. PLEASE ANSWER ALL QUESTIONS AS HONESTLY AS POSSIBLE
3. ANSWER ACCORDING TO YOUR OWN PERSONAL OPINION AND EXPERIENCE
4. WHEN YOU ARE FINISHED, PLEASE PUT THE QUESTIONNAIRE INTO THE SEALED BOX

1. DEMOGRAPHICS AND SOCIO-ECONOMIC INFORMATION

1.1 Your age in years _____

1.2 What is your religion?

Christian	Muslim	Hindu	Shembe	Other (specify)

1.3 What is your marital status?

Married	Separated	Divorced	Widowed	Single

1.4 What is your level of education?

Never been to school	Primary school	Secondary school	Tertiary education (Diploma / degree)

1.5 Are you working?

Yes	No

1.5a. If yes, what is your employment status?

Permanent	Temporary	Piece jobs	Self-employed

1.6 What is your average household monthly income? R _____

1.7 How much does it cost for you to travel to the clinic and home again? R_____

2 OBSTETRICAL HISTORY

2.1 How many times have you been pregnant? _____

2.2 Have you ever had an abortion?

Yes	No

2.2.1. If yes,

Natural abortion	Purposeful

2.3 Have you used any type of contraceptive?

Yes	No

2.3.1 If yes, what type of method?

The Pill	Injection	Condoms	Loop	Implant

3 KNOWLEDGE OF ANTENATAL CARE (ANC)

3.1. How do you rate the importance of ANC for your health while being pregnant?

Highly important	Medium importance	Less importance	Do not know

3.2. How do you rate the importance of ANC for the baby you are carrying?

Highly important	Medium importance	Less importance	Do not know

3.3. When do you think it is the right time to go for ANC after you have missed your last period?

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9

3.4 How many times during a pregnancy do you think a woman needs to attend the ANC clinic?

1 time	2 times	3 times	4 times or more

4 YOUR EXPERIENCES OF ANC SERVICES

4.1 How long did it take you to complete your check-up at the ANC clinic in this pregnancy?

4.1. a. For your first visit? _____hours

4.1. b. For repeat visits? _____ hours

4.2 How would you rate the following items of ANC service in terms of your satisfaction?

4.2. a. Satisfaction with the staff

Extremely Satisfied	Satisfied	Neither Satisfied or Dissatisfied	Dissatisfied	Extremely Dissatisfied

4.2. b. Waiting times

Extremely Satisfied	Satisfied	Neither Satisfied or Dissatisfied	Dissatisfied	Extremely Dissatisfied

4.2. c. Privacy

Extremely Satisfied	Satisfied	Neither Satisfied or Dissatisfied	Dissatisfied	Extremely Dissatisfied

5 HISTORY OF THIS PREGNANCY

5.1 How did you find out about the pregnancy?

CHOOSE **ONLY ONE** and please put an "X" in the box of your choice

Missed my period …….....	
Changes in my body ……...	
Symptoms, e.g. nausea …….	

5.2 Were you aware that you should be attending ANC?

Yes	No

5.3 How long after you missed your last period did you start coming to ANC?

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9

5.4. Are there any health problems in this pregnancy?

Yes	No

5.5a. If yes to any health problems in this pregnancy, please state the problem/s

_____

5.5 b Before the 1st visit was there anyone who told you to go to the ANC clinic?

Yes	No

5.6. If yes to the above, who told you to go to the ANC clinic?

Mother	Aunt	Sister	Teacher	Neighbour	Mother-in- law	Friend

5.7. If you were told to go to the ANC clinic, did that person tell you when to start going to the clinic?

Yes	No

5.8. If you were told to go to the ANC clinic, when did they say you must start going to the clinic? At _____ months.

6. What made you start coming to ANC clinic when you did?
CHOOSE **ONLY ONE** and put an "X" in the box of your choice.

I thought it was the right time ……	
Money reasons (Could not afford)……	
Attending school ……	
Fear ……	
I did not know when to start ……	
Unhelpful response from healthcare workers ……	
Peer influence ……	
Other (specify) ……	

7. Was this pregnancy planned? ……	Yes	No
7.1. a. If no to the above, is this pregnancy accepted by you after falling pregnant? ……	Yes	No
7.1.b Did you tell your partner of the pregnancy? ……..	Yes	No
7.1.c. If yes to above, is this pregnancy accepted by your partner? ……	Yes	No

Thank you for filling in this questionnaire.
Please put it in the box provide.

APPENDIX 2: ISIZULU VERSION OF QUESTIONNAIRE

IDENTIFYING THE CONTRIBUTING FACTORS TO LATE ULTIZATION OF ANC AMONGST ADOLESCENTS IN PRIMARY HEALTH CARE CLINICS IN SUB DISTRICT NORTH, ETHEKWINI

LONKE ULWAZI KULOLU LUHLU LWEMIBUZO LUYOPHATHWA NGOBUMFIHLO. SICELA UNGABHALI IGAMA LAKHO KULOLU LUHLU LWEMIBUZO

IMIYALELO:

1. NGICELAUPHENDULE YONKE IMIBUZONGOKUFAKA U-"X" EBHOKISINI OKUZOKHOMBISA UKUTHI UKHETHE EYIPHI IMPENDULO NGOKUFAKA IMPENDULO ESIKHALENI OSINIKEZIWE.
2. NGICELA UPHENDULE YONKE IMIBUZO NGOKUTHEMBEKA.
3. PHENDULA NGEMBIBONO YAKHO NGOKUTHEMBEKA NANGOHLANGABEZANE NAKHO.
4.UMA SEWUQEDILE, NGICELA UFAKE LE MIBUZO EPHENDULIWE EBHOKISINI ELIVALIWE.

1. ULWAZI NGOKUHLUKAHLUKANA NGOKUHLALA KWEZINHLANGA NESIMO SOMNOTHOWOMPHAKATHI

1.1. Iminyaka yakho _____

1.2 Eyiphi inkolo yakho?

UMkhrestu	I-Islam	I-Hindu	UShembe	Okunye (cacisa)

1.3 Isimo sakho sokushada/sokungashadi?

Ushadile	Uhlukanisile	Udivosile	Umfelwa/Umfelokazi	Awushadile

1.4 Izinga lakho lemfundo?

Angikaze ngiye esikoleni	Esikleni samabanga aphansi	Esikleni samabanga aphezulu	Imfundo Ephakeme (Diploma / Iziqu)

1.5. Uyasebenza?

Yebo	Cha

1.5 a. Uma impendulo kungu Yebo, sitshele ngesimo somsebenzi wakho?

Usebenza ngokugcwele	Usebenza okwesikhashana	Amatoho	Uyazisebenza

1.6. Isilinganiso semali engena nyangazonke? R _____

1.7.Kukubiza malini ukuya emtholampilo uphinde ubuyele ekhaya? R_____

2. UMLANDO NGOKUKHULELWA NOKUZALWA KWENGANE

2.1 Sewukhulelwe izikhathi ezingakhi? _____

2.2 Uke wasihushula isisu?

Yebo	Cha

2.2.1. Uma impendulo kungu yebo,

Ukuzihushukela kwesisu ngokwendalo	Wasihushula ngenhloso

2.3 Uke wasebenzisa uhlobo oluthile lokuvikela inzalo?

Yebo	Cha

2.3.1 Uma impendulo kungu Yebo, oluphi uhlobo?

Iphilisi	Umjovo	Amakhondomu	I-Loop	I-Implant

3. ULWAZI NGOKUNAKEKELWA NGESIKHATHI UASAKHULELWE (ANC)

3.1. Ungakukala kangakanani ukubaluleka kwe-ANC empilweni yakho ngesikhathi usakhulelwe?

Kubaluleke kakhulu	Kuphakathi nendawo	Akubalulekile kakhulu	Angazi

3.2. Ukukala kngakanani ukubaluleka kwe-ANC enganeni oyikhulelwe?

Kubaluleke kakhulu	Kuphakathi nendawo	Akubalulekile kakhulu	Angazi

3.3.Ucabanga ukuthi esiphi isikhathi esikahle ukuyela i-ANC uma beweqiwe izinsuku zakho zokuya esikhathini?

