Factors influencing adolescent pregnancy in South Africa

A literature review

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FACTORS INFLUENCING ADOLESCENT PREGNANCY IN SOUTH AFRICA

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Public Health

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Declaration:
Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.
The thesis "**Factors influencing adolescent pregnancy in South Africa"** is my own work.

Signature: 

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Abbreviations

CRC	Convention of the Rights of the Child
CSE	Comprehensive Sexuality Education
CTOP	Choice on Termination Of Pregnancy
DOH	Department Of Health
GNI	Gross National Income
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IMMR	Institutional Maternal Mortality Rate
ISHP	Integrated School Health Programme
LARC	Long Acting Reversible Contraception
LO	Life Orientation
MAP	Men As Partners
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
MSF	Médecins Sans Frontières
NDOH	National Department Of Health
NGO	Non Governmental Organization
PHC	Primary Health Care
PPASA	Planned Parenthood Association South Africa
PPP	Purchasing Power Parity
SGBV	Sexual and Gender Based Violence
SRH	Sexual and Reproductive Health
SRHR	Sexual Reproductive Health and Rights
STI	Sexually Transmitted Infection
UNFPA	United Nations Population Fund
WHO	World Health Organization

Glossary

Adolescent
WHO defines adolescents as people between 10 and 19 years old (1).

Agency
"The capability to act, to make choices and make a difference" (2).

Backstreet abortion
"An illegal, and usually dangerous operation to end a pregnancy, done by someone who is not medically trained" (3).

Unsafe abortion
Unsafe abortion is defined by the WHO as "a procedure for terminating a pregnancy performed by persons lacking the necessary skills or in an environment not in conform minimal medical standards, or both" (4).
"The persons' skills and medical standards considered safe in the provision of abortion are different for medical and surgical abortion and also depend on the duration of the duration of the pregnancy. What is considered 'safe' should be interpreted in line with current WHO technical and policy guidance." (4).

Abstract

Out of 10 million adolescents in South Africa, 39% have been pregnant between the ages 15-19 years, and 1.1% gave birth before their 15th birthday. Health and social consequences of adolescent pregnancy are dire, whilst many adolescents face barriers to access safe abortion services, in spite of legalised abortion. Literature review revealed that the risk of pregnancy occurs at, and links with all levels of the ecological model. In South Africa's diverse, often poor socio-economic settings, pregnancy is linked with unsafe risky sexual behaviour, influenced by the circumstances under which sex occurs, in which adolescents' knowledge, agency and ability to negotiate sex and condom use is often compromised. This includes transactional sex, age disparate relationships, inequitable gender norms and Sexual and Gender Based Violence, especially in communities where dependency and the subordinate position of girls are distinct, and access to services and information is poor.
Notwithstanding South Africa's progressive laws and policies addressing adolescent pregnancy, implementation of most programmes is not up to standard. Evidence of the effectiveness of existing approaches addressing adolescent pregnancy is not always conclusive, yet show potential to have a positive impact, if combined, monitored well, and adapted to the needs of adolescents in their respective communities. This entails a scale up of youth friendly, sexual reproductive health and safe abortion services, Comprehensive Sexuality Education programmes, and programmes engaging communities, men and boys, focusing on gender norms, training service providers, and making facilities more adolescent friendly. Patterns of adolescent pregnancy and promising approaches require further research.

Key words used: "Adolescent pregnancy", "Teenage pregnancy", "South Africa", "Determinants", "Interventions"
Word count: 12511

Introduction

Adolescent pregnancy is a worldwide public health concern (5). Millions of girls suffer the health and social consequences of an early pregnancy. Every year about 16 million girls between the age of 15 and 19 years give birth, and about 3 million girls in that age group have an unsafe abortion (5). Deaths, due to unsafe abortion account for 13% of the global mortality (6). Adolescents, defined as people between the age of 10 and 19 years, account for over 19% of South Africa's population. Almost a third of adolescent girls have been pregnant (7).

Since 2005 I have been working with an international Non-Governmental Organization (NGO), Médecins Sans Frontières (MSF) in 8 different countries in different kind of projects, as a nurse and as a coordinator.
In 2014, I conducted an assessment for MSF in a mining area in North West Province, South Africa. The objective of the assessment was to identify the needs for opening a new project, focusing on Sexual and Gender Based Violence (SGBV). During the assessment we conducted 14 Focus Group Discussions with 73 individuals in total. Adolescent pregnancies, frequently resulting in unsafe, backstreet abortion were the most frequent concerns raised from the groups. The fatal consequences in the event of complications were mentioned in all focus groups. During that assessment I had the opportunity to see the magnitude of the problem, which urged me to study factors influencing adolescent pregnancy more.

This thesis is a result of reviewing and analysing relevant literature on factors influencing adolescent pregnancy and effective strategies in a country with seemingly progressive laws and policies, but also with great diversity and inequities. What is still lacking, and what are promising approaches to fill the gaps in addressing adolescent pregnancy and unsafe abortion? It concludes with the formulation of recommendations for the Ministry of Health and other stakeholders in South Africa.

Chapter 1 provides background information about demography and health and social context in South Africa. In chapter 2 the problem of adolescent pregnancy and its outcomes in South Africa are presented, followed by a justification, objectives and the conceptual framework used.
Subsequently the factors influencing adolescent pregnancy will be presented in chapter 3, followed by, best strategies to prevent adolescent pregnancy in chapter 4. Discussion is to be found in chapter 5, followed by conclusions and recommendations.

1. Background

This chapter provides background information about the demography, health and social context, relevant to adolescent pregnancy in South Africa.

1.1 Demographic information

The population of South Africa is estimated to be 54 million people with more than 10 million adolescents (10 – 19 years). Approximately 51% of the population is female. In 2014, life expectancy at birth was estimated to be 59 years for men and 63 years for women (8). The fertility rate is 2.4 live births per woman. About 63% of the population lives in urban areas (9). An important demographic development is migration in South Africa, influencing age structure and geographic distribution of the population. Gauteng and Western Cape receive the highest number of migrants (8).

Figure 1: Map of South Africa (10)

1.2 The health system

In South Africa, basic Primary Health Care is offered for free by the state. The country spent 31 billion USD on health care in 2013, 593 USD per capita. Seven percent of the health expenditure is by households, and 48% by the government (the remaining part by others). Although the share of government spending allocated to health is high with 14%, the Total Government Expenditure is low with 31% (11).

The National Department of Health (NDOH) is responsible for the National Health Policy. Within the framework of the national policy, each provincial Department Of Health (DOH) develops a provincial policy. The primary health care system is mainly nurse-driven, and includes district hospitals and community health centres. Preventive services and health promotion fall under the responsibility of local government. Private health care is offered by general practitioners and private hospitals (12).

South Africa's strategic plans, policies, guidelines and acts include:

- *The National Strategic Plan for HIV, STI and TB 2012 – 2016* aims to increase access to Sexual and Reproductive Health (SRH) services for women and girls. Promoting dual protection, provision of male and female condoms, abortion and contraception. It stresses that adolescent pregnancy and pregnancy prevention education must be given special attention (13).
- *The National Sexual Reproductive Health and Rights (SRHR) policy 2011 – 2021* provides a framework for inter-sectoral action to address barriers to achieving SRHR in South Africa (14).
- *The Adolescent and youth health policy 2012* identifies six key strategies to address adolescent health: "Promote and support youth empowerment and development, promote a safe and secure environment, promote youth to adopt healthy lifestyles, increase access to and quality of youth-friendly health services, ensure that all policies and programmes address youth issues and strengthen school health services"(15).
- South Africa's *contraception policy* articulates that contraception should be provided free of charge at Primary Health Care (PHC) clinics and that adolescent friendly services should be provided (16).
- The *contraception guidelines* recommend Long Acting Reversible Contraception (LARC), encouraging condom use, information, easy access to emergency contraception and counselling on abstinence as effective methods to reduce adolescent pregnancy (17).

- *The National Adolescent Sexual and Reproductive Health And Rights Framework Strategy 2014 – 2019* was launched to address current gaps, hampering the necessary progress for adolescent SRH (18).
- *The 1996 Choice on Termination of Pregnancy Act (Nr 2 of 1996),* allows abortion for women of any age up till 12 weeks gestation, under restriction between 13 to 20 weeks and in special circumstances beyond 20 weeks. Minors do not need parental consent (19).

SRH services and programmes available for adolescents include the Youth Friendly Services (YFS) initiative, Stepping Stones, Soul City, Integrated School Health Programme, among others.

1.3 Health indicators

Of one million women who fall pregnant annually in South Africa 8% are below 18 years (20). Of adolescents aged 15 – 19 years, 39% have been pregnant at least once. Within the following 2 years, 49% of adolescent mothers fall pregnant again (13).

The average Institutional Maternal Mortality Ratio (IMMR) was 133/100.000 live births in 2013/14, compared to 151/100.000 in 2011/2012, whilst the IMMR among girls below the age of 20 years was 98/100.000 live births (21,22). This doesn't necessarily mean that the maternal mortality among adolescent girls is lower, as this only includes women who accessed health services.

In 2009 the abortion rate in facility was 11.9% (23). In 2011/12 it was reported that 5.4% of the maternal deaths among girls below the age of 20 years was due to miscarriage (22). Of all women who died between 2008 and 2010 due to miscarriage, 23% had an unsafe abortion (24).

In 2014 the adult (15–49 years) HIV prevalence was estimated at 16.8%. Among youth aged 15 – 24 it was 8.7% (8). Females aged 15 to 24 years are four times more likely to have HIV than men of that age (13).

The average contraceptive prevalence rate for women aged 15–49 years was 60% (1990 – 2012) (25), which was 47% for married girls aged 15-19 years in 2003 (26). The average unmet need for family planning was 14% (1988 – 2012) (25). For married girls aged 15-19 years it was 18% in 2003 (26). The couple year protection rate[1] was 38% in 2012 (20).

[1] The rate at which couples are protected against pregnancy using modern contraceptive methods

1.4 Socioeconomic situation

Between 1999 and 2012, 90% of boys and 91% of girls were enrolled in primary school, whilst 59% of boys were enrolled in secondary school and 65% of girls (25).

In the 2003 DHS 1.3% of girls aged 15 -19 years reported being married, and 2.3% were living together. Among boys of that age group, 0.2% were married, and 1.8% living together. The median age at first marriage for women was 27 years (7).

South Africa has the largest economy in Africa, with a formal sector based on mining, manufacturing, services and agriculture, and a growing informal sector (7).
The Gross National Income (GNI) was over 685 billion current international $, with a GNI per capita, Purchasing Power Parity (PPP) of 12700 current international $ in 2014 (27). There are high levels of wealth inequalities, the poverty headcount is 56.8% (58.6% for females, 54.9% for males) and the Gini coefficient is 0.7 (7,28).

Of South Africa's labour force (16 – 64 years), 25% is unemployed (9). An estimated 24% of the employed work in the industrial sector, less than 5% work in the agricultural sector (9). Of the age-group 15 – 24 years, 28% is part of the labour force, of whom over 50% unemployed (29).

South Africa is home to one of the richest platinum mines in the world, located at the Platinum Belt in North West Province. Government census figures estimate that half of the population in the Platinum Belt are migrants, most frequently living as backyard dwellers[2], or living in one of the informal settlements near mines (30). In 2011, more than 1.2 million households in South Africa were living in shacks[3]. More than 300.000 adolescents live in informal settlements in South Africa (31).

[2] Persons living in a shack in a backyard of formal housing
[3] The 1.2 million households living in shacks does not include shacks that are build in backyards of registered houses according to the housing development agency

2. Problem analysis, justification, objectives and methodology

This chapter starts with a brief analysis of adolescent pregnancy and the outcomes in South Africa, followed by a justification for this thesis. Thereafter the objectives and methodology are described.

2.1 Problem analysis

Around 11% of all the women giving birth worldwide are between 15 and 19 years old, approximately 16 million girls in this age group, and one million girls below the age of 15 give birth per year, mostly in low- and middle-income countries (5).
The adolescent birth rate in South Africa is declining slowly, from 54/1000 girls aged 15 – 19 years in 2007 to 49/1000 in 2013 (32), yet 39% of girls in this age group reported a pregnancy (16). Of South African female students who ever had sex, 22% had children (33).
The majority of adolescent fertility in South Africa occurs among girls aged 17 to 19 years (34), 15% of girls give birth before the age of 18, and 1.1% give birth before the age of 15 (26).

The consequences of adolescent pregnancy can have a direct or lasting impact on girls' health. Complications during pregnancy and childbirth are the second cause of death among 15 to 19 year old girls (5). Yearly about 70.000 adolescents die from pregnancy and childbirth related consequences (25).

Adolescent mothers have a higher risk of eclampsia, puerperal endometritis, systemic infections, low birth weight, preterm delivery and severe neonatal conditions, compared to 20-24 year-old mothers. The risks of adverse perinatal outcomes increases with decreasing maternal age (35). A recent study, using data from 144 countries, does suggest that adolescents aged 15 -19 years are at an increased risk of maternal mortality compared with women in their early 20s, although not greater than women in their 30s, whilst young adolescents (below 16 years) have an important excess risk of maternal mortality (36).

In South Africa, the in-facility delivery rate[4] for girls below 18 years in 2013 was 8% (varying from 5 – 13% between the districts) (21). One in eight adolescents deliver by caesarean section (15), and 36% of all maternal deaths are among girls below 18 years (37).

Among pregnant adolescents the HIV prevalence is substantially higher, 20% of pregnant adolescents are HIV positive (13,38), as immunological changes during pregnancy and lactation rise the susceptibility of getting HIV (34). In 2012 the HIV prevalence among adolescents 15 – 19 years was 3.2%. Of the newly HIV infected adolescents 82% were female (39).

About 22 million unsafe abortions take place yearly, 15% of which among adolescents aged 15 -19 years (6). In Southern Africa the estimated unsafe abortion rate is 9/1000 women aged 15-44 years (6). In South Africa, where despite the lifting of legal barriers to safe abortion in 1996 as articulated in the Choice on Termination of Pregnancy (CTOP) Act, access to safe abortion is a problem, especially for adolescents (19,40). Three out of five women admitted in hospital for complications of abortion are below the age of 20 years (15).

Pregnancy also impacts on adolescents' education and economic independence (25). Despite the 1996 South African Schools Act, making it illegal to expel pregnant students, studies indicate a causal relationship between adolescent childbearing and school drop out as well as fewer completed school years, with only a third of adolescent mothers returning to school (34,41,42). Factors related to this may be poor performance at school before the pregnancy, young age of the adolescent, poor implementation of school policy, stigma and poor support from family, peers and school (34).
Children of adolescent mothers, especially of very young mothers, are also at risk of school drop out and lower educational attainment, attributed to the education level and economic circumstances of the mother (43).

Of notice for the analysis of adolescent pregnancy in South Africa is the diversity in social patterns (26,42). It is estimated that adolescent pregnancy is 60% more likely to occur in rural areas, 3 times more likely among girls with lower education and 6 times more likely among African

[4] The proportion of girls < 18 years who give birth in facility over all women giving birth in facility. This does not include girls who revert to abortion or don't access a facility to give birth, hence is a weak proxy indicator for adolescent pregnancy.

and Coloured girls, compared to Indian and White adolescents (42). The difference between population groups can be attributed to the diversity in social conditions adolescents grow up, inequitable access to health services and education, and cultural differences (34).

2.2 Justification

Pregnancy and its consequences are a cause of suffering and death for many adolescents, and the health system currently still fails to appropriately address the factors influencing adolescent pregnancy and the outcomes. Identifying factors influencing adolescent pregnancy and existing promising practices to address this, in the context of South Africa's diverse cultural and geographical characteristics, is relevant and will help to develop recommendations for effective contextualised strategies to overcome this major public health issue. The findings from this study may be useful in other similar contexts as well.

2.3 General objective

This thesis aims to contribute to improving preventive and response interventions for addressing adolescent pregnancy in South Africa.

2.4 Specific objectives

1. To explore influencing factors of adolescent pregnancy in South Africa.
2. To identify effective approaches to address adolescent pregnancy and unsafe abortion in South Africa and beyond, to be rolled out in South Africa.
3. To formulate recommendations for policy makers for addressing adolescent pregnancy in South Africa.

2.5 Methodology

A comprehensive literature review was conducted to analyse aspects related to adolescent pregnancy as outlined in table 1.
Where relevant, literature related to HIV and adolescent sexual behaviour has been used, as unprotected sex is a common risk factor (34).

Table 1: Search strategy

Sources:
Data base and search engines: PubMed, Google and Google Scholar
Institutional and Government Websites: DoH, UNFPA, WHO, IPAS, UNICEF, Guttmacher, research gate net, IPPF
Literature:
Published peer reviewed and grey literature
References followed up.
Delimiters
English language, published between 2001 and 2015

	Step 1:	**Step 2:**	**Step 3:**	**Step 4:**	
Chapter	**Broad key words international and Sub-Saharan Africa literature**	**Additional key words used in various combinations to for international literature**	**Principle key words, South African literature**	**Additional key words used in various combinations for South African literature**	**Prioritised literature**
Background and problem analysis	"Adolescent Pregnancy" OR "Teenage Pregnancy"	'unintended' 'unwanted' 'abortion' 'backstreet' 'unsafe' 'framework' 'consequences' 'health' 'sexual behaviour' 'STI' 'HIV' 'Contraceptives'	"South Africa" AND "Adolescent Pregnancy" OR "Teenage Pregnancy"	'health' 'HIV' 'consequences' 'unintended' 'unwanted' 'abortion' 'STI' 'backstreet' 'unsafe' 'demographic' 'education' 'mining' 'migration' 'sexual behaviour' 'Contraceptives'	Government reports and surveys
Reviews of adolescent pregnancy determinants	"Adolescent Pregnancy" OR "Teenage Pregnancy"	'influencing factors' 'gender' 'determinants' 'family' 'parents' 'peers' 'age' 'agency' 'substance abuse' 'child marriage' 'sexual and reproductive health services' 'school' 'violence' 'poverty' 'sexual behaviour' 'STI' 'HIV' 'Contraceptives'	"South Africa" AND "Adolescent Pregnancy" OR "Teenage Pregnancy"	'influencing factors' 'gender' 'determinants' 'family' 'parents' 'peers' 'age' 'agency' 'HIV' 'substance abuse' 'child marriage' 'sexual and reproductive health services' 'school' 'violence' 'migration' 'STI' 'mining' 'policy' 'poverty' 'sexual behaviour' 'Contraceptives'	International peer reviewed, and South African peer reviewed
Effective approaches	"Adolescent Pregnancy" OR "Teenage Pregnancy"	'strategies' 'interventions' 'sex education' 'youth friendly services' 'peer education' 'contraception' 'safe abortion'	"South Africa" AND "Adolescent Pregnancy" OR "Teenage Pregnancy"	'strategies' 'interventions' 'sex education' 'youth friendly services' 'peer education' 'contraception' 'safe abortion'	1. Systematic reviews 2. Articles describing international effective strategies 3. Articles describing successes and barriers of interventions in South Africa

2.6 Conceptual framework

This section describes briefly a range of frameworks applied to analyse factors influencing adolescent pregnancy. Blum's interpretation of the ecological model, and how this model is applied for this thesis, is described in more detail.

Viner et al (2012) described the conceptual framework of the WHO Commission on Social Determinants of Health by Solar and Irwin, categorised in structural and proximal levels of determinants for adolescent health (44). Mundigo was also guided by proximate and structural determinants, when analysing determinants of unsafe induced abortion (45).
These models derived from the social determinants of health, will not be applied for this thesis as not all determinants in this model would be equally relevant to the topic, and the many aspects of this framework would make it challenging to organize the findings.

Goicolea developed a framework, analysing the gender and rights aspects impacting adolescent pregnancy (2). Although this is an interesting focus, it would probably narrow down the scope of this thesis' inquiry, whereas the ecological model does provide space to describe these factors within the various levels of the ecological model.

The ecological model as applied by Blum organises determinants of adolescent pregnancy in the following categories: Individual, family, school/peers, community and national (25). This model covers the entire range of factors influencing adolescent pregnancy and their relationship. It helps to understand the issues and develop and implement most effective interventions, as Svanemyr et al did by applying the ecological model to organize key elements of enabling environments for adolescent SRHR (46).

United Nations Population Fund (UNFPA) adapted Blum's model, applying factors in each level of the framework (25). UNFPA's application of the framework has been adopted for this thesis as depicted in figure 2, whilst some of the factors in each level have been adapted, to enhance a broad focus, relevant for the South African context.

Figure 2: Ecological model (25)

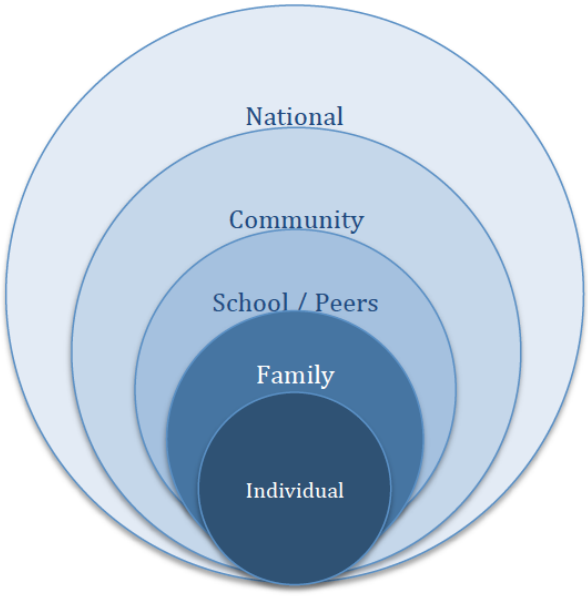
National:
- *International agreements and treaties*
- *Laws and policies*
- *Poverty*

Community:
- *Access to contraception & SRH services in the community*
- *Access to safe abortion services in the community*
- *Gender norms*
- *Climate of SGBV*
- *Social context in which adolescent grows up*

School/Peers:
- *School attendance*
- *School based programmes*
- *Peers*
- *Partners*

Family:
- *Parent-child relationship*
- *Family values and expectations*

Individual:
- *Age of puberty and sexual debut*
- *Adolescents' value system and desire to become pregnant*
- *Knowledge, ability to negotiate and use of contraceptive*



3. Factors influencing adolescent pregnancy

In this chapter, Blum's ecological model is applied to organize factors influencing adolescent pregnancy. Taking into account that the range of factors are complex and inter-linked (25).

3.1 Individual level factors

Individual level factors described in this section are age of puberty and sexual debut, adolescents' value system and desire to become pregnant, knowledge, ability to negotiate and use of contraceptives, agency and substance abuse.

3.1.1 Age of puberty and sexual debut

Puberty is an important moment in the developmental transition adolescents are going through. For many girls this occurs at an age when their intellectual and decision-making competences are not yet fully mature (47). Globally the age of puberty is declining, generally menstruation starts between 12 and 13 years, sometimes even before. For boys, puberty starts generally up to two years later than for girls (47).

Globally adolescents are vulnerable to violence, neglect, abuse and exploitation in times when negative gender roles and expectations are reinforced (48). Factors including HIV, poverty, political and social conflict, as well as not living with parents and not going to school, additionally increase vulnerability of very young adolescents between 10 and 14 years. Having little assets, they are vulnerable for exploitation, non-consensual and unprotected sexual relationships (49).

In 2012, 11% of South African youth reported that their age of sexual debut was before 15 years (50). Brahmbhatt et al found a relationship between early sexual debut and pregnancy (51), whilst Toska et al didn't (52). Jewkes et al argued that it is not early sexual debut which poses a risk for pregnancy, rather other circumstances in which this happens, such as coercion, mediated through inequalities in power relations (38).

Although 63% of adolescents in Limpopo, perceived early sexual debut as a risk for pregnancy, they continued to engage in sex, with the hope not to fall pregnant, or opt for abortion if it would happen, indicating a conscious risk taking behaviour (53).

3.1.2 Adolescents' value system and desire to become pregnant

In South Africa, two thirds of adolescent pregnancies are unwanted (34). Some adolescents may see pregnancy as a way to become adult or gain status, within a cultural context idealizing motherhood (54).
Literature from South Africa indicates that for some adolescent girls motivation to become pregnant is driven by the need to prove fertility, maturity and identity as a woman (55,56). Hence childbearing can be a positive fulfilment of expectations about growing up and the associated status of marriage and motherhood, as well as the pleasure and rewards of having a baby (25). Nevertheless, literature suggests that in South Africa, early pregnancy would be against many adolescents' value system, having more conservative values concerning sexual activities and perceiving pregnancy as an event with negative health and social consequences, including feelings of blame and guilt (53,56).

3.1.3 Knowledge, ability to negotiate and the use of contraceptives

Globally young girls' contraceptive use is only 22%[5], compared to 60% for women above 30 years (57).
The South African national youth risk behaviour study from 2008 showed that 45% of students who had sex used condoms, 31% using them consistently (older adolescents using them more consistently compared to younger adolescents). 18% used no method to prevent pregnancy. Injectable contraceptives were used by 7%, contraceptive pills by 5%, withdrawal by 3% and the morning after pill was used by 1.4%. 2.6% used other methods[6] (33).

Important factors related to contraception use globally, include the lack of complete, accurate information about sexuality, reproduction and contraception, and ability to negotiate condom use and make decisions about their sexuality (25,54). Evidence shows that this is also true for South Africa; both poor knowledge and understanding of contraceptives and SRH as well as poor sexual negotiation skills are factors influencing adolescent pregnancy (55,56). In some communities, where families and schools encourage the use of SRH services, adolescents' knowledge and access to contraception seem less compromised (58).

[5] For females 15 to 24 years old
[6] Sample size was 3579 students, missing data or no answer for the remaining 18%

The knowledge adolescents may have might be overshadowed by misperceptions, the unplanned nature of sex, and beliefs that requesting a condom is like accusing a partner of being HIV positive (59). Mchunu et al claim that South African youth engage in risky sexual behaviour because of lack of knowledge as well as poor decision making, not thinking about the risks involved in unprotected sex (55). 61% of adolescents in a study in Limpopo perceived that their sexual knowledge was inadequate to make choices and address issues around sexuality (53). The lack of knowledge is illustrated by the following quotes: *"One should use traditional herbs to prevent an unwanted pregnancy. These herbs are well known by villagers and are readily available in the local vegetation"*. *"The girl has to 'jump-jump' a few times after sex and she would not fall pregnant. The process would lead to the sperms flowing out of the reproductive tract to prevent pregnancy"* (60).

A cross sectional study done in 4 provinces in South Africa found that 55% of the adolescents got pregnant due to not understanding how pregnancy happens or the risks involved (55). The same study found however that the clinic nurse had talked to 74% of the female participants about reproduction. 58.5% of these young women had ever attended a clinic for SRH services. Whilst many girls attended a clinic for SRH services and spoke with the clinic nurse, there is still a lack of accurate information, which suggests that the quality of the services may be poor, and messages from the clinic nurse alone may not be sufficient.

To prevent both unwanted pregnancy and Sexually Transmitted Infections (STI) including HIV, condom use is promoted in combination with non-barrier methods of contraception to prevent pregnancy (17). There seems a general agreement that contraceptive use, condom use at first sex, and consistent condom use are protective factors for adolescent pregnancy in South Africa (51,52). There are however opposing visions in the effectiveness of the use of condoms only. For example, a study in Eastern Cape concluded that using only a condom was a risk factor for pregnancy (linked with commitment to consistent use and breakage), whereas hormonal contraceptives were found protective (61).

It has to be noted that progestogen-only injectable contraception (encouraged in South Africa's guidelines) may increase the risk of acquiring HIV, but interpretation of available studies is hampered due to their methodological limitations. WHO recommends that until further clarity the use of injectable contraception should be continued (62).

Whilst some studies indicate that girls are becoming more assertive in relationships, evidence also shows that in transactional relationships and when the partner is much older, the ability to negotiate condom use was reduced among rural and urban adolescents (52,63). This shows that girls' ability to negotiate condom use depends on the relationship and the girls' agency.

3.1.4 Agency

Agency is the capability to act, it refers to the power to intervene, the capability of an individual to do things and make choices. The ability to exercise SRHR depends on the adolescents' agency to control her health and body (64).
Agency is controlled by gender-power relations, the subordinate position of adolescent girls in the gender and social hierarchy is a barrier to the girls' agency, her power to make actual choices around sex and pregnancy (2,42).

Literature from South Africa describes that adolescent girls' agency was constrained by patriarchy, poverty and limited family support, once in a relationship. Within these constraints girls did exercise agency in for example, the choice of a partner (65).

3.1.5 Substance abuse

The South African national youth risk behaviour survey 2008 found that 16% of students who ever had sex, reported having used alcohol before sex (19.5% of the boys, 11.6% of the girls). 14% reported having used drugs before sex (33). In a rural area, a study linked substance abuse, especially alcohol with a lack of social infrastructure and entertainment, consequently going to local bars became a normal part of adolescents' life (56). High levels of substance use was found as one of the determinants of adolescent pregnancy in Johannesburg (51).

The most important individual level factors influencing adolescent pregnancy identified are the circumstances in which early sexual debut happens and adolescents' knowledge and ability to negotiate sex and condom use, linked with the girl's agency.

3.2 Family level factors

As family level factors, first parent-child relationships will be described followed by family values and expectations.

3.2.1 Parent-child relationship

Parents' influence on adolescents is very important, defining directly and indirectly the future of their children (25). Kirby's review of international evidence shows that parents' support and parental monitoring of adolescents' activities, presence of both parents in the home, decrease the risk of adolescent pregnancy (66). This is in line with findings from South African literature (34,52,67). On the other hand, not all studies confirm the impact of poor parental supervision and orphan-hood on adolescent pregnancy (52,53), depending on the circumstances adolescents live in.

3.2.2 Family values and expectations

Values and family norms, regarding sexuality and gender will influence how parents communicate with their children. Whilst parent-adolescent communication about sexuality is found to be a protective factor for adolescents' risky sexual behaviour, it is often not or insufficiently discussed, mainly because the subject is uncomfortable for many (66). In South Africa also the communication between parents and their children about sex is low (68).

Families' view and openness towards sexuality, as well as their position towards child marriage are important factors. Adolescent pregnancy occurs more outside the context of marriage in South Africa, which is a major difference with many other Sub Saharan African countries (51,69). In South Africa, 1% of women are married before the age of 15, and 6% before 18 years (70). The children's act prohibits marriage of children below the age of 18 without the consent of the parents (71).

Child marriage is usually followed by the expectation for the girl to become a mother (25), or the marriage can be a result of unintended pregnancy, though uncommon in South Africa (34). In South Africa, traditional marriage requires the payment of lobola; cash or cattle paid by the groom to the parents of the bride. Increasing poverty made marriage

increasingly unaffordable, hence cohabiting without marriage became very common and the median age of marriage increased (12).
Economic motives can also be a reason for families to drive their daughters into early marriage with more affluent and mostly older men, or into transactional sexual relationships (72,73).

3.3 School and peers level factors

In this section school attendance and the impact of school-based programmes is described, followed by the influence of peers and partners.

3.3.1 School attendance

Access to schools and drop out of schools is associated with adolescent pregnancy (74). The correlation between educational attainment and reduction of adolescent pregnancies has been well documented, but its' causality is much debated (25). There is some evidence that the longer a girl stays in school, the higher the likelihood she will use a modern contraception, and lower likelihood of early pregnancy (75). Underlying factors for dropping out of school early include economic barriers and poor performance at school (34).
South African evidence shows that dropout often precedes the pregnancy (34). Studies in both rural and urban South Africa found that being in school was a protective factor for adolescent pregnancy, whilst long term school absence was associated with higher rates of adolescent pregnancy (51,52,69). Student pregnancies occur at a higher rate in schools located in poor neighbourhoods, poorly resourced schools and combined schools with greater age mixing (34).

3.3.2 School based programmes

In South Africa the Integrated School Health Programme (ISHP) addresses adolescent pregnancy, through promotion of contraception use among adolescents and supporting health promotion and peer education in schools (21). Often sex education is only given in the final years of secondary school, when some adolescents already dropped out of school or are already sexually active (42). The focus of sex education in South Africa has been on targeting sexual risk factors, but that is not sufficient, as non-sexual risk factors, including relational factors, gender norms and dynamics, family structure and education are key as well (34).

3.3.3 Peers

Peer pressure can encourage or discourage early sexual debut (76). In the broader social network, peer pressure and fear of rejection by friends, influences adolescent pregnancy (53,56). Belonging to a group is an important part of adolescence. A South African study found that many adolescents would engage in high risk sexual behaviour in order to have access to a group, rather than being excluded (59). The sexual behaviour of boys seems more impacted by their peers compared to girls (67). This has to do with masculinity and femininity norms. A quote from a schoolboy illustrates this: *"Even if I don't want to have it (sex), I will do that (have sex) or she will talk… then they will say that I am a sissy (not a real man, a coward)"* (59). School environment, friends and behaviour of peers influence each other constantly (53).

3.3.4 Partners

Gender-power dynamics, are important factors within intimate partnerships. Having a boyfriend, being desirable to a man, and the quality of the relationship are very important for adolescent girls, which is important to understand the gender power dynamics and consequently the risk factors (65). Rape and coerced first sex is very common in South Africa, often perpetrated by the intimate partner (65). Jewkes et al found that for two thirds of adolescent respondents to their study, their first sex was against their will, and pregnant adolescents had experienced rape significantly more common (38). They also found that pregnant adolescents' had often much older partners than non-pregnant adolescents (38).

Substantial age difference can be a major determinant of adolescent pregnancy as there is a higher risk of coerced sex and pregnancy, as well as STIs including HIV. The power dynamics in such relation makes it more difficult for the girl to negotiate sex and protection (25). It is estimated that in South Africa a third of adolescent girls aged 15–19 years are, or have been involved in age-disparate relationships; having a partner more than five years older (50). