

**RISK FACTORS ASSOCIATED WITH TEENAGE PREGNANCY AT
GA-DIKGALE VILLAGES IN THE NORTHERN PROVINCE OF SOUTH
AFRICA**

By

RAMBELANI NANCY MALEMA

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SUPERVISOR: PROF CAREL IJSSELMUIDEN

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Abstract

Aim: The overall aim of the study was to determine the risk factors associated with teenage pregnancy in Ga-Dikgale.

Objectives: To determine whether the following risk factors were associated with teenage pregnancy:

- * Socio-demographic characteristics of teenagers and of their parents;
- * Knowledge, attitudes and practices (KAP) concerning sexuality and contraception;
- * Possible constraints/obstacles surrounding the utilisation of contraception.

Design: Community-based case-control study.

Participants: Teenagers resident at Ga-Dikgale villages, who were between 15 and 19 years of age.

Setting: Ga-Dikgale villages in the Northern Province of South Africa.

Methods: Two hundred and eighty- three teenagers between the ages of 15 and 19 years were interviewed in their homes over a period of 2 months using a structured questionnaire with both open and closed-ended questions. Of the 283 interviewed, 67 had been pregnant and were described as “ever pregnant” and classified as “cases.” Two hundred and sixteen had never been pregnant and were described as the “never pregnant” and classified as “controls.”

Results: Pregnancy was found to be associated with the following risk factors:

- * Highest educational standard achieved by the study subject

(OR=0.7; 95% CI 0.5-0.9). The higher the educational standard achieved the lower the chances of pregnancy.

- * Currently having a boyfriend (OR=5.4; 95% CI 1.5-19.7). Study subjects who had boyfriends were far more likely to have become pregnant than those who did not have a boyfriend.
- * The age at which study subjects believed other girls in the village first had sexual intercourse (OR=0.4; 95% CI 0.2-0.9). The higher the age at which sexual intercourse was believed to have first taken place, the less likely it was that the study subject had ever been pregnant. “Never pregnant” study subjects believed that one’s first sexual intercourse should take place later.
- * Study subjects who believed that their friends had had sexual intercourse were far more likely to have been pregnant (OR=2.8; 95% CI 1.0-7.5).

Conclusions:

- * Almost all teenagers (97.8%) were sexually active and more than half (56.2%) had had sexual intercourse before the age of 15 years. A fifth of the teenagers (19.5%) reported that sexual intercourse was forced on them, mostly by boyfriends, relatives or someone they knew.
- * There is a high prevalence of teenage pregnancy at Ga-Dikgale: 67 out of 283 teenagers (23.7%) were or are pregnant. This may be partly responsible for the high school dropout rate.
- * The most important risk factors for teenage pregnancy were low educational level, having a boyfriend, believing other girls engaged in sex for the first time at an early age and perceiving that friends were sexually active.
- * Development of rural communities will be severely hampered if teenagers are not educated on sexuality matters, are not

empowered to refuse sex, and do not have access to contraceptive services.

Recommendations: *

Incorporation of sexuality education in the school curriculum, involvement of parents in sexuality education, improvement of contraceptive accessibility and education of teenagers about assertiveness and human rights.

Samevatting

- Doel:** Die oorhoofse van die studie was om die risiko-faktore wat ge-assosieer was met tiener swangerskappe in Ga-Dikgale, te bepaal.
- Doelstellings:** Om vas te stel of die volgende potensiële en werklike risiko-faktore wel van toepassing was op tiener swangerskappe:
- * Die sosio-demografiese van tieners en hul ouers;
 - * Kennis, houding en praktyke rakende seksualiteit en voorbehoeding;
 - * Die moontlik beperkings/hindernisse wat die gebruik van voorbehoedmiddels tot gevolg het.
- Ontwerp:** Gemeenskapsgebaseerde gevalle-kontrole studie.
- Deelnemers:** Tieners woonagtig te Ga-Dikgale-dorpe wat tussen die ouderdom van 15 en 19 jaar is.
- Plek:** Ga-Dikgale-dorpe in die Noordelike Provinsie van Suid-Afrika.
- Metode:** Daar is onderhoude gevoer met tweehonderd drie en tagtig tieners tussen die ouderdomme van 15 en 19 jaar in hul huise tydens 'n periode van 2 maande, deur van 'n gestruktureerde onderhoudshulpmiddel met beide ope en geslote vrae, gebruik te maak. Van 283 waarmee onderhoude gevoer is, was 67 vantevore swanger en was hulle beskryf as “altyd swanger” en as gevalle geklassifiseer. Tweehonderd en sestien was nog nooit swanger nie en is as “nooit swanger” beskryf en geklassifiseer as die kontrole-groep.
- Resultate:** Die volgende risiko-faktore was gevind as verbandhoudend met

swangerskap:

- * Hoogste opvoedkundige standaard deur die proefpersoon bereik (OR=0.7; 95% CI 0.5 -0.9) Hoe hoër die opvoedkundige standaard bereik, hoe laer die kans vir swangerskap.
- * Het tans 'n kêrel (OR=5.4; 95% CI 1.5 -19.7). Proefpersone wat kêrels gehad het, het 'n baie groter waarskynlikheid tot swangerskap getoon as diegene wat sonder kêrel was.
- * Die ouderdom wat proefpersone gemeen het dat ander meisies in die dorp hul eerste seksuele omgang gehad het (OR=0.4; CI 0.2 -0.9). Hoe hoër die ouderdom waarby die eerste seksuele omgang plaasgevind het geskat is, hoe laer die waarskynlikheid dat die proefpersoon ooit swanger was. "Nooit swanger" proefpersone glo dat 'n mens se eerste seksuele omgang later moet plaasvind.
- * Die waarskynlikheid dat proefpersone wat geglo het dat hul vriende reeds seksuele omgang gehad het, reeds swanger was, was baie groter (OR=2.8; 95% CI 1.0 -7.5).

Gevolgtrekkings:

- * Byna alle tieners (97.8) was seksueel aktief en meer as die helfte (56.2) het reeds seksuele omgang gehad voor die ouderdom van 15 jaar. 'n Vyfde van die tieners (19.5) het aangedui dat seksuele omgang onder dwang plaasvind het, meesal deur kêrels, naasbestaandes of iemand wat hulle geken het.
- * Daar is 'n hoë voorkoms van tiener swangerskappe in Ga-Dikgale: 67 uit 283 tieners (23.7) was of is swanger. Dit kan gedeeltelik verantwoordelik gehou word vir die hoë skoolverlaterstempo.
- * Die mees belangrike risiko-faktore vir tiener-swangerskappe was 'n lae opvoedkundige vlak, om 'n kêrel te hê, om te glo dat

ander meisies reeds op vroeë ouderdom vir die eerste keer seksueel verkeer het en om die persepsie te handhaaf dat hul vriende seksueel aktief is.

- * Die ontwikkeling van plattelandse gemeenskappe word aan bande gelê as tieners nie rakende seksualiteits-aspekte opgevoed word nie, as hulle nie bemagtig word om seksuele omgang te weier nie en as hulle nie toegang tot voorbehoedende dienste het nie.

Aanbevelings:

- * Inkorporering van geslagsopvoeding in die skoolleergang, betrokkenheid van ouers by geslagsopvoeding, verbetering van toegang tot voorbehoedmiddels en opvoeding van tieners rakende hul selfgeldingsdrang en mense-regte.

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List of abbreviations

The following abbreviations are used in this study:

AIDS	:	Acquired immuno-deficiency syndrome
AME	:	African Methodist Episcopal Church
CIN	:	Cervical intra-epithelial neoplasm
HSDUW	:	Health Systems Development Unit University of Witwatersrand
HIV	:	Human immuno-deficiency virus
IPHC	:	International Pentecostal Holy Church
KAP	:	Knowledge, attitudes and practices
MEC	:	Member of executive council
NGO	:	Non-Governmental Organisation
NUFU	:	Norwegian University Funding
RDP	:	Reconstruction and Development Programme
STDs	:	Sexually transmitted diseases
UNHPAG	:	University of the North Health Promotion Action Group
ZCC	:	Zion Christian Church

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- * The parents who allowed me to interview their daughters and the teenagers who made themselves available for the interview.
- * My family for inspiring me to complete this dissertation.
- * Almighty God who gave me strength from day to day.

Dedication

I dedicate this work to my late mother who passed away on 18 August 1996.

Declaration

“I declare that this dissertation, which I submit for the degree of Master of Science in Community Health at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at another university”.

N. Malema

Rambelani Nancy Malema.

CHAPTER 1

1.1 Introduction

Teenage pregnancy is a worldwide problem affecting both developed and developing countries. “Internationally the USA is quoted as having the highest teenage pregnancy rate of any Western nation, with a 95/1000 estimated incident... Great Britain and Canada lie in second and third places with an estimated 45 per 1000 teenage births.”¹ Teenage birth rates per thousand seem to be higher in 11 sub-Saharan countries than in developed countries (see Figure 1).²

Studies conducted at different hospitals and schools show that teenage pregnancy is common in South Africa as well. It has been reported that “of the 20 590 deliveries at the Paarl Hospital in the Cape Province, from the beginning of 1973 to 1983, 6 284 (30.5%) of them involved teenagers 16 years of age or younger.”³ The prevalence of adolescent pregnancy in 26 high schools in the Eastern Cape was 31.3% in 1996.⁴ At the St.Peter’s Clinic in Winterveldt in the Northwest Province, it was found that of the 202 pregnant clients seen over a period of five months 62 (30.7%) were teenagers of 19 years of age and younger.⁵ At Tintswalo Hospital, in the Northern Province, 25% of the hospital deliveries in 1989 involved teenagers,⁶ while at Dr Machupe Mphahlele Memorial Hospital 288 of the 1000 deliveries (28.8%) recorded between June and July 1995 involved teenagers.⁷

The prevalence of teenage pregnancy at Ga-Dikgale village where this research was conducted, did not seem any different. Mr G Mamabolo, the principal of Phiri-kolobe High School in the village, reported that 75% of 120 female matric pupils were already mothers (Mr G Mamabolo, personal communication). A demographic study conducted at Ga-Dikgale found that 18% of teenagers between 12 and 19 years were already mothers and that by age 19 years 40% were already mothers.⁸

1.2 Background and problems related to teenage pregnancy

1.2.1 Medical complications of teenage pregnancy

1.2.1.1 Cervical intra-epithelial neoplasia and cervical cancer

Engaging in sex at an early age predisposes teenagers to cervical intra-epithelial neoplasia (CIN). Biopsy in cases of all grades of CIN suggest a prevalence rate of 133/1000 in the teenage

population in the United States of America which has the highest prevalence rate of any age group above the age of 19 years.⁹ The risk of developing carcinoma of the cervix is twice as high in women who began sexual activity before the age of 16 years than in women who started after 16 years of age.¹⁰

1.2.1.2 Maternal health problems

There is evidence that teenagers who carry their pregnancy to term are more likely to develop complications of pregnancy and delivery such as eclampsia, anaemia, obstructed labour, post partum haemorrhage,¹¹ and vesicovaginal fistula.^{12,13} Vesicovaginal fistula is common among teenagers especially in girls who have undergone the traditional practice of gishiri cutting in Northern Nigeria, which is the cutting of the anterior vagina with a razor blade to treat conditions such as obstructed labour, infertility, dyspareunia, amenorrhoea, goitre, backache, and dysuria.¹³ Teenagers are almost three times more likely to die from complications of childbirth than older women because they have not reached full physical and psychological maturity.^{14,15} At Obafemi Awolowo University Hospital in Nigeria, 35% of the maternal deaths, excluding abortions, are in women 20 years of age and younger.¹⁴ Failure to seek care is at least partly responsible for the elevated maternal and perinatal morbidity and mortality rate in teenagers.¹⁶ By contrast, a study conducted in the Transkei in South Africa found that age did not confer an increased obstetric risk amongst teenagers between the age of 16 years and younger as compared to woman aged 20-29 years.¹⁷

1.2.1.3 Child health problems

Teenage pregnancy does not pose a danger to the teenagers only but also to their babies because the infant mortality and morbidity rate of children born to women less than 20 years of age is higher than in women of older age groups.¹⁶ Teenage births have a greater risk of producing distressed infants,¹⁴ infants with a low APGAR score,¹⁸ prematurity and low intelligence quotients.¹⁹

1.2.2 Psycho-social and socio-economic problems caused by teenage pregnancy

The younger a woman is when she has a child, the shorter is her scholastic career, leading to socio-economic deprivation.^{19,20,21} The teenager suffers enforced dependence on others because she cannot support herself and her child.^{20,21,22,23} In addition, the pregnant teenager has to decide

whether to abort or continue the pregnancy.^{22,23} Either option poses psychological problems.²⁴

1.2.3 Family influence on teenage pregnancy

Evidence suggests that teenagers who fall pregnant often come from one-parent households or from two-parent households in which a remarriage, by either the mother or father or both has taken place.^{25,26} The higher the level of parental education, the greater the likelihood that career and education goals will be highly valued by parents and daughters.²⁶ Teenagers from educated parents postpone pregnancy as this may interfere with their completion of schooling.²⁵

1.2.4 Knowledge, attitudes and practices (KAP) concerning sexuality

Some teenagers do not believe that the initial sexual encounter can result in pregnancy and others think that they are somehow not vulnerable to falling pregnant despite the fact that they are sexually active.^{26,27} Teenagers often lack an understanding of the relationship between menstruation, sexual intercourse, fertility and conception.^{28, 29}

It has often been recommended that sex education should be started as early as 10 years because close to 35% of teenagers have already experienced sexual intercourse before the age of 14 years and 60% between the ages of 14 and 16 years.²⁷ In a survey conducted in the Transkei in 1996, 63.5% of female teenagers and 76.1% of male teenagers aged 13 years were already sexually experienced.⁴ The early age of engaging in sexual intercourse may be attributed to the early menarche because teenagers who experienced early menarche are twice as likely to have intercourse by age 16 years and experience pregnancy by age 18 years than are teenagers who have a later menarche.³⁰

Teenagers receive sexual knowledge from peers.^{27,28} But receiving sexual information from peers increases the teenagers' involvement in premarital sexual intercourse when compared with teenagers who receive it from parents, relatives, clergymen, teachers, doctors and the media. Therefore the accuracy of the information is doubtful.^{24,27}

1.2.5 Knowledge, attitudes and practices concerning contraception

Although adolescents are aware of contraceptives, very few use them^{31, 32, 33,34,35 ,36} even if they are sexually active.²⁶ Those who do use them do so only after they have been sexually active for a

long time. The stage of cognitive development,^{35,36} the level of education³⁷ and the motivation towards contraceptive use³⁵ were found to be factors influencing teenagers' decision to use contraceptives.

1.2.6 Possible constraints on the utilization of contraceptives

Unmarried teenagers are often too embarrassed or frightened to go to a clinic to seek contraceptive services especially in traditional societies where virginity before marriage is emphasised.² In many countries such as Bangladesh, Indonesia, Iraq, Mauritania and Suriname, teenagers are barred by law from accessing contraceptives.² In other countries parental consent is required for teenagers of a particular age to access contraceptives. The age limit in Austria is 14 years, in Germany and Zaire 15 years, in Barbados, Dominica and the Zlovak Republic 16 years and in Chad, Mozambique, Poland and Turkey 18 years.² Up to 1991, the law in South Africa prohibited giving contraceptives to young people under the age of 18 years unless they had consent from their parents or guardians.³⁸ The amendment of the Child Care Act in 1991 authorised nurses and doctors to provide teenagers of 14 years and older with contraceptives but within the context of counselling and involvement of parents or guardians.³⁸

Accessibility to contraceptives is further reduced by the fact that health service facilities often have restricted opening hours, dispense condoms at specific times, offer a specific number (not more than 10), offer little privacy, and have a nursing staff with a negative attitude towards teenagers who ask for contraceptives.^{39,40}

1.2.7 Intervention strategies in teenage pregnancy

Sex education may promote teenage pregnancy instead of reducing it.⁴¹ Studies which have analysed the content of sex information and students' views of it have found that emphasis was placed on the biological aspects of sexuality without discussing contraceptives, and that information often came after teenagers had already had sexual intercourse.⁴² By contrast, school-based sex education and clinics, though not favoured by parents, have been credited with improving students' health, lowering birth rates, increasing the level of contraceptive use and improving school attendance.⁴³

1.3 Motivation for the study

The lack of data on the risk factors associated with teenage pregnancy in South Africa in general, and in the Northern Province in particular, the fact that many studies were conducted on teenage scholars and the need to formulate functional intervention strategies in addressing teenage pregnancy led to this case-control community-based analytic study. In this study both teenage scholars and non-scholars were included. This study also included teenagers who were pregnant at the time of the study, who had had a miscarriage, were mothers and those who had never been pregnant.

1.4 Research question

What are the risk factors leading to teenage pregnancy in Ga-Dikgale villages?

1.5 Relevance of the study

1.5.1 Government and Ga-Dikgale community

Reproductive health has been declared a high priority by the Northern Province Member of the Executive Council for Health. It forms part of the Reconstruction and Development Programme and it is one of the Presidential Lead Projects in South Africa. This study will therefore add to our understanding of one of the major problems in reproductive health, and hopefully assist in improving both the health and education of young women in the Northern Province.

1.5.2 University of Pretoria and the University of the North

The Department of Community Health at the University of Pretoria may receive credit through the publication of this study, and the research capacity in the historically disadvantaged University of the North will be enhanced by it. Furthermore the results of this study can form the basis for future research by other students, especially those at the University of the North.

1.6 Aim

The overall aim of the study was to determine the risk factors associated with teenage pregnancy in Ga-Dikgale.

1.7 Specific objectives

To determine the contribution of the following risk factors for teenage pregnancy:

- 1.7.1 Socio-demographic characteristics of teenagers and their parents.
- 1.7.2 Knowledge, attitudes and practices (KAP) of teenagers about sexuality and contraception.
- 1.7.3 Possible constraints or obstacles in respect of utilization of contraceptives.

1.8 Definition of terms

1.8.1 Teenager

For this study a teenager is defined as a girl between the ages of 15 and 19 years (inclusive).

1.8.2 “Never pregnant” teenager

A teenager who has never been pregnant.

1.8.3 “Ever pregnant” teenager

A teenager who was once pregnant, who is currently pregnant, has a baby, or has had a miscarriage.

1.8.4 Menarche

The first menstrual period.

1.9 The study area

This study was conducted at Ga-Dikgale villages, which are situated 15 kilometres from the University of the North and 40 kilometres north-east of Pietersburg. It is a rural settlement, where the dwelling units consist of a mixture of shacks, traditional mud huts and conventional brick houses (for a map of the area see Appendix 2).

1.9.1 The population

Ga-Dikgale has a total population of 8071 people and covers an area of 71 square kilometres, giving a population density of 112 persons per square kilometre.⁸ The population decreases with age for both males and females.⁴⁴ Males are more numerous than females from birth to 19 years; thereafter the female population increases proportionately more than the male population and by the age of 60 years the female population is twice that of the male population⁴⁴ (see Table 1 next

page for population composition).

Table 1: Population composition of Ga-Dikgale⁴⁴

Age Group	Males	%	Females	%
0-9	1125	13.9	1066	13.2
10-19	935	11.6	904	11.2
20-29	691	8.6	740	9.2
30-39	469	5.8	477	5.9
40-49	290	3.6	320	4.0
50-59	202	2.5	247	3.1
60-69	92	1.1	223	2.8
70-79+	95	1.2	195	2.4
Total	3899	48.3	4172	51.8

1.9.2 Health services

There is one clinic staffed by two registered nurses and a cleaner in Ga-Dikgale. The clinic hours are from 08h00 to 16h30 from Mondays to Fridays.⁸ The furthest house in Ga-Dikgale is eight kilometres from the clinic.⁸ The clinic only provides primary health care and complicated cases and emergencies are referred to Mankweng Hospital which is 15 km away.⁸

1.9.3 Employment opportunities

Due to lack of employment opportunities in the surroundings of Ga-Dikgale, 40% of the males and 25% of the females are migrant workers returning home only weekly or monthly.⁸

1.9.4 Education

There are four primary schools with a combined enrollment of 1778 pupils and three secondary schools with 1593 pupils. Most children attend primary school but few proceed to matriculation.⁸ In all the schools, classrooms are overcrowded and none of the schools has electricity or water.⁸

1.9.5 Initiation schools (Dikoma)

In the past “initiation schools” were held for both boys and girls every year. The purpose of these schools was to provide young adults with life skills for coping in traditional society. As society is changing, initiation schools have become less popular. The last initiation school in Ga-Dikgale for

girls was held in 1988 and for boys in 1995 (personal communication from the study field workers). It seems that the community is no longer interested in this traditional institution. Most males will go to a hospital or to private practitioners for circumcision. There is no alternative for women.

1.9.6 Water supply

A few households have water taps in their yards but most households fetch their water in containers from communal taps situated at strategic points in the villages, from boreholes or from open dams which are also used by animals (personal communication from the study field workers).

1.9.7 Sanitation

About three quarters of households have a pit latrine and the others have no sanitary facilities. No organised refuse collection facility is available. Household refuse is disposed in holes dug in the yards or is carried to a nearby open field (personal communication with the study field workers).

1.9.8 Electricity supply

Less than 1% of households have electricity.⁸ Paraffin stoves and open wood fires are used for cooking either inside or outside the dwelling.⁹

CHAPTER 2

2.1 Pilot Study design

2.1.1 The training of field workers

The field workers who conducted both the pilot and the main study were four in number, two males and two females, and all were residents of Ga-Dikgale villages. The field workers were hired in 1995 to collect data for the Ga-Dikgale demographic study performed by the University of the North Health Promotion Action Group (UNHPAG). They were trained by the Health Services Development Unit of the University of the Witwatersrand (HSDUW) in Agincourt for a period of two weeks. Their training included the following topics: Interviewing, completing questionnaires and consent forms, ethical aspects of data collection, and the use of household maps. Thereafter, the trainer from the HSDUW spent a week collecting data with them at Ga-Dikgale as part of the pilot study. In addition, for this study the field workers were trained for another two weeks. The training included role plays, explanation of medical terms, and translation of questions from English into Northern Sotho. The field workers were thoroughly guided on how to complete the questionnaire as well as the consent form. They were also informed that the responses were going to be checked on a daily basis to reduce misunderstandings. The field workers were shown how to operate their tape recorders.

2.1.2 Sampling

All teenagers who visited the clinic for any service and were 13 to 19 years of age were to be interviewed.

2.1.3 Data collection

2.1.3.1 The questionnaire

A structured questionnaire was designed using material from previously used questionnaires relevant to the study area⁴⁴ and in consultation with an expert in this field (Sundby J).

The questionnaire was divided in two parts. The first part of the questionnaire had 32 closed-ended questions. Twenty six questions focussed on the socio-demographic characteristics of the respondents and their parents and six questions on the respondent's reproductive history. The second part of the questionnaire had 55 closed-ended and open-ended questions. Six questions

focussed on health care services, 12 on reproductive health information, 24 on (KAP) concerning sexuality and 13 on the possible obstacles to the utilization of contraceptives.

2.1.3.2 Ethical considerations

Written permission to conduct both the main and the pilot research project was obtained from the University of Pretoria Ethics Committee (approval number 149/97), the Superintendent General Department of Health and Welfare Northern Province and the Lowveld Regional Director (see Appendix 5 for letters of permission).

No names were recorded on the interview forms. Subjects were interviewed in private and of their own free will and were told that they were free to withdraw at any time during the interview or remain silent if they did not feel like responding to a question.

2.1.3.3 Quality control

The researcher gave each field worker a chance to sit with her during one interview and she allowed them to comment afterwards. Thereafter, the researcher sat in with every field worker during two interviews to monitor the interviewing technique, the accuracy of asking questions, and the filling in of the responses. Every afternoon the researcher checked all the forms and where there were problems, these were discussed the following morning with field workers before proceeding further with data collection.

2.1.4 Outcome of the pilot study

A total of 100 teenagers were interviewed over a week in the middle of September 1997 at Mankweng Clinic, which is not part of the study area. All the teenagers interviewed objected to the use of a tape recorder. The 13 and 14 year-old teenagers did not respond to most of the questions on sexuality information and some even laughed when asked about this. The field workers also indicated that the 13 and 14 year-old teenagers appeared very shy.

The responses to questions were checked by the researcher daily and some of the questions were removed because they were found to be ambiguous, vague, irrelevant to the topic and confusing to the subjects and even to the field workers (see Appendix 2 for the pilot questionnaire).

CHAPTER 3

3.1 Design of the main study

3.1.1 The training of field workers

The same field workers who participated in the pilot study also participated in the main study. Therefore they were already trained and were familiar with the interviewing tool.

3.1.2 The questionnaire

The questionnaire was divided in two parts. The first part of the questionnaire had 26 closed-ended questions. Nineteen questions focussed on the socio-demographic characteristics of the respondents and their parents and seven questions on the respondents' reproductive history. The second part of the questionnaire had 42 closed-ended and open-ended questions. Five questions focussed on health care services, nine on reproductive health information and fifteen on (KAP) concerning sexuality and 13 on the possible obstacles to the utilization of contraceptives.

3.1.3 The target population

Based on the poor response to sexual information questions and the shyness observed during the pilot study amongst the old study subjects who were 13 and 14 years, the target population was redefined to include only girls between the ages of 15 to 19 years.

3.1.4 Sampling

The computer print-out obtained from the UNHPAG demographic study in 1996 indicated that the total number of teenagers between the ages of 15 and 19 years in Ga- Dikgale was 419. All were included in the study for fear that the cases might not be sufficient.

3.1.5 Exclusion criteria

In households with more than one teenager only one teenager was interviewed. Teenagers who attended school outside Ga- Dikgale and only came back during the school vacation and those who were deaf and dumb, were not interviewed.

3.1.6 Data collection

All households with teenagers were identified from UNHPAG's computer print-out. Maps with

all the households at Ga-Dikgale were obtained from the UNHPAG. Households with study subjects were marked using the computer print-out. The allocation of field workers to the households was done randomly every morning taking care that long walking distances were avoided.

Each teenager was interviewed at home for about 45 minutes using the structured interview tool.

A total of 43 households had two teenagers and two households had three teenagers. In such households only one teenager was interviewed because teenagers in the same household would be similar in many respects, such as their socio-economic status. The teenager to be interviewed was selected randomly by flipping a coin.

Fifty seven teenagers were attending school elsewhere and therefore could not be interviewed because they only came home during the school vacation.

Three households with teenagers had relocated.

One teenager could not be interviewed because she could neither talk nor respond to questions.

Twenty-one teenagers refused to participate in the study.

Seven teenagers were visited three times but could not be found although an appointment had been made for each visit.

A total of 311 teenagers were eligible to participate in the study. A total of 283 teenagers were interviewed. The response rate was thus 91.0% (see Appendix 1 for flow diagram for final study sample).

Data collection took about two months, from 20 September 1997 to 15 November 1997.

3.1.7 Control of bias

3.1.7.1 Interviewers

The field workers were trained for two weeks in the pilot study and they also participated in the main study.

3.1.7.2 Selection bias

There was a selection bias because 57 teenagers who were at school elsewhere could not be interviewed. In households where there was more than one teenager only one was interviewed. It is unclear if and in what way, these exclusion criteria could have influenced the results of the study.

3.1.8 Ethical considerations

Permission to conduct the research was obtained from the Gauteng Province Ethics Committee, the Superintendent General Department of Health and Welfare Northern Province, and the Lowveld Regional Director. Before each interview the informed consent letter was read to obtain signed approval from the client or client's guardian/parent if below eighteen years (see Appendix 6 for consent letters).

No names were recorded on the interview forms but household and identity numbers unique to each client were used.

To ensure privacy, family members of the clients were asked not to be present during the interview.

3.1.9 Limitations

Study subjects who were attending school elsewhere could not be interviewed because they only came home during the holidays. It is not known if their inclusion would have produced different results. However, if it is assumed that the parents of teenagers who studied outside Ga-Dikgale came from a higher socio-economic background and given that a higher socio-economic status protects girls against falling pregnant, it is quite possible that the study underestimates the real risk of socio-economic factors in Ga-Dikgale.

Some of the questions in the questionnaire were apparently very sensitive and some teenagers did not respond to such questions. A self-administered questionnaire could have been used to improve confidentiality and response to sensitive questions but the generally poor response to self-administered questionnaires made the researcher decide on an interview. Another problem with the questionnaire that was used was that it was prepared in English. Most teenagers have problems with English because it is not their mother tongue but the use of Northern Sotho would probably have been more problematic due to the lack of a vocabulary concerning the substance of the study.

The field workers were not qualified to perform an abdominal examination if pregnancy was suspected. They were supposed to refer such cases to the researcher. No study subject was referred to the researcher for an abdominal examination.

Recall could be seen as another limitation because study subjects were asked about something which had already happened.

CHAPTER 4

4.1 Data analysis

Data analysis was carried out using the following software statistical packages: SAS and Stata (for multiple logistic regression modelling). Assistance with data analysis was obtained from Mr Jonathan Levin of the Medical Research Council in Pretoria.

Potential risk factors were examined by means of 2-way tables and Chi-square statistics were calculated. However, one should be cautious in interpreting these results for two reasons:

1. Since many tests were done, there is a high probability of committing a type I- error (i.e. finding a “false positive” association).
2. These 2-way tables ignore all other confounding factors.

The final risk factors were identified through fitting multiple regression models which controlled for confounding variables and also avoided the problems related to multiple testing.

4.2 Results

The results are divided into three sections. The first section describes the teenagers’ socio-demographic characteristics and those of their parents; their knowledge, attitudes and practices (KAP) concerning sexuality and the possible obstacles to the utilization of contraceptives.

The second part explores the association between potential risk factors and teenage pregnancy.

In the third part, multivariate logistic regression models were fitted to assess the most important risk factors for teenage pregnancy.

4.2.1 Section 1

This section describes the teenagers’ socio-demographic characteristics and those of their parents, their KAP concerning sexuality and the possible obstacles to the utilization of contraceptives.

4.2.1.1 Socio-demographic characteristics of study population and their parents

Table 2: Age distribution of study subjects

Age	N	%
15	60	21.2
16	55	19.4
17	59	20.8
18	61	21.6
19	48	17.0
Total	283	100.0

From this distribution, it appears that no age group was significantly under- or over- represented (see Figure 3).

Table 3: The religious denominations of the study subjects

Denomination	N	%
Zion Christian Church	90	32.6
Apostolic	29	10.5
International Pentecostal Church	5	1.8
African Methodist Episcopal	1	0.4
Roman Catholic	4	1.4
Presbyterian	31	11.2
Lutheran	28	10.1
Dutch Reformed	34	12.3
Ethiopian Church of South Africa	2	0.7
None	52	18.8
Total	276	100.0
Response rate for question	276/283	97.5

It is apparent that in the Ga-Dikgale area the main religion is the Zion Christian Church to which a third of all study subjects belong. On the other hand, approximately 19% did not belong to any church.

Table 4: Persons with whom study subjects reside

Person teenager resides with	N	%
Both parents	106	37.6
Mother	93	33.0
Father	6	2.1
Grand parent	40	14.2
Relative	19	6.7
Sibling	18	6.4
Total	282	100.0
Response rate for question	282/283	99.6

Table 4 shows persons with whom teenagers reside in Ga- Dikgale. It is important to note that

only a third live in “traditional” dual-parent households, another third lives in single-parent (mother) households and the rest in a variety of other non-conformist settings.

Table 5: Marital status of parents of study subjects

Marital status	N	%
Married	204	72.3
Divorced	14	5.0
Married separated	4	1.4
Never married	55	19.5
Don't know	5	1.8
Total	282	100.0
Response rate for question	282/283	99.6

The majority of teenagers' parents are married. In view of the responses reflected in Table 4, it is not surprising that only 38% stayed with both parents because most parents are migrant labourers.

Table 6: The educational standard of mothers of study subjects

Mother's education	N	%
Do not know	71	25.4
Never been to school	31	11.1
Completed standard 2	38	13.6
Completed higher primary	118	42.1
Completed high school	12	4.3
Completed tertiary education	9	3.2
Other	1	0.4
Total	280	100.0
Response rate for question	280/283	98.9

The educational status of the mothers of study subjects is low. The first three categories represent “functional illiteracy,” and this applies to just over 50% of mothers in Ga-Dikgale. However, even completion of primary school is no guarantee of functional literacy, so up to 90% of teenagers in

Ga-Dikgale have illiterate or marginally literate mothers.

4.2.1.1.1 Possession of a television set or radio

Of the 283 study subjects interviewed, more than half 157 (55.5%) had a television set and 255 (90.1%) had a radio in their homes.

Table 7: Employment status of mothers of study subjects

Employment status	N	%
Domestic	94	34.4
Skilled	9	3.3
Clerical	4	1.5
Professional	12	4.4
Self-employed/high	3	1.1
Self-employed/low	19	7.0
Not working	124	45.4
Pensioner	6	2.2
Don't know	2	0.7
Total	273	100.0
Response rate for question	273/283	96.5

This table highlights the low socio-economic circumstances in Ga-Dikgale, because close to half of all mothers are unemployed and only 10% will probably earn a reasonable income. However, if we look at another indicator of wealth, i.e. possession of a battery-operated television set and a radio, (because only 1% had electricity) approximately half of the families of teenagers did have a television set and most had a radio.

4.2.1.1.2 Currently in formal education and performance

A large proportion of teenage girls were currently at school: 267/282 or 94.7%. Their performance was however, not good. Of the 283 teenagers interviewed, 196 (69.3%) had repeated at least one year.

4.2.1.2 Sexual knowledge, attitudes and practices

The results below indicate the teenagers' knowledge, attitudes and practices concerning sexuality and the possible obstacles to the utilization of contraceptives.

Table 8: Age at menarche

Age at menarche (years)	N	%	Cumulative frequency	Cumulative percentage
<11	1	0.3	1	0.3
11-12	16	5.7	17	6.0
13-14	129	45.6	146	51.6
15-16	118	41.7	264	93.3
17-18	6	2.1	270	95.4
Not yet started	13	4.6	283	100.0

Over 50% of teenagers had started menstruating by reaching the age of 15 years, while over 93% had started menstruating by the age of 17 years.

4.2.1.2.1 Prior sex information

Approximately half (52.3%) of those interviewed had received information on sex and sexuality.

Table 9: Sources of sex education

Sources	N	%
Primary schools	16	5.7
Secondary schools	109	38.9
Clinics in the community	121	43.2
Hospital out patient department	33	11.8
Other	1	0.4
Total	280	100.0
Response rate for question	280/283	98.9

Table 9 indicates that teenagers seem to prefer receiving sexuality education from clinics in the community and from secondary schools.

4.2.1.2.2 Inclusion of sex education in the school curriculum

The majority of teenagers (82.3%) support the idea of including sex information in the school curriculum.

4.2.1.2.3 Information on menstruation

Although 52.3% stated that they had received sex information (see 4.2.1.2.1), only 38.5% had received information on menstruation. Some of the responses by those who had received information on menstruation showed that their understanding of the process was still incomplete. For example, when asked what they thought menstruation was, some said:

- * “Blood which form baby after sex” (3%);
- * “Dirty blood from the vagina” (6%).

Table 10: Sources of information on menstruation

Sources	N	%
Parent	172	61.0
Health professional	54	19.1
Sibling	40	14.2
Relative	16	5.7
Total	282	100.0
Response rate for question	282/283	99.6

More than half of the study subjects preferred to have menstruation explained by their parents.

4.2.1.2.4 Knowledge about sexual intercourse

Approximately one third (37.2%) of the teenage girls interviewed stated that the first sexual intercourse could result in pregnancy whereas more than half (63.8%) stated that it could not result in pregnancy. The reasons given by those who believed that the first sexual intercourse could not result in pregnancy were:

- * “Because it is the first time” (16%);
- * “First time boy’s blood enters the girl’s womb” (2%);
- * “Since the girl does not sleep around” (7%).

However, there were misconceptions even amongst those who said that the first sexual intercourse could result in pregnancy. This is clear from the following comments given to this question:

- * “Depends on the strength of the boyfriend” (2%);
- * “If the boy has not had sex for a long time” (4%);
- * “If the girl is menstruating” (17%);
- * “Pregnancy occurs every time one has sex” (2%).

Table 11: Knowledge about sexual intercourse

Highest chance of falling pregnant	N	%
On the days of bleeding	48	17.0
A week after bleeding	95	33.6
A week before bleeding	67	23.7
Don't know	72	25.4
Anytime	1	0.3
Total	283	100.0

More than half of the teenagers gave incorrect responses or did not know the period in the menstrual cycle during which a girl had the greatest chance of falling pregnant.

Table 12: Relationship with boys

Age first boyfriend	N	%	Cumulative frequency	Cumulative percent
< 13	4	1.4	4	1.4
13-14	46	16.3	50	17.7
15-16	124	43.8	174	61.5
17-18	40	14.1	214	75.6
Never had a Boyfriend	69	24.4	283	100
Total	283	100.0		

Almost half of the study subjects had their first boyfriend between the ages of 15 and 16 years, and by the age of 18 years, 76% of the study subjects had had a boyfriend.



Table 13: Knowledge about sexual activity of peers

Peers' sexual activity	N	%	Cumulative frequency	Cumulative percent
All	121	42.9	121	42.9
Most	69	24.5	190	67.4
About half	68	24.1	258	91.5
Don't know	17	6.0	275	97.5
Never	7	2.5	282	100
Total	282	100.0		
Response rate for question	282/283	99.6		

This Table shows that 92% of the study subjects at Ga-Dikgale believed that other teenagers were sexually active.

Table 14: Age at first sexual experience

Age (years)	N	%	Cumulative frequency	Cumulative percent
<13	46	16.3	46	16.3
13-14	113	39.9	159	56.2
15-16	83	29.3	242	85.5
17-18	25	8.8	267	94.3
19	10	3.5	277	97.8
Never had Sex	6	2.1	283	100
Total	283	100.0		

By the age of 15 years, more than half (56.2%) of the study subjects had already had sexual intercourse. On becoming 20 years of age virtually everyone (97.8%) had already had intercourse (see Figure 4). The following reasons were given for having sexual intercourse:

- * "To prove love to the boyfriend" (18.0%);
- * "Boyfriend wanted it" (3.5%);

- * “To satisfy boyfriend” (3.2%);
- * “Forced by boyfriend” (8.8%).

Table 15: Appropriate age for sexual experience

Age (years)	N	%	Cumulative frequency	Cumulative percent
<14	22	7.8	22	7.9
15-16	108	38.6	130	46.5
17-18	65	23.2	195	69.7
19-20	31	11.1	226	80.8
>21	54	19.3	280	100
Total	280	100.0		
Response rate for question	280/283	98.9		

Most respondents (69.7%) said that it was acceptable to have sexual intercourse before the age of 18 years. The results reflected in the previous Table show, however, that by the age of 18 years more than 97% had already had sex.

4.2.1.1.5 Forced sexual experience

Of the 283 study subjects, 54 (19.1%) reported that they had been forced to have sex.

Table 16: Forced sexual experience

Person who forced teenager to have sex	N	%
Boyfriend	25	46.3
“Someone else you know”	24	44.4
Father	3	5.6
Unknown person	2	3.7
Total	54	100.0

Of all those who experienced forced sex, the overwhelming majority (96.3%) knew the person who forced them to have sex (see Figure 5).

4.2.1.2.6 Contraceptive awareness and use

Contraceptive awareness and use appeared to be high among the study subjects. Of the 283 interviewed, 182 (63.9%) were aware of contraceptives and 163 (57.6%) had used them before.

Some of the reasons given for not using contraceptives were:

- * “Against the ZCC religion” (32.6%);
- * “Have baby first” (4.2%);
- * “Contraceptives will condemn the body” (13.8%);
- * “Parents will not allow her” (2.8%);
- * “Afraid to go to the clinic” (2.5%);
- * “To prove fertility” (1.1%);
- * “Boyfriend will not allow her” (2.8%).

Table 17: Contraceptives used

Contraceptive	N	%
“Injection”	94	74.6
“Condoms”	14	11.1
“Pills”	9	7.1
“Loop”	6	4.8
“Traditional methods”	3	2.4
Total	126	100.0

The most popular contraceptive was the “injection” which could be Depo-Provera or Nur-Isterate (see Figure 6).

4.2.2 Section 2

This part examines risk factors associated with teenage pregnancy.

4.2.2.1 The association between being “ever pregnant” and the potential risk factors

4.2.2.1.1 Experience with pregnancy

The aim of this question was to find out how many teenagers had been pregnant before. Of the 283 teenagers, 77 (27.2%) did at one stage or another suspect that they were pregnant.

Table 18: Experience with pregnancy

Experience with pregnancy	N	%
Menses resumed	10	13.0
Miscarried	6	7.8
Still pregnant	23	29.9
Had a baby	38	49.3
Total	77	100.0

Sixty seven (23.7%) teenagers had either had a miscarriage, were still pregnant or had had a baby. These are described as “ever pregnant” for purposes of the study, and are classified as cases. Those who had never been pregnant (216) are described as “never pregnant” and classified as controls. The ten girls who had suspected pregnancy before but who proved to be not pregnant

were included in the controls.

Table 19: Association between age and being “ever pregnant”

Age	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
15	3	4.5	57	26.4	60
16	7	10.4	46	21.3	53
17	12	17.9	47	21.8	59
18	20	29.9	42	19.4	62
19	25	37.3	24	11.1	49
Total	67	100.0	216	100.0	283
Chi-square = 37.962 p < 0.001					

Pregnancy was strongly related to the age of the study subject. The older the person was, the more likely she was to have been pregnant. There was a linear relationship between age and pregnancy, increasing with age (see Figure 7).

4.2.2.1.2 Association between living with parents and being “ever pregnant”

The respondents were grouped into those living with parents and non-parents. Both parents, mother and father were grouped as parents; and grandparents, relatives and siblings as non-parent. Of those classified as “ever pregnant” 80.3% (53/66) lived with their parents compared to 71.3% (154/216) of the “never pregnant” (Chi-square=2.101; p=0.147). The association between study subjects living with parents and pregnancy was not statistically significant.

4.2.2.1.3 Association between residing with parents at 10 years of age and being “ever pregnant”

Of those classified as “ever pregnant” 67.7% (44/65) had lived with their parents when they were ten years old compared to 75.2% (161/214) of the “never pregnant” (Chi-square=0.455; p=0.228).

The association between study subjects living with parents at age ten years and pregnancy was not statistically significant.

Table 20: Association between parents' marital status and being "ever pregnant"

Parents' marital status	"Ever pregnant"		"Never pregnant"		Total
	N	%	N	%	
Married	50	74.6	155	72.1	205
Divorced/separated	3	4.5	15	7.0	18
Never married/don't know	14	20.9	45	20.9	59
Total	67	100.0	215	100.0	282
Chi-square = 0.545 p = 0.761					

The association between parents' marital status and being "ever pregnant" was not statistically significant.

Table 21: Association between the mother's education and being "ever pregnant"

Level of education attained by mother	"Ever pregnant"		"Never pregnant"		Total
	N	%	N	%	
Low	34	51.5	108	50.5	142
Medium	28	42.4	89	41.6	117
High	4	6.1	17	7.9	21
Total	66	100.0	214	100.0	280
Chi-square = 0.258 p = 0.879					

For analysis, the education attained by the mother was grouped as follows: Completed high school or completed tertiary education were classified as "high." Completed higher primary was classified as "medium." Below standard 3 and people who had never been to school were classified as "low." The association between maternal education and being "ever pregnant" was not statistically significant.

Table 22: Association between study subjects' level of education and being "ever pregnant"

Highest educational standard passed	"Ever pregnant"		"Never pregnant"		Total
	N	%	N	%	
< Standard 5	10	14.9	30	14.0	40
Standard 6	12	17.9	46	21.4	58
Standard 7	18	26.9	46	21.4	64
Standard 8	16	23.9	48	22.3	64
Standard 9	7	10.4	40	18.6	47
Standard 10	4	6.0	5	2.3	9
	67	100.0	215	100.0	282
Chi-square = 5.229 p = 0.389					

The association between the highest standard of education achieved by study subjects and being "ever pregnant" was not statistically significant.

4.2.2.1.4 Association between being at school at the time of the interview and being "ever pregnant"

Of those classified as "ever pregnant" 5.87% (40/67) were still at school at the time of the interview compared to 84.1% (212/216) of the "never pregnant" (Chi-square=77.5; $p < 0.000$). The association between being engaged in formal education and being "ever pregnant" was statistically significant.

Table 23: Association between age at menarche and being “ever pregnant”

Age at menarche in years	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
<11	1	1.5	0	0	1
11-12	3	4.5	13	6.4	16
13-14	37	55.2	93	45.8	130
15-16	24	35.8	93	45.8	117
17-18	2	3.0	4	2.0	6
Total	67	100.0	203	100.0	270
Chi-square = 5.666 p= 0.226					

There was no significant statistical association between age at menarche and being “ever pregnant.”

4.2.2.1.5 Association between sex information and being “ever pregnant”

Of those classified as “ever pregnant” 47.8% (32/67), had received sex information compared to 52.8% (114/216) of the “never pregnant” (Chi-square=0.515; p=0.473). There was no significant statistical association between having received sex information and being “ever pregnant.”

4.2.2.1.6 Association between sex education in the school curriculum and being “ever pregnant”

Of those classified as “ever pregnant” 88.1%(59/67), supported the inclusion of sex education in the school curriculum compared to 79.6% (172/216) of the “never pregnant” (Chi-square=2.423; p=0.120). There was no significant statistical association between supporting the inclusion of sex education in the school curriculum and being “ever pregnant.”

4.2.2.1.7 Association between information on menstruation and being “ever pregnant”

Of those classified as “ever pregnant” 34.3% (23/67), had received information on menstruation compared to 39.8% (86/216) of the “never pregnant” (Chi-square=0.650; p=0.420). There was no significant statistical association between having received information on menstruation and being “ever pregnant.”

4.2.2.1.8 Association between knowledge about sexual intercourse and being “ever pregnant”

Of those classified as “ever pregnant” 44.0% (29/66), believed that the first sexual intercourse can result in pregnancy compared to 35.0% (72/206) of the “never pregnant” (Chi-square=1.730; $p=0.188$). The association between believing that the first encounter in sexual intercourse can result in pregnancy and being “ever pregnant” was not statistically significant.

4.2.2.1.9 Association between relations with boys and being “ever pregnant”

Of those classified as “ever pregnant” 94.0%(63/67), had boyfriends compared to 65.0% (139/214) of the “never pregnant” (Chi-square=21.345; $p<0.000$). The association between having a boyfriend and being “ever pregnant” was statistically significant. Study subjects who had a boyfriend were at a high risk of falling pregnant.

Table 24: Association between age of boyfriends and being “ever pregnant”

Age of boyfriend	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
15-16	0	0.0	21	14.5	21
17-18	8	12.5	34	23.4	42
19-20	16	25.0	48	33.1	64
>21	35	54.7	38	26.2	73
Don't know	5	7.8	4	2.8	9
Total	64	100.0	145	100.0	209
Chi-square = 25.815 p < 0.001					

There was a statistically significant association between the age of the study subjects’ boyfriend and being “ever pregnant.” The older the boyfriend, the higher the chances of falling pregnant. Amongst the “ever pregnant” none had a boyfriend who was between the ages of 15 and 16 years, possibly indicating that boys start sexual activity at an older age.

Table 25: Association between perceived age of first sexual exposure and being “ever pregnant”

Age (years)	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
<13	18	28.1	27	12.8	45
13-14	27	42.2	86	40.8	113
15-16	15	23.4	67	31.8	82
17-18	1	1.6	24	11.4	25
19	3	4.7	7	3.3	10
Total	64	100.0	211	100.1	275
Chi-square = 13.668 p = 0.008					

Those who were “ever pregnant” generally believed that their peers started sexual activity at a younger age than those who were “never pregnant.” This difference was statistically significant.

Table 26: Association between peers’ perceived sexual behaviour and being “ever pregnant”

Sexually active peers	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
All	46	68.7	74	34.7	120
Most	13	19.4	56	26.3	69
About half	7	10.4	60	28.2	67
Don’t know and never	1	1.5	23	10.8	24
Total	67	100.0	213	100.0	280
Chi-square = 27.054 p <0.000					

The association between the belief that peers are sexually active and being “ever pregnant” was statistically significant. The more the teenagers believed that their friends were sexually active, the higher their chances of falling pregnant.

4.2.2.1.10 Association between own sexual experience and being “ever pregnant”

Of those classified as “ever pregnant” 97.0% (65/67), had had sex compared to 62.5% (135/216) of the “never pregnant” (Chi-square=29.391; $p < 0.001$). The association between having had sexual intercourse and being “ever pregnant” was statistically significant. It was amazing that two of the “ever pregnant” teenagers had never had sexual intercourse.

4.2.2.1.11 Association between forced sexual experience and being “ever pregnant”

Of those classified as “ever pregnant” 19.4% (13/67), had been forced to have sex compared to 19.2% (41/214) of the “never pregnant” (Chi-square=0.002; $p=0.965$). The association between having been forced to have sex and being “ever pregnant” was not statistically significant.

Table 27: Association between forced sexual experience and being “ever pregnant”

Person who forced study subject to have sex	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
Boyfriend	10	76.9	15	36.6	25
Father	0	0.0	3	7.3	3
Someone you know	3	23.1	21	51.2	24
Stranger	0	0.0	2	4.9	2
Total	13	100.0	41	100.0	54
Chi-square = 6.813 p = 0.078					

The association between the person who forced the study subject to have sexual intercourse and being “ever pregnant” was not statistically significant.

4.2.2.1.12 Association between contraceptive awareness and being “ever pregnant”

Of those classified as “ever pregnant” 68.7% (46/67), were aware of contraceptives compared to 62.0% (134/216) of the “never pregnant” (Chi-square=0.969; $p=0.325$). The association between being aware of contraceptives and being “ever pregnant” was not statistically significant.

4.2.2.1.13 Association between contraception use and being “ever pregnant”

Of those classified as “ever pregnant” 52.2% (35/67), had used contraceptives compared to 38.6%

(83/215) of the “never pregnant” (Chi-square=3.902; $p=0.05$). The association between contraception use and being “ever pregnant” was statistically significant.

4.2.2.1.14 Association between contraception and being “ever pregnant”

Of those classified as “ever pregnant” 33.3% (22/66), had no access to contraceptives compared to 37.1% (75/202) of the “never pregnant” (Chi-square=0.310; $p=0.578$). The association between contraceptive accessibility and being “ever pregnant” was not statistically significant

The reasons cited for inaccessibility of contraceptives:

- * “The clinic expects them to start at the doctor first” (1.4%);
- * “To come when they are menstruating” (1.4%);
- * “Boyfriend refused” (2.8%);
- * “Parents refused” (2.8%);
- * “Injection makes me sick” (8.1%);
- * “Contraception will condemn body” (4.6%);
- * “Injection will prevent pregnancy later in life” (3.2%).

4.2.2.1.15 Association between teenage motherhood and being “ever pregnant”

Of those classified as “ever pregnant” 7.5% (5/67), accepted teenage motherhood compared to 2.8% (6/216) of the “never pregnant” (Chi-square=3.004; $p=0.083$). The association between acceptance of teenage motherhood and being “ever pregnant” was not statistically significant.

Table 28: Association between contraception and being “ever pregnant”

Popular contraceptives	“Ever pregnant”		“Never pregnant”		Total
	N	%	N	%	
Injection	27	77.1	65	73.0	92
Pills	1	2.9	8	9.0	9
Condom	7	20.0	7	7.9	14
Traditional methods	0	0.0	9	10.1	9
Total	35	100.0	89	100.0	124
Chi-square = 8.174 p = 0.085					

There was no significant statistical association between the type of contraceptive used and being “ever pregnant.”

4.2.3: Section 3

4.2.3.1 Multiple regression models

In this section, multiple regression models were used to determine which were the main risk factors for teenage pregnancy. The following potential explanatory variables were considered:

- * Interviewer;
- * Age of respondent;
- * Who did you live with;
- * Who did you live with at 10 years;
- * Parents’ marital status;
- * Highest educational level of the mother;
- * Mothers’ type of work;
- * Possession of tv and radio;
- * Highest standard passed;
- * Age at menarche;
- * Ever received sex education;
- * Best place for sex education;
- * Support sex education at school;
- * Ever received information on menstruation;
- * Who should explain about menstruation;

- * Highest chance of falling pregnant in the menstrual cycle;
- * Have a boyfriend;
- * Age teenagers believe peers have sexual intercourse;
- * Peer sexual practices;
- * Ever had sex;
- * Appropriate age for sex;
- * Ever had forced sex;
- * Heard about contraceptives;
- * Contraceptive use;
- * Teenage motherhood.

Model selection was carried out, firstly, by using a stepwise logistic regression model, and then by testing specifically whether factors earlier found important (i.e. in 2-way Tables) should be included.

The results for the final model are summarised in the Table below:

Table 29: Risk factors for teenage pregnancy

Parameter	Odds ratio	Std. Err.	Z	P> z	95% confidence interval	
Interviewer 2 versus interviewer 1	2.0	0.9	1.4	0.2	0.8	5.0
Interviewer 3 versus interviewer 1	1.4	0.8	0.5	0.6	0.4	4.5
Interviewer 4 versus interviewer 1	9.3	7.2	2.9	<0.0001	2.1	42.2
Interview 5 versus interviewer 1	4.6	2.4	3.0	<0.0001	1.7	12.6
Age of study subject	2.2	0.4	5.0	<0.0001	1.6	3.1
Highest school standard passed	0.7	0.1	-3.0	<0.0001	0.5	0.9
Current boyfriend	5.4	3.6	2.6	<0.0001	1.5	19.7
Age peers had first sexual intercourse	0.4	0.2	-2.3	<0.0001	0.2	0.9
Friends' sexual practices	2.8	1.4	2.0	<0.0001	1.0	7.5

Chi square = 84.860 9df p<0.0001

Of the factors included in the model, age and interviewer effects should be regarded as confounding variables, so the odds ratio for these factors should not be interpreted. It is a known fact that, as age increases, so does the risk of pregnancy.

The interviewer effects are all given relative to interviewer one. It is possible that study subjects may be more willing to give information to some interviewers than to others. Possibly female subjects were less likely to confide in male interviewers. This would lead to interviewer effects, but these are obviously not “risk factors.”

Adjusting for age and interviewer effect, the odds that a girl, who currently has a boyfriend was “ever pregnant” was 5.4 (95% confidence interval 1.5; 19.7). The level of education of the teenager and the age at which they believed peers had first sexual intercourse were inversely related to being “ever pregnant.” None of the other risk factors were statistically significant in this model.

CHAPTER 5

5.1 Discussion and implications

5.1.1 Teenage pregnancy rate at Ga-Dikgale

According to the UHPAG demographic data there were 419 teenagers between the ages of 15 and 19 years at Ga-Dikgale villages in 1995, of whom 283 were interviewed. Of those, 67 (23.7%) were pregnant or had been pregnant. This figure could even be higher in reality when one considers that some teenagers could have been hiding the fact that they had been pregnant. This high pregnancy rate, almost a quarter of the teenage population of Ga-Dikgale, is similar to pregnancy rates found elsewhere in South Africa and in Africa at large.^{2,3,4,6,7,8}

The pregnancy rate found in this study is slightly higher than the rate found in the demographic study conducted in 1995 in which 18% of teenagers between the ages of 12 and 19 years were already mothers.⁸ The difference might stem from the fact that in this study, teenagers who were still pregnant, had had a miscarriage or had had babies were included in the numerator whereas in the demographic study, only teenagers who were mothers were included.

5.1.2 Influence of parents' marital status

In this study the parent's marital status had no influence on teenage pregnancy. This is in contrast with findings in which teenagers whose parents were married reported a lower pregnancy rate.^{24,25} This lower pregnancy rate is believed to be due to parental supervision and guidance.²⁵ This difference is possibly caused by the fact that although many parents are married at Ga-Dikgale, many (mothers 25% and fathers 40%) are also migrant workers. Most households are managed by women alone or by relatives.

5.1.3 Scholastic achievement

The failure rate at Ga-Dikgale was high: 69% of the study subjects had repeated a year or more at school. These findings concur with findings in another study conducted in 1997 which found that 67% of teenagers at Agincourt, 70% at Naphuno, and 82% in Sekhukhune/Nebo areas had failed a year at least once.⁴⁶ The above-mentioned areas are all found in the Northern Province of South Africa. Pregnancy is often the cause of repeating a year and of scholastic under-achievement. A large proportion of teenage girls at Ga-Dikgale were at school 267/282 (94.7%). This confirms

what was said by Mr G Mamabolo, the principal of one of Phiri-Kolobe high schools at Ga-Dikgale, who reported that 75% of the female matric pupils were already mothers (Mr G Mamabolo personal communication). Being a mother and scholar at the same time probably is a contributory factor towards the high failure rate.

5.1.4 Religious denomination

There was no relationship between belonging to a religion and pregnancy rate in teenagers. On the other hand, 80% of study subjects said that they belonged to a particular religion. Therefore, churches should be considered as important channels for sex education of teenagers. Not all churches will be equally receptive to this. For example, the ZCC was reported to prohibit contraceptive use but other components of sex education may be acceptable.

5.1.5 Influence of television and radio

This study did not show an influence of possession of a television or radio on teenage pregnancy. Seeing that 90% of the households have a radio, and 56% have a television set both these media could be used for sex education.

5.1.6 Age of study subjects

As age increased the chance of pregnancy increased. This finding is similar to findings in other studies which compared pregnancy rates in teenagers of different age groups in six developed countries: Sweden, England, USA, France, Canada and the Netherlands (see Figures 7 and 8).⁴⁷

These findings have implications for including contraceptive information in sex education programmes and for targeting those who are 17 years and above. Sex education that is ineffective often does not contain information on contraception.^{43,48} Effective sex education should address certain topics for different age groups: for example, for the 10 to 12 year-olds physical changes (development); for the 13 to 14 year-olds menstruation/wet dreams, pregnancy and relationships; for the 15 to 16 years-olds, sexual desire, pregnancy and contraception; and for the 17 to 19 year old contraception and pregnancy.^{49,50,51} At Ga-Dikgale, contraceptive education should probably be included in the sex education programmes from as early as 13 years because at that age 16.3% have already engaged in sex.

5.1.7 Knowledge, attitudes and practices concerning sexuality

Lack of factual information leads young people to make incorrect decisions.⁴⁸ Research has demonstrated that there is a strong correlation between sexual ignorance and the risk of pregnancy or venereal disease.⁵² Knowledgeable young people are more likely to delay having sexual experiences than their less knowledgeable peers.⁴²

It would seem that very little progress has been made in sexuality education because in 1983 of the pregnant school girls interviewed, 82% knew nothing about menstruation.²⁹ For example in this study only 38.5% had received information on menstruation. A high percentage of teenagers at Ga-Dikgale lack basic information on sexuality and on pregnancy. Many beliefs surrounding pregnancy were incorrect. For example, even those who had been pregnant did not believe that a first sexual encounter could result in pregnancy. In addition, 79% of the study subjects did not know the stage in the menstrual cycle during which a woman has the highest chance of pregnancy if she has unprotected sexual intercourse. Some even believed that pregnancy could occur during menstruation.

The fact that 88% of “ever pregnant” and 80% of “never pregnant” teenagers supported the inclusion of sex education in the school curriculum should serve as a strong motivation for the Northern Province Department of Education to include this in the school curriculum. A strategy to involve parents in sex education may also be considered because 61% of the study subjects indicated that they would like to receive information about menstruation from their parents.

By the age of 16 years 86% of the study subjects had already experienced sexual intercourse. This is clearly a contributory factor for the high teenage pregnancy rate at Ga-Dikgale because countries whose teenagers experienced their first sex at an older age were found to have a lower pregnancy rate than countries whose teenagers experienced it at a younger age.^{51,52,53,54} Teenagers did not only face the danger of pregnancy but also of sexually transmitted diseases (STDs) and HIV infection. So intervention programmes to address this problem should look into how teenagers could be motivated to avoid sexual intercourse at an early age.

Study subjects seemed to have sex to satisfy their partners rather than themselves in view of the reasons given by them. Nineteen percent of study subjects reported that they had been forced to have sex, half (46.3%) of whom had been forced to have sex by their boyfriends. Forced sex

appears to be a problem at Ga-Dikgale and often involves a person whom the study subject is close to (see Figure 5). Violence amongst adolescent lovers has been reported.⁵⁵ In this study no provision was made to inquire about the type of force used by the persons who forced teenagers to have sex with them.

5.1.8 Contraceptive use

The most popular contraceptive was found to be the “injection” which concurs with the findings of studies conducted in South Africa and in the Northern Province.⁵⁶ The “injection” referred to in this study was Depo-Provera or Nur-Isterate. Teenagers at Ga-Dikgale could be using the “injection” because it is more private and confidential than other forms of contraception.

Contraceptives are available from the local clinic but teenagers reported that they were expected to consult a doctor if they had never used contraceptives before. As there are no private doctors at Ga-Dikgale, teenagers have to go to Mankweng hospital which is 15 kilometres from the village to obtain contraception. By contrast, in Norway and Finland the most popular contraceptive is the condom.^{57,58} The fact that only 11% of teenagers reported that they were using condoms while 71% appeared to be sexually active has serious implications for STDs and HIV transmission. The low condom use could be due to disapproval by boyfriends and fear of visiting the clinic.

When study subjects were asked to name the types of contraceptives with which they were familiar, emergency contraception was not mentioned. The lack of knowledge about emergency contraception concurs with findings of another study conducted in the Northern Province.⁵⁶ Traditional methods of contraception were rarely mentioned.

5.1.9 Risk factors for teenage pregnancy at Ga-Dikgale village

5.1.9.1 Education level of study subjects

The higher the standard passed, the less likely was the study subject to ever have been pregnant. Pregnancy is definitely a risk factor for low school performance.

5.1.9.2 Having a boyfriend

Having a boyfriend was found to be a risk factor for teenage pregnancy in this study. Girls with boyfriends were far more likely to have been pregnant. Sex education should probably emphasize that having a boyfriend does not imply that one must engage in sexual intercourse, and that those

who feel that they cannot abstain from sexual intercourse should use contraceptives (preferably the condom to prevent pregnancy, STDs and HIV)

5.1.9.3 Age at which subjects believed peers had first sexual intercourse

The older the age at which study subjects believed their peers had sexual intercourse for the first time, the less likely that the study subject had been pregnant. “Never pregnant” study subjects believed that first sexual intercourse took place later, whereas “ever pregnant” study subjects believed that sexual intercourse took place earlier. Early sexual intercourse is not only a risk factor for pregnancy but predisposes teenagers to CIN and cervical cancer.^{9,10}

5.1.9.4 Friends’ sexual practices

This study showed that subjects who believed that their friends had already had sexual intercourse were far more likely to have been pregnant. When considering the findings in 5.1.9.2 and the fact that most teenagers believed that their friends were already sexually active, peer pressure to have sexual intercourse seems to be an important factor for teenage pregnancy in Ga-Dikgale.

5.2 Conclusions

There is a high prevalence of teenage pregnancy at Ga-Dikgale. Almost a quarter of teenagers were or had been pregnant. Teenagers are, therefore, not only at risk for pregnancy and scholastic underachievement, but also for STDs and HIV infection.

Teenagers have insufficient knowledge about sexuality and pregnancy. They also have inadequate access to information about this. It appears that they engage in sexual intercourse without thinking about the consequences. Many teenagers at Ga-Dikgale appeared to be seriously at risk of falling pregnant because they were sexually active and were not using contraceptives. Among those who had never been pregnant, the absence of pregnancy was due more to chance than to planning. Teenagers became sexually active at a young age because by the age of 16 years 86% had already had sexual intercourse. Although many (96%) said that teenage motherhood was not acceptable, most (42%) were not taking action to avoid pregnancy.

The existence of forced sex has been established in this study. But it is not known if this “forced sex” should be regarded as rape, nor what steps, if any, were taken against those who subjected the teenagers to forced sex. As it was also found that forced sexual intercourse occurred between

teenagers and someone they knew, it is unlikely that many instances of forced sex with teenagers were ever reported. Reporting forced sex may be an embarrassment to the teenager and even to the family members especially if the perpetrator is a family member.

In summary, the following risk factors were found to be associated with teenage pregnancy at Ga-Dikgale:

- * The higher the standard passed, the less likely was the study subject to ever have been pregnant.
- * Having a boyfriend was a risk factor for teenage pregnancy in this study, even though having a boyfriend does not imply indulging in sexual intercourse.
- * The older the age at which study subjects believed their peers first had sexual intercourse, the less likely that the study subject had been pregnant.
- * Study subjects who believed that their peers had already had sexual intercourse were far more likely to have been pregnant.

5.3 Recommendations

5.3.1 Sex education

It is crucial to evaluate the sources, the amount, the content of currently provided sex education and its impact on reducing teenage pregnancy. Therefore, it is strongly recommended that the Department of Education should be encouraged to incorporate sex education in the school curriculum as a matter of urgency and that it institutes a routine process for the monitoring and evaluation of the content, format and effectiveness. A strategy of involving parents will have to be sought if the education programme is to be optimally successful. To ensure that the parents are involved, the results of this study should be disseminated to them through parents associations in the villages (e.g burial societies). Thereafter the parents should be given an opportunity to design an intervention programme with the help of the researcher and other stakeholders identified (e.g nurses and indunas). The parents should also actively participate in the implementation of such a programme.

Sex education programmes should be age group specific. For example, sex education programmes in Ga-Dikgale area should include education on contraceptives from age 13 years.

5.3.2 Access to information and contraception

Contraceptives must be made more accessible to teenagers. The manner in which teenagers can obtain contraception needs to be made more acceptable to them. For this to happen, the attitudes of nurses and parents towards contraceptive use should be changed. Myths about contraceptives should be eliminated by an education programme. Though quite a number of factors may be responsible for the low teenage pregnancy rates in some developed countries, such countries have well developed sex education programmes and a high contraceptive accessibility.^{59,60}

5.3.3 Human rights

The issue of forced sexual intercourse needs to be investigated further to find out whether this should be regarded as rape, or incest in some cases, and what steps were taken by individuals and the community. Further studies are also needed to investigate the incidence of forced sex, the type of force used and the social factors that allow forced sex to continue.

Teenagers should be taught about assertiveness and human rights so that they can refuse sex and take appropriate steps against those who force them to have sex. Future studies in this area should include both boys and girls in order to understand the gender power relations.

5.3.4 Comprehensive approach to teenage pregnancy

Given the multitude of factors that may impact on teenage pregnancy or on solutions for this problem, a successful approach will require a multi-disciplinary intervention and a high parental and community involvement⁵⁹ including the political will to address this issue seriously.

5.4 References

1. Nash ES. Teenage pregnancy-need a child bear a child? *S Afr Med J* 1990; **77**: 147-151
2. Aibe S, Kitamura K. Study on the prevention of unwanted teenage pregnancies. *Japan Family Planning Association* 1996; 1-81.
3. De Villiers VP. Tienderjarige swangerskappe in die Paarl-hospital. *S Afr Med J* 1985; **67**: 301-302.
4. Buga GAB, Amoko DHA, Ncayiyana DJ. Sexual behaviour contraceptive practice and reproductive health among school adolescents in rural Transkei. *S Afr Med J* 1996; **86**: 523-527.
5. Mogotlane S. Teenage pregnancy an unresolved issue. *Curationis* 1993; **16**: 11-14.
6. Dlamini T, Mackenzie A. Attitudes to teenage pregnancy. *Nursing RSA* 1991; **6**: 28.
7. Kaseke LT. The knowledge, attitude and practice of birth control methods in recently delivered primigravida mothers. *University of Potchefstroom*; 1995 unpublished report.
8. Alberts M. Dikgale demographic study Phase I. University of the North Health Promotion Action Group; 1995.
9. Sadeghi SB, Hsieh W, Gunn SW. Prevalence of cervical intra epithelial neoplasia in sexually active teenagers and young adults. *Am J Obstet and Gynecol* 1981; **148**: 726-731.
10. Baron SL. Sexual activity in girls under 16 years of age. *Br J Obstet Gynaecol* 1986; **93**: 787-793.
11. Clarke MI. Black teenage pregnancy an obstetrician's viewpoint. *J Community Health* 1986; **11**: 23-30

12. Murphy M. Social consequences of vesico-vaginal fistulas in Northern Nigeria. *J Biosoc Sci* 1981; **13**: 139-150.
13. Tahzib F. Epidemiological determinants of vesico-vaginal fistulas. *Br J Obstet Gynaecol* 1983; **99**: 387-391.
14. Okonofua FE, Abejide A, Makenjuala RA. Maternal mortality in Ile-Ife Nigeria. A study of risk factors. *Fam Plann Stud* 1992; **23**: 319-329.
15. WHO report. The health of the young people. A challenge and promise. Health problems and behaviour. *WHO, Geneva* 1993; 23-30.
16. Rossiter H, Chong U, Lister O, Bano ND, Griggs CC. The influence of maternal age and parity on child-bearing with special reference to primigravidae age 15 years and under. *Br J Obstet Gynaecol* 1985; Supplement: 23-31
17. Ncayiyana DJ, Ter Haar G. Pregnant adolescents in rural Transkei. Age *per se* does not confer high-risk status. *S Afr Med J* 1988; **75**: 231-232.
18. Jacono JJ, Jacono BJ, St.Onge M, Van Oosten S et al. Teenage pregnancy, a reconsideration. *J of Public Health* 1992; **83**: 196-199.
19. Van Coeverden De Groot HA. Adolescent pregnancy. *CME/VMO* 1991; **9**: 1370-1381.
20. Nebot M, Borrel C, Villabi J R. Adolescent motherhood and socio-economic factors. An ecologic approach. *Eur J of Public Health* 1997; **7**: 144-148.
21. Smith T. Influence of socio-economic factors on attaining targets for reducing teenage pregnancies. *BMJ* 1993; **306**: 1232-1235.
22. Rockey T. Teenage pregnancy society does not smile on pregnant school girls, however pleased they seem. *Nursing RSA* 1986; **1**: 16-17

23. International development research centre (Canada). Teenage pregnancy the options. *Salus* 1995; **18**: Part 1: 8-9.
24. Pete JM, DeSantis L. Sexual decision making in young black adolescent females. *Adolescence* Spring 1990; **XXV**: 145-154.
25. Rodriques JC, Moore NB. Perceptions of pregnant/parenting teens: Reframing issues for an integrated approach to pregnancy problems. *Adolescence* Fall 1995; **30**: 685-693.
26. Cooksy EC. Factors in the resolution of adolescent premarital pregnancy. *Demography* 1990; **27**: 207-217.
27. Mayekiso TV, Twaise N. Assessment of parental involvement in imparting sexual knowledge to adolescents. *S Afr J Psychol* 1993; **23**: 21-23.
28. Spanier GB. Sources of sex information and premarital sexual behaviour. *J Sex Res* May 1977; **13**: 73-88.
29. Craig AP, Righter-Strydom L. Unplanned pregnancies among urban Zulu schoolgirls. Community research as preparations for intervention. *S Afr Med J* 1983; **63**: 452-455.
30. Sheaf L, Talashek M. Ever-pregnant and never-pregnant teens in a temporary housing shelter. *J of Community Health Nurs* 1995; **12**: 33-45.
31. Freeman EW, Richess K, Geoger MD, Huggens MM, Garcia CR. Urban black adolescents who obtain contraceptive services before or after their first pregnancy. *J Adolesc Health Care* 1984; **5**: 183-190.
32. Setiloane CWM. Contraceptive use amongst urban and rural youths in South Africa a comparative study. *Curations* 1990; **13**: 44-48.
33. Landry E, Bertrand S, Cherry J, Rice F. Teen pregnancy in New Orleans. *J Youth Adolesc*

1986; **15**: 259-274.

34. Alade MO. Teenage pregnancy in I ILe- lfe, Western Nigeria. *West J Nurs Res* 1989; **11**: 609-613.
35. Sachs B. Contraceptive decision-making in urban, black female adolescents its relationship to cognitive development. *Int J Nurs Stud* 1985; **22**:117-126.
36. Johnson SA, Green V. Female adolescent contraceptive decision making and risk taking. *Adolescence* Spring 1993; **28**: 81-95.
37. Mahmud M, Islam MM. Adolescent contraceptive use and its deterrents in Bangladesh: Evidence from Bangladesh. Fertility survey. *Contraception* 1989; **52**:181-186.
38. Strydom G. Contraceptives for teenagers an ethical issue. *Nursing RSA* 1991; **8**: 29-32.
39. Abdool Karim O, Preston-Whyte E, Abdool Karim S S. Teenagers seeking condoms at family planning services. Part I. A user's perspective. *S Afr Med J* 1992; **82**: 356-359.
40. Abdool Karim Q, Abdool Karim SS, Preston-Whyte E. Teenagers seeking condoms at family planning services. Part II. A provider's perspective. *S Afr Med J* 1992; **82**: 360-362.
41. Adame DD. On the effects of sex education a response to those who say it promotes teenage pregnancy. *Health Educ* October/November 1985; 8-10.
42. Woodcock A, Stenner K, Ingham P. All these contraceptives, videos and that "young people talking about sex education." *Health Educ Res* 1992; **7**: 517-530.
43. Heller GR. School-based clinics: Impact on teenage pregnancy prevention. *Pediatr Nurs* 1988; **14**:103-106.
44. Alberts M. Dikgale demographic study phase 2. University of the North 1996.

45. Stiffman AR, Earls F, Robins LN et al. Adolescent sexual activity and pregnancy: Socio-environmental problems, physical health and mental health. *J Youth Adolesc* 1987; **16**: 497-509.
46. Health Systems Development Unit, Ithuseng Community Association and Hlatlolanang Health and Nutrition Education Centre report. Adolescence sexuality and reproductive health issues. *University of the Witwatersrand, Johannesburg* June 1997; unpublished report.
47. Jones EF, Forest JD, Goldman N, et al. Teenage pregnancy in developed countries : Determinants and policy implications. *Fam Plann Perspec* 1985; **17**: 53-63.
48. Dawson DA. The effects of sex education on adolescent behaviour. *Fam Plann Perspec* 1986; **18**: 162-170.
49. Blum RW, Pfaffinger K, Donald WB. A school-based comprehensive health clinic for adolescents. *J Sch Health* October 1982; 486-490.
50. Alcock KM. Teenage pregnancy and sex education. *Br J Fam Plann* 1992; **18**: 88-92.
51. Ralph N, Edgington A. An evaluation of an adolescence family planning programme. *J Adolesc Health Care* 1983; **4**: 158-162.
52. Kulin H E. Adolescent pregnancy in Africa: A programmatic focus. *Soc Sci Med* 1988; **26**: 727-735.
53. Bingham CR, Miller BC, Adams GR. Correlates of age at first intercourse in a national sample of young women. *J Adolesc Res* 1990; **5**: 18-33.
54. Kraft P. Age at first intercourse among Norwegian adolescents: A life style perspective. *Soc Sci Med* 1991; **33**: 207-213.
55. Wood K, Maforah F, Jewkes R. 'He forced me to love him': Putting violence on the

- the adolescent sexual health agenda. *Soc Sci Med* 1998; **7**: 233-242.
56. Wood K, Maepa J, Jewkes R. Adolescent sex and contraceptive experiences. Perspectives of teenagers and clinic nurses in the Northern Province. *Women's Health Project* 1998; **25**: 25.
57. Kraft P, Rise J. Contraceptive behaviour of Norwegian adolescents. *Health Edu Res* 1991; **6**: 431-441.
58. Shah F, Zelnik M. Parents and peer influence on sexual behaviour, contraceptive use and pregnancy experience of young women. *JMF* May 1981; 339-348.
59. Kontula O, Rampelä M, Ojanlatva A. Sexual knowledge, attitudes, fears and behaviors of adolescents in Finland (the KISS study). *Health Edu Res* 1992; **7**: 69-77.
60. Furstenberg FF, Levine JA, Brooks-Gunn J. The children of teenage mothers: Patterns of early childbearing in two generations . *Fam Plann Perspec* 1990; **22**: 54-61.
61. Spitz AM, Velebil P, Koonin LM et al. Adolescent pregnancy. *JAMA* 1996; **276**: 282.
62. Horn ME, Rudolph LB. An investigation of verbal interaction knowledge of sexual behaviour and self-concept in adolescence mothers. *Adolescence* 1987; **XXII**: 590-598.

APPENDIX 1

LIST OF FIGURES

Figure 1. Birth rates of teenage women, sub-Saharan Africa(per 1000)

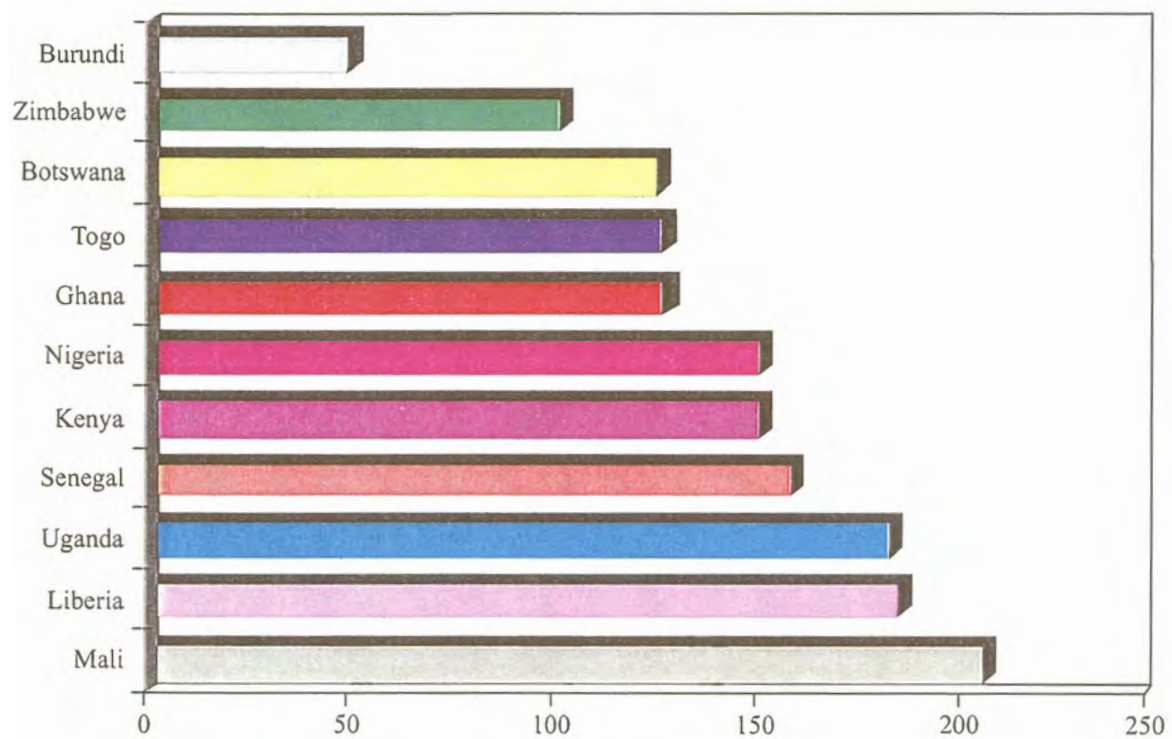


Figure 2. Flow diagram teenage populations at Ga-Dikgale and subjects eligible for the study.

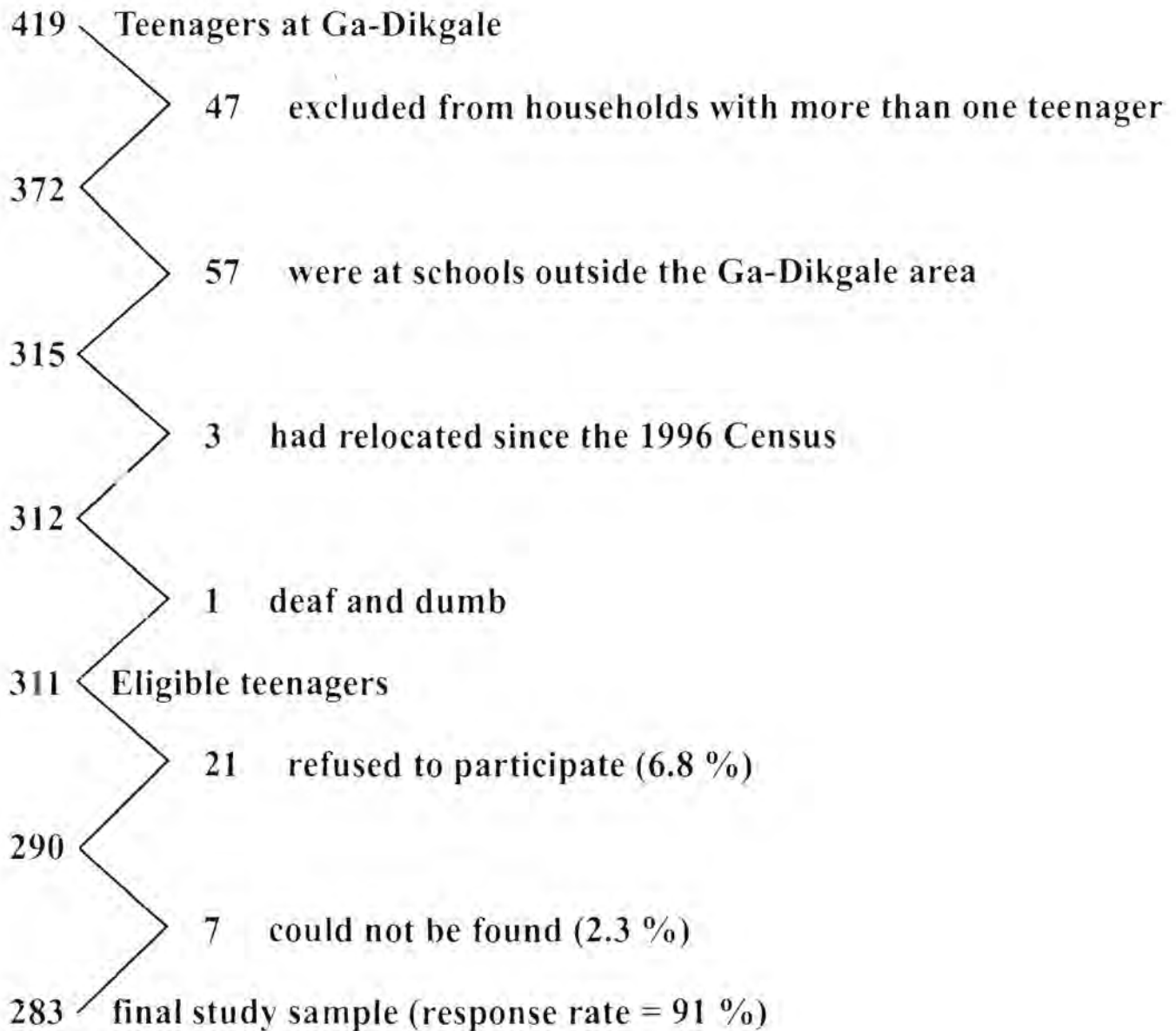


Figure 3. Age Distributions of Study Subjects

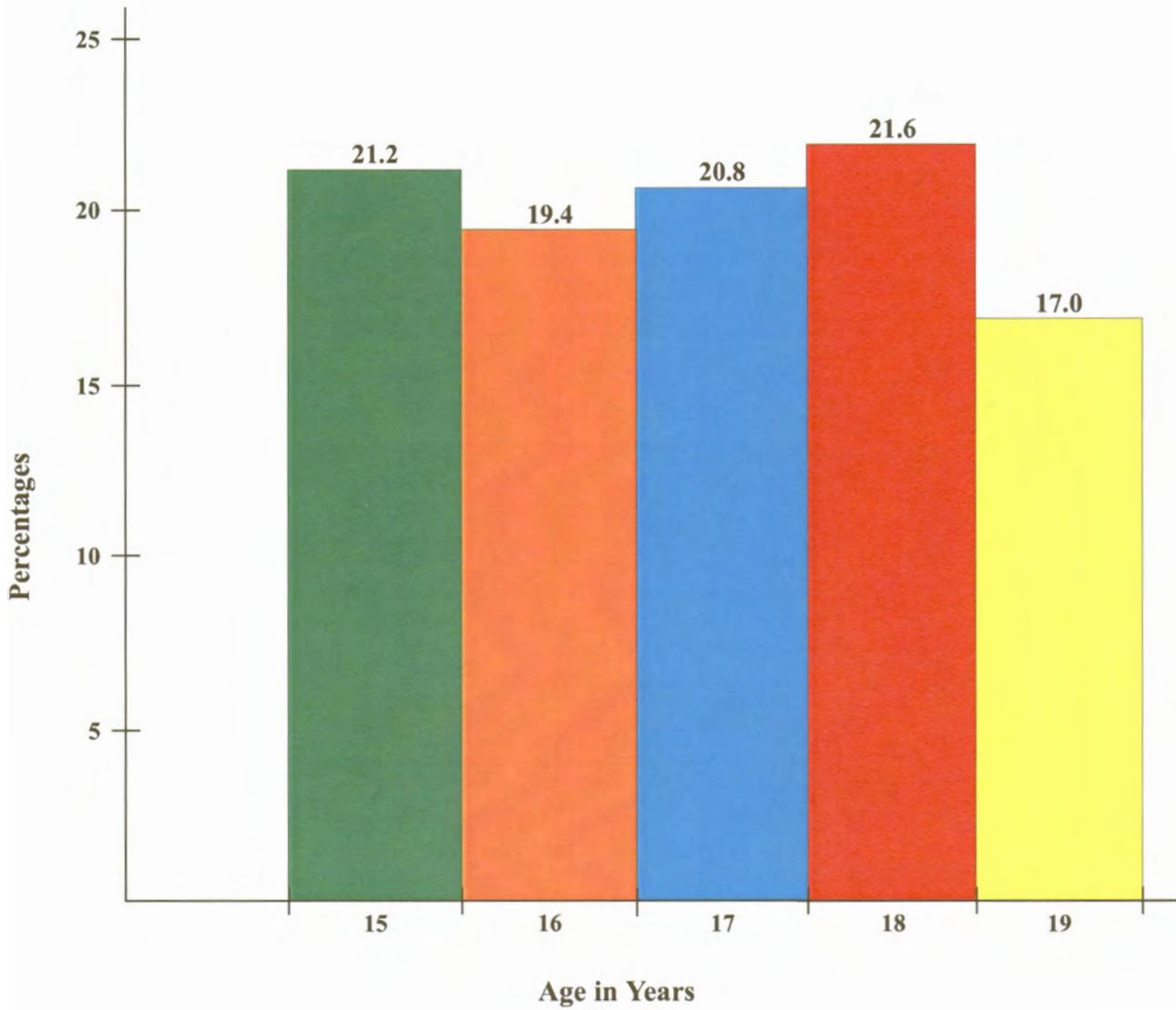


Figure 4. Age and percentages at first sexual intercourse

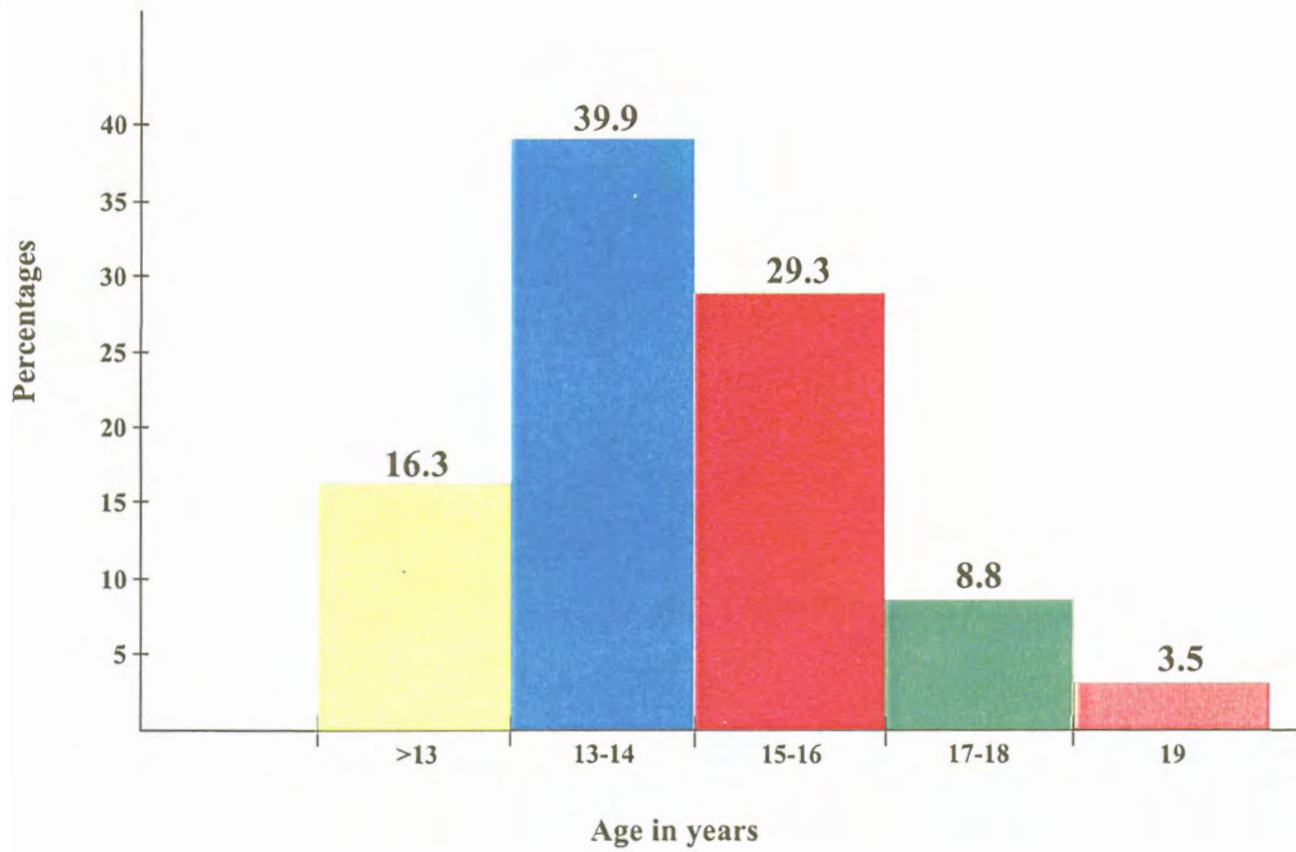




Figure 5. Persons who forced teenagers to have sex

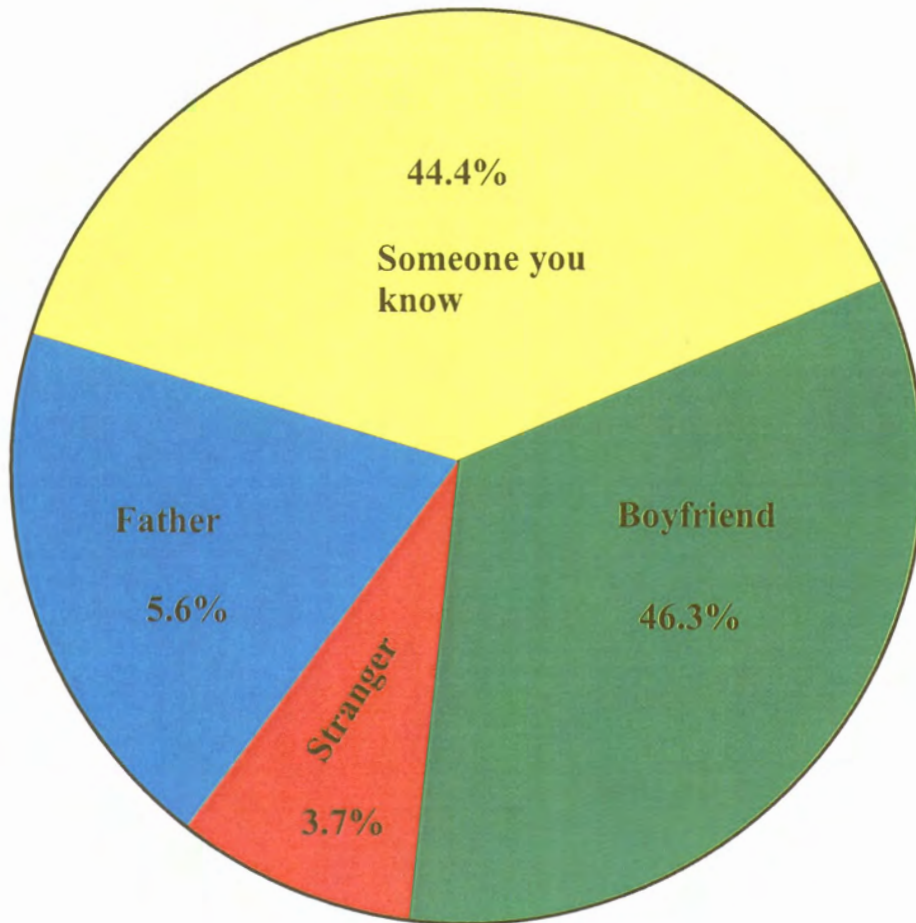


Figure 6. Contraceptives used First time

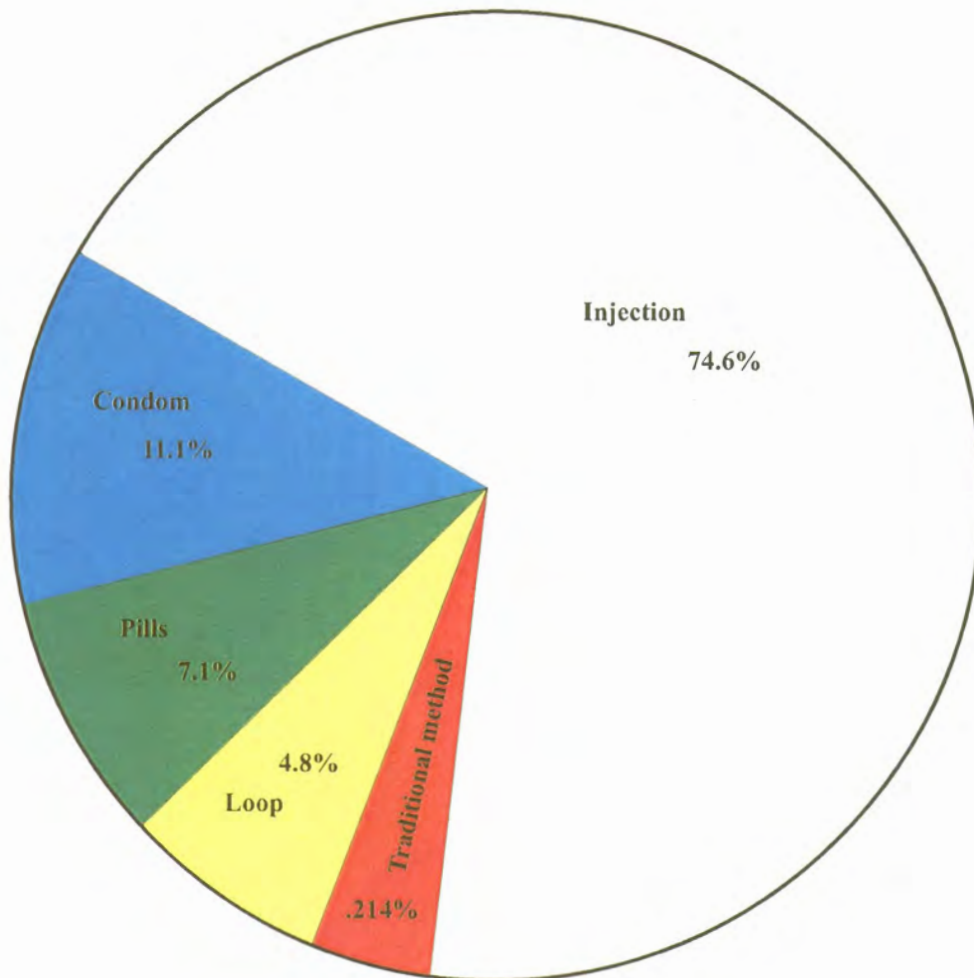
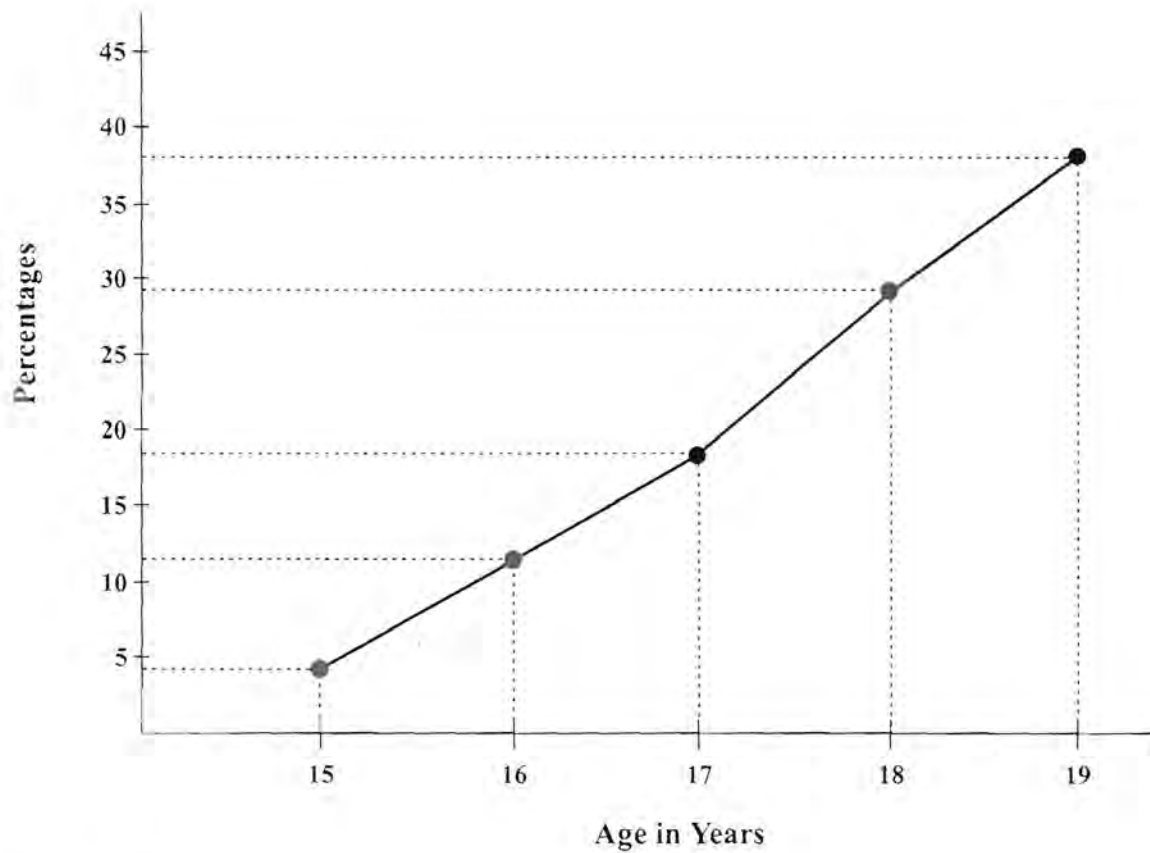
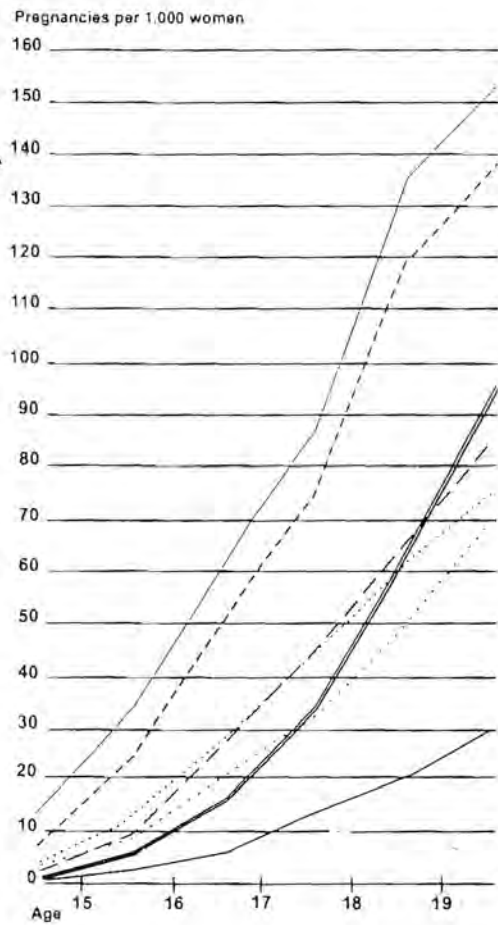


Figure 7. Associations between age and being
“ever pregnant”



15 = 4.5 %
16 = 10.5 %
17 = 17.9 %
18 = 29.9 %
19 = 37.3 %

Figure 8. Pregnancy rates per 1,000 women by woman's age, 1981



- United States (total)
- - - United States (whites)
- - - England and Wales
- France*
- Canada
- Sweden
- Netherlands

* 1980 data

Note: Pregnancies are defined here as births plus abortions; age is the age at outcome

APPENDIX 2

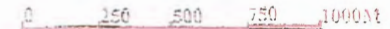
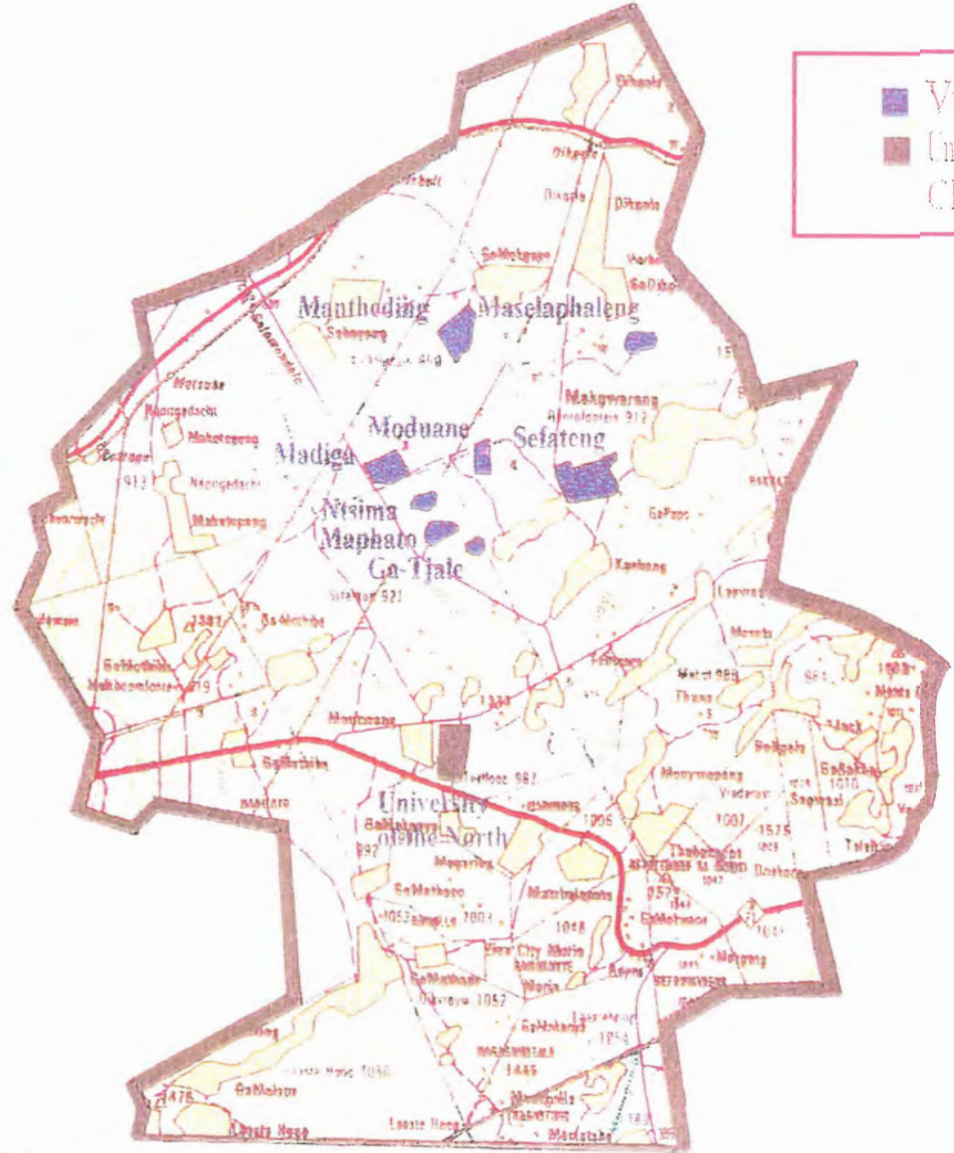
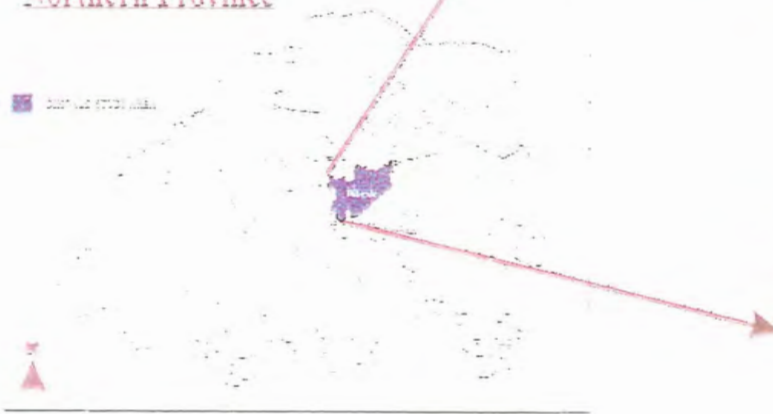
GA-DIKGALE MAP

STUDY AREA

SOUTH AFRICA



Northern Province



APPENDIX 3

QUESTIONNAIRES

1.PILOT STUDY

2.MAIN STUDY



Questionnaire Part One

Id number. -----

1. Age:

1= 13

2= 14

3= 15

4= 16

5= 17

6= 18

7= 19

2. What religion do you belong to?

1 = Z C C

2 = Methodist

3 = Roman catholic

4 = Apostolic

5 = A M E

6 = Presbyterian

7 = Universal

8 = Luthern

9 = I P H C

10 = Dutch Reformed

11 = None

12 = Ethiopian Church of South Africa



6. Who were you living with when you were about 10 years old?

1 = mother

2 = father

3 = both parents

4 = grand parents

5 = relative

7. If you were not living with parents when you were 10 years old what were the reasons?

1= mother working far away

2 = father working far away

3 = parents divorced

4 = both parents working far away

8. Parents' marital status:

1 = married

2 = divorced

3 = never married

4 = married and separated

5 = don't know

9. What is the highest level of education attained by your mother?

1= < std 3

2 = completed primary

3 = completed high school

4 = completed tertiary

5 = do not know

6 = other

10. What is the highest level of education attained by your father?

1= < std 3

2 = completed primary

3 = completed high school

4 = completed tertiary

5 = do not know

6 = other



11. What work does your father do?

1 = domestic

2 = driver

3 = clerical

4 = professional

5 = self-employed/high

6 = self - employed/low

7 = pensioner

8 = not working

9 = other state-----

12. What work does your mother do?

1 = domestic

2 = driver

3 = clerical

4 = professional

5 = self-employed/high

6 = self-employed/low

7 = not working

8 = pensioner

9 = other state-----



13. If both parents are unemployed\dead who maintains the family financially?

1 = relative

2 = grandparent

3 = government grant

3 = sibling

5 = other state -----

14. Do you have a television set at home?

1 = yes

2 = no

15. Do you have a radio at home?

1 = yes

2 = no

16. Are you currently engaged in formal education?

1 = yes

2 = no

17. If not what are the reasons?

1 = educational failure

2 = lack of funds

3 = pregnancy

4 = family responsibility

5 = other state -----

18. If not engaged in education what is the highest school standard you have passed?

1= < 3

2 = completed primary

3 = completed secondary

4 = never been to school

5 = other state -----

19. If currently in formal education in what standard are you?

1 = 5

2 = 6

3 = 7

4 = 8

5 = 9

6 = 10

7 = other state -----

20. If currently at school are you intending to continue?

1 = yes

2 = no

21. If not intending to continue what are the reasons?

1 = educational failure

2 = lack of money

3 = pregnancy

4 = family responsibilities

5 = other state -----



22. Have you ever failed a year at school?

1 = yes

2 = no

23. Have you ever had to interrupt your studies for a period?

1 = yes

2 = no

24. If interrupted studies what were the reasons?

1 = educational failure

2 = lack of money

3 = pregnancy

4 = family responsibilities

5 = school boycotts/administrative problems

6 = illness

7 = other state -----

25. If not attending formal school what are you currently doing?

1 = stay at home

2 = looking after baby

3 = working

4 = other state -----

26. If working do you receive any income/money for what you are doing?

1 = yes

2 = no



27. If any money/income received, about how much a month do you get?

1= <R500

2= R500-R1000

3= R1000-R2000

4= >R2000

28. Have you started to menstruate?

1 = yes

2 = no

29. When was your last menstrual date? month and date.

30. How long did it take?

1 = 1day

2 = 3days

3 = 5 days

4 = 7days

5 = other state -----

31. If you have missed a period are you pregnant?

1 = yes

2 = no

32. Have you ever been pregnant?

1= yes

2= no

Questionnaire Part Two

1. Have you ever consulted any health care service about a matter which has to do with reproduction such as contraception, menstruation, pregnancy, STD and AIDS?

1= yes

2= no

2. If yes who did you consult for the first time?

3. If yes how would you rate the service?

1= good

2= Poor

3= don't know

4. Give reasons for the rate given.

5. If you have never visited any health care services why?

6. If you have visited any of the health care services what were the reasons?

7. Do you think it is OK for teenagers to become mothers?

1= yes

2= no

8. If yes what are the reasons?

9. If no what are the reasons?

10. What do you think is the best place for teenagers to receive reproductive health information?

- 1= primary schools
- 2= secondary school
- 3= clinics in the community
- 4= hospital
- 5= special centre for youth
- 6= other -----

11. Would you support the idea of including sex education in the school curriculum?

- 1= yes
- 2= no

12. Have you ever received sex information?

- 1= yes
- 2= no

13. How old were you when you started to menstruate?

- 1= 9-10
- 2= 11-12
- 3= 13-14
- 4= 15-16
- 5= 17-18
- 6= 19
- 7= not yet

14. Has someone explained to you what menstruation is?

- 1= yes
- 2= no



15. If yes who explained to you first time?

1= parent

2= other adult

3= sibling

4= male friend

5= female friend

6= health professional

7= mass media

8= other

17. If no who do you think should explain?

18. In your own words can you explain what menstruation means.

19. What do you think are the first signs of puberty in girls?

20. Can the first encounter result in pregnancy?

1= yes

2= no

21. If yes give reasons.

22. If no give reasons.



23. Do you currently have a boy- friend?

1= yes

2= no

24. If yes how old is your boy-friend?

1 = 9-10

2 = 11-12

3 = 13-14

4 = 15-16

5 = 17-18

6= 19-20

7= other-----

25. If you have a boyfriend how would you describe this relationship?

1= fiancé

2= Steady

3= Casual

4= other

26. At what age did you have your first boyfriend?

1= 9-10

2= 11-12

3= 13--14

4= 15-16

5= 17-18

6= 19

7= other

27. At what age do you believe most girls in your village have their first sexual intercourse?

1= 9-10

2= 11-12

3= 13-14

4= 15-16

5= 17-18

6= 19

7= other -----

28. Have you ever had sexual intercourse?

1= yes

2= no

29. If yes how old were you when you first had intercourse?

1= 9-10

2= 11-12

3= 13-14

4= 15-16

5= 17-18

6= 19

30. What were the reasons for having sexual intercourse the first time?

31. If you have never had sexual intercourse what are the reasons?



32. How many times have you had sexual intercourse in the last six months?

1= never

2= 1-4 times

3= 5-8 times

4= 9>

33. With about how many partners have you had intercourse a month in the last six months?

1= none

2= 1-3

3= 4-6

4= 7-9

5= other

34. What do you think is the most appropriate age for a girl to have sexual intercourse?

1= 9-10

2= 11-12

3= 13-14

4= 15-16

5= 17-18

6= 19>

7= other

35. What are the necessary conditions for exposing yourself in sexual intercourse?



36. Do you have knowledge about what could happen if you expose yourself to unprotected sex?

1= yes

2= no

37. If yes what could happen if you expose yourself to unprotected sexual intercourse?

38. When in the menstrual circle do you think a girl has the highest chance of becoming pregnant if she has unprotected sex (sex without using contraceptives)?

39. Have you ever been forced to have sex against your will?

1= yes

2= no

40. If yes who forced you?

41. Do you think young people encounter problems trying to protect themselves from unplanned pregnancy?

1= yes

2= no

42. If yes why (explain)

43. If no why (explain)

44. Have you ever heard about contraceptives?

1= yes

2= no



45. If yes who informed you about contraceptives for the first time?

1= male friend

2= female friend

3= school teacher

4= nurse

5= parents

6= sister

7= other -----

46. Who do you think should inform you about contraceptives?

1 = male friend

2 = female friend

3 = school teacher

4 = mass media

5 = nurse

6= parents

7= other -----

47. Have you ever needed to use contraceptives, but you did not have?

1= yes

2= no

48. Which contraceptive/s do you know of?

49. Have you ever used any contraceptive?

1= yes

2= no



50. If yes which one did you use the first time?

51. If you are using contraceptives what is your source of supply?

52. If no which one are you going to use?

53. Ideally where should teenagers obtain/buy contraceptives?

54. Explain in simple terms how your method of choice prevents pregnancy.

-----55.

What do you think is the attitude of adults towards teenagers who use contraceptives?

1= positive

2= negative

3= indifferent

4= other

56. Do you think sexually active teenagers should use contraceptives?

1= yes

2= no

Thank you for your time

Date: -----

Signature: -----



Questionnaire Part One

Household number -----

Id number. -----

1. Age:

1= 15

2= 16

3= 17

4= 18

5= 19

2. What religion do you belong to?

1 = Z C C

2 = Methodist

3 = Roman catholic

4 = Apostolic

5 = A M E

6 = Presbyterian

7 = Universal

8 = Luthern

9 = I P H C

10 = Dutch Reformed

11 = None

12 = Ethiopian Church of South Africa

3. How often do you go to a religious service a month?

1 = weekly

2 = twice monthly

3 = thrice monthly

4 = Monthly

5= hardly ever

6 = daily

4. Who do you live with?

1 = both parents

2 = mother

3 = father

4 = grandparents

5 = relative

6 = sibling



5. If not living with both parents what are the reasons?
 - 1 = both parents dead
 - 2 = both parents working far away
 - 3 = mother working far away
 - 4 = father working far away
 - 5 = one parent dead

6. Who were you living with when you were about 10 years old?
 - 1 = mother
 - 2 = father
 - 3 = both parents
 - 4 = grand parents
 - 5 = relative

7. If you were not living with parents when you were 10 years old what were the reasons?
 - 1 = mother working far away
 - 2 = father working far away
 - 3 = parents divorced
 - 4 = both parents working far away

8. Parents' marital status:
 - 1 = married
 - 2 = divorced
 - 3 = never married
 - 4 = married and separated
 - 5 = don't know

9. What is the highest level of education attained by your mother?
 - 1 = < std 3
 - 2 = completed primary
 - 3 = completed high school
 - 4 = completed tertiary
 - 5 = do not know
 - 6 = other



10. What is the highest level of education attained by your father?
- 1 = < std 3
 - 2 = completed primary
 - 3 = completed high school
 - 4 = completed tertiary
 - 5 = do not know
 - 6 = other
11. What work does your father do?
- 1 = domestic
 - 2 = driver
 - 3 = clerical
 - 4 = professional
 - 5 = self-employed/high
 - 6 = self - employed/low
 - 7 = pensioner
 - 8 = not working
 - 9 = Don't know-----
12. What work does your mother do?
- 1 = domestic
 - 2 = driver
 - 3 = clerical
 - 4 = professional
 - 5 = self-employed/high
 - 6 = self-employed/low
 - 7 = not working
 - 8 = pensioner
 - 9 = Don't know
13. If both parents are unemployed\dead who maintains the family financially?
- 1 = grandparent
 - 2 = sibling
 - 3 = relative
14. Do you have a television set at home?
- 1 = yes
 - 2 = no
15. Do you have a radio at home?
- 1 = yes
 - 2 = no



16. Are you currently engaged in formal education?
1= yes
2= no
17. What is the highest school standard you have passed?
1= <5
2= 5
3= 6
4= 7
5= 8
6= 9
7= 10
18. If not what are the reasons?
1= educational failure
2= lack of funds
3= pregnancy
4= family responsibility
5= other specify -----
19. Have you ever failed a year at school?
1 = yes
2 = no
20. Have you started to menstruate?
1 = yes
2 = no
21. How old were you when you started to menstruate
1= 11-12
2= 13-14
3= 15-16
4= 17-18
22. When was your last menstrual date? month and date.

23. How long did it take?
1 = 1-2 days
2 = 3-4 days
3 = 5-6 days
4 = 7-8 days
5 = >8 days



24. Have you ever thought you were pregnant?

1 = yes

2 = no

25. If yes what happened?

1= menses resumed

2= miscarried

3= had a baby

4= still pregnant

26. Have you ever been pregnant?

1= yes

2= no



Questionnaire Part Two

1. Have you ever consulted any health care service about a matter which has to do with reproduction such as contraception, menstruation, pregnancy, STD and AIDS?

1= yes
2= no

2. If yes who did you consult for the first time?

1= private doctor
2= clinic
3= hospital
4= other specify

3. If yes how would you rate the service?

1= good
2= Poor
3= don't know

4. Give reasons for the rate given.

5. If you have never visited any health care services why?

6. Have you ever received sex education?

1= yes
2= no

7. What do you think is the best place for teenagers to receive reproductive health information?

1= primary schools
2= secondary school
3= clinics in the community
4= hospital
5= special centre for youth
6= other specify-----

8. Would you support the idea of including sex education in the school curriculum?

1= yes
2= no

9. Has someone explained to you what menstruation is?

1= yes
2= no



10. Who do you think should explain to you what menstruation is?
1= parent
2= health professional
3= sibling
4= relative
11. In your own words can you explain what menstruation is and what it means.

12. Can the first encounter in sexual intercourse result in pregnancy?
1= yes
2= no
13. Give reasons.

14. When in the menstrual cycle do you think a girl has the highest chance of becoming pregnant if she has unprotected sex (sex without using contraceptives)?
1= on the day of bleeding
2= a week after bleeding
3= a week before bleeding
4= don't know
5= any time
15. Have you ever had a boy- friend?
1= yes
2= no
16. If yes how old is your boy-friend?
1 = <15
2 = 15-16
3 = 17-18
4 = 19-20
5 = >21
17. If you have a boyfriend how would you describe this relationship?
1= fiancé
2= Steady
3= Casual
4= Don't know



25. With about how many partners have you had intercourse a month in the last six months?
- 1= none
 - 2= 2-3
 - 3= 4-5
 - 4= >5
26. What do you think is the most appropriate age for a girl to have sexual intercourse?
- 1= <15
 - 2= 15-16
 - 3= 17-18
 - 4= 19-20
 - 5= >21
27. Have you ever been forced to have sex against your will?
- 1= yes
 - 2= no
28. Who forced you?
- 1= Boyfriend
 - 2= father
 - 3= "someone you know"
 - 4= stranger
 - 5= relative
29. Have you ever heard about contraceptives?
- 1= yes
 - 2= no
30. If yes who informed you about contraceptives for the first time?
- 1= male friend
 - 2= female friend
 - 3= school teacher
 - 4= nurse
 - 5= parents
 - 6= sister
 - 7= mass media
31. Who do you think should inform you about contraceptives?
- 1 = parents
 - 2 = female friend
 - 3 = school teacher
 - 4 = health professional
 - 5 = sister
32. Do you think young people encounter problems trying to protect themselves from unplanned pregnancy?
- 1= yes
 - 2= no



33. Give reasons

34. Which contraceptive do you know of?

35. Have you ever used any contraceptive?
1= yes
2= no
36. If no why are you not using contraceptives/ before you fell pregnant?

37. Do you think it is OK for teenagers to become pregnant?
1= yes
2= no
38. Give reasons.

39. Which contraceptive did you use the first time?
1= injection
2= pills
3= condom
4= traditional method
5= other specify
40. In simple terms how do contraceptives prevent pregnancy.
-----1=
yes
2= no
41. What do you think is the attitude of adults towards teenagers who use contraceptives?
1= positive
2= negative
3= indifferent
4= other specify
42. Do you think sexually active teenagers should use contraceptives?
1= yes

Thank you for your time

Date: -----

Signature of interviewer: -----

APPENDIX 4

CONSENT FORMS

PROTOCOL NO 149/97

INFORMED CONSENT

TITLE : RISK FACTORS ASSOCIATED WITH TEENAGE PREGNANCY AT GA-DIKGALE VILLAGES IN THE NORTHERN PROVINCE OF SOUTH AFRICA

RESEARCH STUDY

I _____ (name) of _____ (place) allow my daughter to participate in this study, which has been explained to me by _____ . This research study is being conducted by the Department of Community Health University of Pretoria.

PURPOSE OF THE STUDY

It has been explained to me that this research study aims at eliciting information on the risk factors associated with to teenage pregnancy at Ga-Dikgale in the Northern Province of South Africa.

DESCRIPTION OF PROCEDURES

It has been explained to me that an abdominal physical examination may be necessary to confirm pregnancy as the eligibility criteria to participate in the study include never pregnant, pregnant and teenage mothers fifteen (15) to nineteen (19) years resident in Ga-Dikgale.

I understand that she will be interviewed to elicit information on the socio-demographic characteristics knowledge, attitudes and practices with regard to sexuality and contraception and the possible constraints towards the utilization of contraceptives.

RISKS AND DISCOMFORTS

The study is non-therapeutic and there are no risks involved.

I have been made aware that she might experience psychological/emotional discomfort due to personal questions in the questionnaire and that she is free not to respond to any of the questions which makes her uncomfortable.

CONTACT PERSONS

The researcher: Ms RN Malema

BENEFITS

There are no direct benefits to her but the information obtained from the study will enable health care providers to draw suitable intervention strategies aimed at dealing and reducing teenage pregnancy.

ALTERNATIVES

There are no alternatives to this study.

VOLUNTARY PARTICIPATION

It has been explained to me that, participation in this research study is voluntary and she is free to withdraw consent to participate in this study at any time with no penalty.

CONFIDENTIALITY

No names will be used on the questionnaire but instead household numbers only known to the researcher. Interview forms will be kept safe by the researcher. No information will be released or published which bears her identity.

I have read all the above, had time to ask questions, received answers concerning areas I did not understand and willingly give consent to her to participate in this research study. Upon signing this form I will receive a copy.

Parent signature

Date

Witness signature 1

Date

Witness signature 2

Date

Interviewer signature

Date

PROTOCOL NO 149/97

INFORMED CONSENT

TITLE : RISK FACTORS ASSOCIATED WITH TEENAGE PREGNANCY AT GA-DIKGALE VILLAGES IN THE NORTHERN PROVINCE OF SOUTH AFRICA

RESEARCH STUDY

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There are no alternatives to this study.

VOLUNTARY PARTICIPATION

It has been explained to me that, participation in this research study is voluntary and I am free to withdraw consent to participate in this study at any time with no penalty.

CONFIDENTIALITY

No names will be used on the questionnaire but instead household numbers only known to the researcher. Interview forms will be kept safe by the researcher. No information will be released or published which bears her identity.

I have read all the above, had time to ask questions, received answers concerning areas I did not understand and willingly give consent to participate in this research study. Upon signing this form I will receive a copy.

Parent signature

Date

Witness signature 1

Date

Witness signature 2

Date

Interviewer signature

Date

APPENDIX 5

LETTERS OF PERMISSION TO CONDUCT THE STUDY

GAUTENG PROVINCE ETHICS COMMITTEE



PROVINSIALE
ADMINISTRASIE

=====
GAUTENG
=====

Enquires: Dr R Sommers

Address: Ethics Committee

Reference:

Ward 4 Room 19

Pretoria se

Akademie Hospitale

Private Bag x 169

PRETORIA

0001

Tel: (012) 354 1560

Fax: (012) 329 2256

Date: 10-09-1997

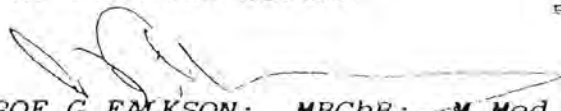
Nommer : 149/97

TITEL : A study investigating the risk factors leading to teenage pregnancy at Ga-Dikgale village in the Northern province of South Africa.

AANSOEKER : Me R N Malema; Dept Community Health; (Prof C Ijsselmuiden) Pretoria se Akademie Hospitale; PRETORIA.

This study has been considered by the Ethics Committee, Faculty of Medicine, Univ. of Pretoria and Pretoria Academic Hospital on 10-09-1997 and found to be acceptable.

Prof A.L. Coetzee	MA (Clin Psych); DSocSc (Leiden); MPA (Pret): Psychologist
Dr J.E.Davel (female)	MBChB: Hospital Superintendent
Prof A.P.du Toit	BA; Dipl Theo (Pret) BA (Hons) (Rhodes); MA; DPhil (Pret): Philosopher
Prof C.I. Falkson (female)	MBChB; M.Med (Int); MD; Med. Oncologist
Prof G. Falkson	MBChB; M.Med (Int); MD; OSG: Medical Oncologist
Dr A.G.S. Gous	MA; DPhil: Pastoral Psychologist
Prof S.V. Grey (female)	BSc (Hons) (Stell); MSc (PU vir CHO) DSc (Pret): Deputy Dean
Dr S.W. Johnson	MBChB: Hoapital Superintendent
Dr V.O.L. Karusseit	MBChB; MFGP (SA); M.Med (Chir); FCS (SA): Surgeon
Ms B.C.F. Magardie (female)	B Cur: Matron/ Senior Nursing Sister
Senior Sr J. Moerane (female)	BCur (E et Al) Senior Nursing Sister
Prof T.R. Mokoena	MBChB; FRCS (Glasgow); DPhil (Oxford): Surgeon
Prof H.W. Pretorius	MBChB; M.Med (Psych) MD: Psychiatrist
Dr P. Rheeder	MBChB; MMed (Int); L&I (SA); MSc (KLIN.EPI): Specialist Physician
Prof J.R. Snyman	MBChB; MPharm Med: Pharmacologist
Prof De K Sommers	BChB; HDD; MBChB; MD: Pharmacologist
Prof S.K. Spies	MBChB; M.Med (Int) MD: Specialist Physician
Prof F.W. van Oosten	BA; LLB; LLD (Pret); LLD (Unisa): Prof in Criminal and Medical Law


PROF G FALKSON; MBChB; M.Med (Int); MD; OSG;
VOORSITTER

THE SUPERINTENDENT GENERAL
DEPARTMENT OF HEALTH
NORTHERN PROVINCE



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Northern Province

DEPARTMENT OF HEALTH & WELFARE

Enquiries : Sinah Mahlangu

Reference : Research

25 September 1997

PO Box 25

Seshego

0742

Dear Ms Malema

**A STUDY TO INVESTIGATE THE RISK FACTORS LEADING TO
TEENAGE PREGNANCY AT GA-DIKGALE VILLAGE IN THE
NORTHERN PROVINCE**

1. Permission is hereby granted to conduct a study on the above topic in the Northern Province clinics Lowveld Region.
2. The Department of Health & Welfare needs a copy of the research findings for its own resource centre.
3. The researcher should be prepared to assist in interpretation and implementation of the recommendations where possible.
4. Implications: Permission should be requested from regional and institutional management to do research .

Sincerely,

**SUPERINTENDENT _ GENERAL
DEPARTMENT OF HEALTH & WELFARE
NORTHERN PROVINCE**

TEL 0152 - 291-2010/7
291-2637
295-2851/2
295-2897/8

FAX 0152 - 291-5961
291-5146

34 HANS VAN RENSBURG STREET,
PIETERSBURG
0700

DR JAN MOOLMAN BUILDING
PRIVATE BAG X9302