Inyanga 1	Inyanga 2	Inyanga 3	Inyanga 4	Inyanga 5	Inyanga 6	Inyanga 7	Inyanga 8	Inyanga 9

3.4 Ucabanga ukuthi owesifazane okhulelwe kufanele aye kangakhi emtholampilo we-ANC?

Kanye	Kabili	Kathathu	Kane noma ngaphezulu

4. OHLANGABEZANE NAKHO NGOKUSIZWA YI-ANC

4.1 Kkuthathe isikhathi esingakanani ukugcwalisa ifomu lokuhlolwa emtholampilo we-ANC kulokhu kukhulelwa?

4.1. a. Ngesikhathi uvakashela okokuqala? _____amahora

4.1. b. Ngesikhathi sewuphinda ubuyelela? _____ amahora

4.2 Ungakukala kanjani lokhu okulandelayo kwe-ANC ngokugculiseka kwakho?

4.2. a. Ukugculiseka ngabasebenzi

Ngigculiseke kakhulu	Ngigculisekile	Akwenzeki kokubili	Angigculisekile	Angigculisekile kakhulu

4.2. b. Izikhathi zokulinda

Ngigculiseke kakhulu	Ngigculisekile	Akwenzeki kokubili	Angigculisekile	Angigculisekile kakhulu

4.2. c. Ubumfihlo

Ngigculiseke kakhulu	Ngigculisekile	Akwenzeki kokubili	Angigculisekile	Angigculisekile kakhulu

5. UMLANDO NGALOKHU KUKHULELWA

5.1 Wathola kanjani ukuthi ukhulelwe?

KHETHA <u>OKUKHOKAW KUPHELA</u> bese ufaka u-"X" ebhokisini

Ngeqiwa yizinsuku zami ……	
Ushintsho emzimbeni wami……	
Izimpawu e.g. ukuphathwa yinhliziyo encane ……	

a. Bewazi ukuthi kufanele uye kwi-ANC? ……

Yebo	Cha

5.3 Kube yisikhathi esingakanani emva kokweqiwa yizinsuku zakho lapho uqale ukuya kwi-ANC?

Inyanga 1	Inyanga 2	Inyanga 3	Inyanga 4	Inyanga 5	Inyanga 6	Inyanga 7	Inyanga 8	Inyanga 9

5.4. Zikhona izinkinga zezempilo kulokhu kukhulelwa?

Yebo	Cha

5.5.a. Uma impendulo kungu Yebo kulezi zinkinga zezempilo, ngicela uzisho lezi zinkinga

5.5. b. Ngaphambi kokuvakashela okokuqala, wayekhona owakutshela ukuthi kufanele emtholampilo we-ANC? ……

Yebo	Cha

5.6. Uma impendulo ngaphezulu kungu Yebo, ubani owakutshela ukuthi iya emtholampilo we-ANC?

Umama	U-Anti	Udadewethu (omdala)	Uthisha	Umakhelwane	Umamezala	Umngane

5.7. Uma watshelwa ukuthi uye emtholampilo we-ANC, lowo muntu wakutshela ukuthi uqale nini emtholampilo? …….

Yebo	Cha

5.8. Uma watshelwa ukuthi uye emtholampilo we-ANC, lowo muntu wakutshela ukuthi uqale nini emtholampilo? Ezinyangeni ezingakhi _____

6. Yini eyakwenza waqala ukuya emtholampilo we-ANC, ngesikhathi uqala?

KHETHA <u>OKUKHOKAW KUPHELA</u> bese ufaka u-"X" ebhokisini

Ngacabanga ukuthi sekuyisikhathi esikahle sokuya ……	
Izizathu zemali (ngangingakwazi ukuya)……	
Ngangisafunda ……...	
Uvalo ……	
Ngangingazi ukuthi ngiqale nini ……	
Izimpendulo ezazingangisizi engangizinikezwa abasebenzi bezempilo ……	
Ukutshelwa/ukududana nozakwethu ……	
Okunye (cacisa) ……	

	Yebo	Cha
7. Kwakuhleliwe lokhu kukhulelwa? ……..		
7.1. a. Uma impendulo ngaphezulu kungu cha, wakwamukela lokhu kukhulelwa? ……	Yebo	Cha
7.1.b Wamtshela umaqondana wakho ngalokhu kukhulelwa? ……	Yebo	Cha
7.1.c. Uma impendulo yakho ngaphezulu kungu yebo, wakwamukela umaqondana wakho? ……..	Yebo	Cha

Siyabonga ngokugcwalisa loluhlu lwemibuzo. Sicela ukufake lokhu ebhokisini elivaliwe.

APPENDIX 3: INFORMATION SHEET AND CONSENT TO PARTICIPATE IN THE RESEARCH STUDY FOR ADOLESCENT 18-19 YEARS

Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in the Sub District North, eThekwini.

Date: __ / ___ / 2019

Greetings Parent/Guardian of Potential respondent

My name is Preantha Reddy, student number: 209521513, a Masters student in the Nursing Department, Howard College, University of KwaZulu-Natal. My contact number is [redacted] and email address 209521513@stu.ukzn.ac.za

Your child is being asked to possibly take part in a study that involves research. I am looking at finding the causes to the adolescent's late booking of ANC in Primary Healthcare clinics. The study is expected going to have 127 possible respondents from 21 Primary Healthcare clinics from the Sub District North of eThekwini.

The study will have a self-administered questionnaire that you can answer yourself that has tick box answers and closed end questions. The questionnaire will take 15-20 minutes to complete. The researcher has made sure that there is a low risk of harm to possible respondents.

The study will not cause any direct good to the possible respondents at the time of the study

This study has been ethically reviewed and approved by the UKZN Biomedical Research Ethics Committee (approval number, BREC 00000363/2019)

In the event of any problems or questions you may contact the researcher at (provide contact details) or the UKZN Biomedical Research Ethics Committee, contact details as follows:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: BREC@ukzn.ac.za

RESEARCHER
Full name: Preantha Reddy
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of Kwa Zulu Natal
E-mail: 209521513@ukzn.ac.za

SUPERVISOR
Full name: Dr. Olivia Baloyi
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of Kwa Zulu Natal
E-mail: baloyio@ukzn.ac.za

CO-SUPERVISOR
Co-supervisor: Dr. Mary-Ann Jarvis
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of Kwa Zulu Natal
E-mail: jarvism@ukzn.ac.za

Your participation is voluntary, and should you agree to give permission to participate the respondent will not need to answer every question. The respondent may withdraw at any point prior to dropping the questionnaire into the sealed box provided and the procedure to follow is to inform the research assistant or researcher as soon as possible, the questionnaire and informed consent will be disposed of by means of shredding and will not be used in the study. The withdrawal or refusal by the respondent to participate will not have any negative effects on themselves and care provided. The questionnaire is anonymous, so once in the sealed box it cannot be withdrawn.

In this study there will be no reward provided for participating neither will there be any cost for the potential respondent who participates in the study.

I have been informed of the following:
That I am taking part willingly, my identity is kept secret and that after three months the results will be made known to the Municipality. All questionnaires will be kept under lock and key secretly in the research supervisor's office for five years, then destroyed.

CONSENT

Study Title: Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in the Sub District North**,** eThekwini.

I……have been told about the study: Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics, Sub North eThekwini District, South Africa, by the researcher/researcher assistant …… .

I understand what the researcher is asking. I will take part in the study willingly and been given the chance to ask questions. I was told that I can quit at any time without it affecting my treatment at the clinic. I know there is no reward for taking part and who I can contact if I have any questions:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: BREC@ukzn.ac.za

Signature of Respondent **Date**

_____ _____

APPENDIX 4: INFORMATION SHEET AND CONSENT TO PARTICIPATE IN RESEARCH STUDY FOR MINORS INDEPENDENT CONSENT

Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in Phoenix Township, eThekwini District, South Africa

Date: __ / ___ / 2019

Greetings Potential respondent

My name is Preantha Reddy, student number: 209521513, a Masters student in the Nursing Department, Howard College, University of KwaZulu-Natal. My contact number is [redacted] and email address 209521513@stu.ukzn.ac.za

You are being asked to possibly take part in a study that involves research. I am looking at finding the causes to the adolescent's late booking of ANC in Primary Healthcare clinics. The study is expected to have 127 respondents from the 21 Primary Healthcare clinics from the Sub District North of eThekwini.

The study will make use of a questionnaire that you will fill in yourself. It has tick box answers and short answers. The questionnaire will take 15-20 minutes to do. It is believed that little to no harm will come to you by filling in the questionnaire and that other teenagers could benefit from the study.

This study has been ethically reviewed and approved by the UKZN Biomedical Research Ethics Committee (approval number BREC 00000363/2019).

Should you have any problems or concerns/questions you may contact the researcher using the details on this form or the UKZN Biomedical Research Ethics Committee, contact details as follows:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus

Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: BREC@ukzn.ac.za

RESEARCHER
Full Name: Mrs Preantha Reddy
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of KwaZulu-Natal
Mobile: +[redacted]
E-mail: 209529175@stu.ukzn.ac.za

SUPERVISOR
Dr. Olivia Baloyi
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of Kwa Zulu Natal
E-mail: baloyio@ukzn.ac.za

CO-SUPERVISOR
Dr. Mary-Ann Jarvis
School: Nursing & Public Health
College: Health Sciences
Campus: Howard College
University of Kwa Zulu Natal
E-mail: jarvism@ukzn.ac.za

Taking part in this study is voluntary. If you agree to take part, you will not need to answer every question and if you do not want to carry on with it you can pull out at any time before you post

the questionnaire into the sealed box provided. Then you just need to tell the research assistant or researcher as soon as possible, and the questionnaire and informed consent will be shredded and will not be used in the study. If you pull out or refuse to take part in the study it won't have any effect on the ante-natal care you get at the clinic. The questionnaire is anonymous, which means that you do not put your name on it and no-one will know that it was you, and once in the sealed box it cannot be taken out.

In this study there will be no reward for taking part and it also will not cost you anything to take part in the study.

I have been informed of the following:
That I am taking part willingly, my identity is kept secret and that after three months the results will be made know to the Municipality. All questionnaires will be kept under lock and key secretly in the research supervisor's office for five years, then destroyed.

CONSENT

Study Title: *Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Health Care Clinics in the Sub District North, eThekwini.*

I ……have been told about the study: *Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics, in Sub North eThekwini District, South Africa*, by the researcher/researcher assistant …….

I understand what the researcher is asking. I will take part in the study willingly and been given the chance to ask questions. I was told that I can quit at any time without it affecting my treatment at the clinic. I know there is no reward for taking part and who I can contact if I have any questions:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: BREC@ukzn.ac.za

_____ _____

Signature of Minor **Date**

_____ _____

Signature of researcher

/research assistant **Date**

APPENDIX 5: LETTER BY TRANSLATOR

UNIVERSITY OF
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

To whom it may concern

This letter serves as the confirmation that the abstract for the Proposal titled: Identifying the contributing factors to late ultization of ANC amongst adolescents in the Phoenix Township, Ethekwini was translated by Mr B. G. Nene. I am a qualified translator with Translation and Interpreting module at Honours level from UKZN, Humanities School of Arts. I have been teaching IsiZulu at different levels as from 2010. Currently I am working as Lecturer at UKZN (Howard College) under School of Arts. A research will be conducted by Preantha Reddy, student number 209521513.

If you have any questions regarding translated work (Zulu version) do not hesitate to contact me.

Mr B. G. Nene

University of KwaZulu-Natal

MTB Building Howard College

Room G086

Cell: [redacted]

Work: 031 260 2548

Email: neneb@ukzn.ac.za

Sign [redacted] Date 19/08/19

APPENDIX 6: CONFIDENTAILITY AGREEMENT FOR RESEARCH ASSISTANTS

Title of study: *Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in the Sub District North, eThekwini.*

I, _____ [name of research assistant], agree to assist the primary investigator (P. Reddy) with this study in:

1. Collection of data by identifying potential respondents
2. Providing the necessary information on the study to the potential respondents and answering any queries or questions.
3. Obtaining consent and minors independent consent
4. Administering questionnaires to respondents
5. Answering any queries linked to the study
6. Safe keeping of written consents and questionnaire box

I agree to maintain full confidentiality when performing these tasks.

Specifically, I agree to:

1. Keep all research information shared with me confidential by not discussing or sharing the information in any form or format (e.g., consents or questionnaires) with anyone other than the primary investigator
2. Hold in strictest confidence the identification of any individual that may be revealed during the course of performing the research tasks
3. Not make copies of any raw data in any form or format (e.g., consents or questionnaires), unless specifically requested to do so by the primary investigator
4. Keep all raw data that contains identifying information in any form or format (e.g. Questionnaires) secure while it is in my possession
5. Give all raw data, in any form or format (e.g., questionnaires), to the primary investigator at the end of each day of data collection
6. Destroy all research information in any form or format that is not returnable to the primary investigator upon completion of the research tasks

Provide the following contact information for research assistant:
Printed name of research assistant_____
Address: _____
Telephone number: _____

Signature of research assistant_____ Date _____

Printed name of primary investigator_____
Signature of primary investigator_____
Date_____

APPENDIX 7: REQUEST FOR WAIVER

Uninversity of KwaZulu Natal
Howard Campus
Private Bag X 54001
Durban
4000
29th October 2019

Dear BREC Chairperson
Response to BREC/000000363/2019

REQUEST FOR WAIVER OF PARENTAL CONSENT

Project title: Identifying contributory factors to adolescent's late utilisation of antenatal care at Primary Healthcare Clinics in Sub District North of eThekwini District, South africa

I thank you for your response dated 24 October 2019.

I have given consideration and accept your suggestion to change the respondents to range between 15 and 19 years.

My original intention was for BREC to offer me a waiver for the minor's independent consent. I would like to persue this intention again. I apologise for erroneously subsuming my request in the "ethical considerations" of my proposal. I hereby wish to request a waiver for parental consideration of the 15 to 18 year old respondents.

My motivation for waiver is as follows: According to Ethics in Health Research DoH (2015:33) minors can be granted "Minors independent consent" in particular circumstances where it is "desirable and ethically justifiable for minors to choose independently, i.e. without parental assistance, whether to participate in research," provided the research study is of minimal risk to the minor. The particular circumstances DoH (2015) cite are for "reasons of sensitivity," hence in these circumstances the adolescent might not have disclosed to her parent her pregnancy and them requiring parental consent might breech their confidentiality. Due to the nature of the study and its objectives in requiring sensitive issues the Minors, independent consent creates a platform to obtain this information from the adolescent without breaking their right to confidentiality to their parents. Since the study subjects the potential participant to minimal harm, this type of consent allows the researcher to obtain vital information on the adolescent contributory factors to late booking and contributing important information given the study setting of Sub District North eThekwini, which represents the lowest booking rates for ANC amongst the

four eThekwini Sub Districts and the highest teenage pregnancy rate. In light of the above ethical justification, the researcher appeals to BREC for a waiver of the parental (or substitute) permission requirement for minors and the approval of minor independent consent; this will remove the need to obtain community stakeholder consent.

My supervisor (Dr. O. Baloyi) and co-supervisor (Dr. M A Jarvis) support my request for the waiver.

I look forward to a positive response.

Yours sincerely

P. Reddy

Cell: [redacted]

Email: 209521513@stu.ukzn.ac.za

Appendix 8: Permission to adapt questionnaire

Re: Permission for tool

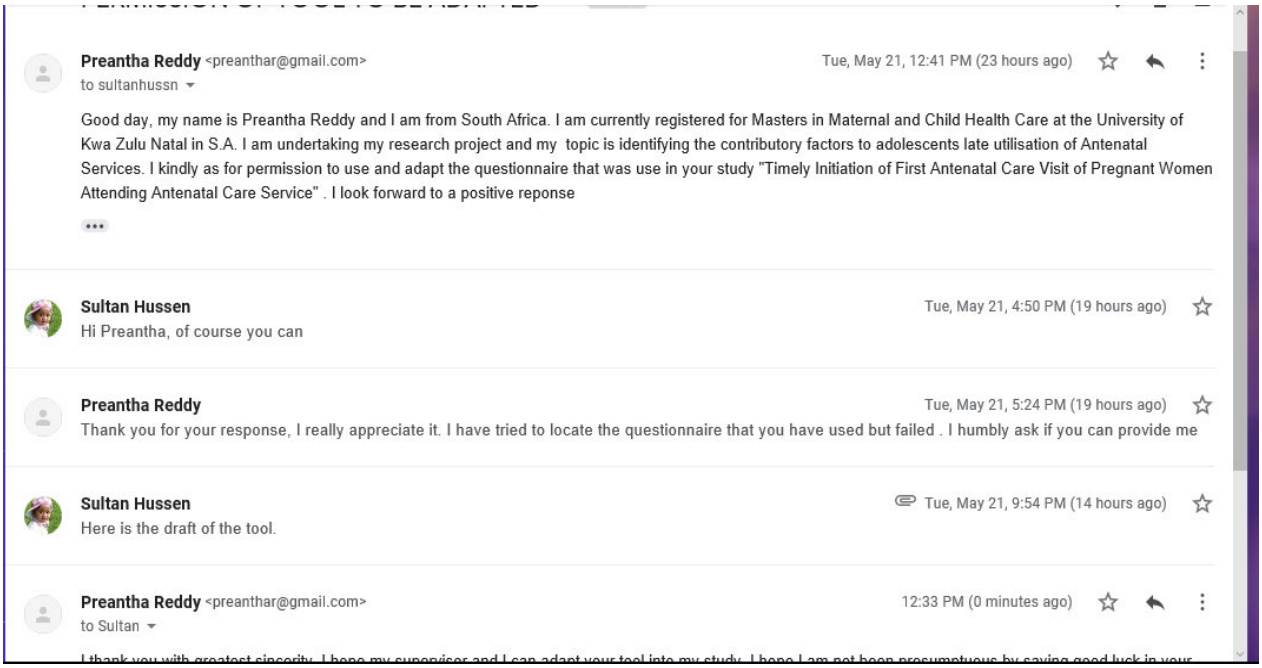
Good day, my name is Preantha Reddy and I am from South Africa. I am currently registered for Masters' in Maternal and Child Healthcare at the University of KwaZulu-Natal in S.A. I am undertaking my research project, and my topic is identifying the contributory factors to adolescent's late utilisation of Antenatal Services. I kindly ask for permission to use and adapt the questionnaire that was used in your study "Timely Initiation of First Antenatal Care Visit of Pregnant Women Attending Antenatal Care Service."

I look forward to a positive response.

Preantha Reddy
209521513

B.Nursing

Permission was obtained on the 21 May 2019 from author Hussen et al., (2016)



APPENDIX 9: LETTER TO KZNDOH

45 Fiddlewood Crescent,
Woodview,
Phoenix.
4068

Date: / /2019

Dear Sir/Madam

RE: Request to conduct study

My name is Preantha Reddy, student number: 209521513, a Masters student in the Nursing Department, Howard College, University of KwaZulu-Natal. My contact number is [redacted] and email address 209521513@stu.ukzn.ac.za. I am currently undertaking a research study entitled: *Identifying contributory factors to adolescents' late utilisation of antenatal care at Primary Healthcare Clinics in the Sub District North, eThekwini.* This study will use a quantitative research design in which the:

Objectives are to:

1. To identify the factors that contribute to adolescents' late utilisation of ANC at PHC clinics in Sub District North, eThekwini
2. To develop recommendations to enhance early ANC bookings by adolescents into PHC clinics in Sub District North, eThekwini

I hereby request your permission to conduct the research project at the 21 Primary Healthcare Clinics in the Sub District North of eThekwini, in which it is estimated that 127 pregnant adolescent females (10-19 years) will be given a questionnaire to obtain anonymous data. My research proposal and ethical clearance certificate have been attached.

Your support and permission to conduct the study at your facility will be appreciated and I look forward to your earliest response.

Yours Sincerely

Mrs. Preantha Reddy

APPENDIX 10: TRREE RESEARCH ETHICS CERTIFICATES


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
preantha reddy
a complété avec succès - has successfully completed
Introduction to Research Ethics
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
preantha reddy
a complété avec succès - has successfully completed
Research Ethics Evaluation
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
preantha reddy
a complété avec succès - has successfully completed
Informed Consent
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
preantha reddy
a complété avec succès - has successfully completed
Good Clinical Practice (GCP-E6(R2) 2016)
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
Mary Ann Jarvis
a complété avec succès - has successfully completed
Good Clinical Practice (GCP)
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
August 1st, 2017
[redacted]
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
TRREE
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
Mary Ann Jarvis
a complété avec succès - has successfully completed
Good Clinical Practice (GCP)
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
August 1st, 2017
[redacted]
FMH
FPH


Zertifikat
Certificat
Certificado
Certificate
Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
Mary Ann Jarvis
a complété avec succès - has successfully completed
Good Clinical Practice (GCP)
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
August 1st, 2017
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH
Ce programme est soutenu par - This program is supported by :


Zertifikat
Certificat
Certificado
Certificate
Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
Mary Ann Jarvis
a complété avec succès - has successfully completed
Good Clinical Practice (GCP)
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
August 1st, 2017
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH
Ce programme est soutenu par - This program is supported by :


Zertifikat
Certificat
Certificado
Certificate
Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
olivia baloyi
a complété avec succès - has successfully completed
Research Ethics Evaluation
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
August 1, 2017
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH
Ce programme est soutenu par - This program is supported by :


Zertifikat
Certificat
Certificado
Certificate
Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants
Clinical Trials Centre
The University of Hong Kong
Certificat de formation - Training Certificate
Ce document atteste que - this document certifies that
Mary Ann Jarvis
a complété avec succès - has successfully completed
Informed Consent
du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation
[redacted]
August 1, 2017
Professeur Dominique Sprumont
Coordinateur TRREE Coordinator
FMH
FPH
Ce programme est soutenu par - This program is supported by :

APPENDIX 11: KZNDOH APPROVAL LETTER

health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 330 Langalibalele Street, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 2805/ 3169/ 3123 Fax: 033 394 3782
Email:
www.kznhealth.gov.za

DIRECTORATE:
Health Research & Knowledge Management

NHRD Ref No.: Kz_202001_007

Dear Ms P. Reddy
UKZN

Approval of research

1. The research proposal titled **'Identifying contributory factors to adolescents' late utilization of antenatal care at primary health care clinics in a sub-district north of eThekwini district, South Africa'** was reviewed by the KwaZulu-Natal Department of Health.

   The proposal is hereby **approved** for research to be undertaken at Inanda, KwaMashu, Newtown A, Phoenix and Tongaat CHC; Starwood, Amaoti, Qadi, Lindelani, Sivananda, Maphephetheni, Ntuzuma and Oakford clinic

2. You are requested to take note of the following:
   a. Kindly liaise with the facility manager BEFORE your research begins in order to ensure that conditions in the facility are conducive to the conduct of your research. These include, but are not limited to, an assurance that the numbers of patients attending the facility are sufficient to support your sample size requirements, and that the space and physical infrastructure of the facility can accommodate the research team and any additional equipment required for the research.
   b. Please ensure that you provide your letter of ethics re-certification to this unit, when the current approval expires.
   c. Provide an interim progress report and final report (electronic and hard copies) when your research is complete to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

[redacted] 23/01/2020

Dr E Lutge
Chairperson, Health Research Committee

Fighting Disease, Fighting Poverty, Giving Hope

APPENDIX 12: BREC APPROVAL LETTER

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

04 February 2020

Miss Preantha Reddy (209521513)
School of Nurs & Public Health
Howard College

Dear Miss Preantha Reddy,

Protocol reference number: BREC/00000363/2019 Project title: Identifying contributory factors to adolescents late utilization of antenatal care at Primary Health Care Clinics in Sub District North of eThekwini District, South Africa.
Degree Purposes: Masters

EXPEDITED APPLICATION: APPROVAL LETTER

A sub-committee of the Biomedical Research Ethics Committee has considered and noted your application.

The conditions have been met and the study is given **full ethics approval** and may begin as from 04 February 2020. **Please ensure that outstanding site permissions are obtained and forwarded to BREC for approval before commencing research at a site.**

This approval is valid for one year from **04 February 2020.** To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **noted** by a full Committee at its next meeting taking place on **10 March 2020.**

Yours sincerely

[redacted]

Prof V Rambiritch
Chair: Biomedical Research Ethics Committee

Biomedical Research Ethics Committee
Prof V Rambiritch (Chair)
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Website: http://research.ukzn.ac.za/Research-Ethics/

APPENDIX 13: CERTIFICATE FROM EDITOR

Proofreading & Language Editing Services

59, Lewis Drive, Amanzimtoti, 4126, KwaZulu Natal

Cell: [redacted] **E-mail:** [redacted]

Work Certificate

To	Ms. P. Reddy
Address	School of Nursing and Public Health, University of KwaZulu Natal
Date	10/06/2020
Subject	Identifying the contributory factors to adolescents late utilisation of Antenatal Care in the Sub District North of eThekwini
Ref	PR/GS/02

I certify that I have edited the following for language, grammar and style,

Chapters 1to 5: Identifying the contributory factors to adolescents' late utilisation of Antenatal Care in the Sub District North of eThekwini, by P. Reddy,

to the standard as required by the University of KwaZulu Natal.

Gill Smithies

There are no sources in the current document.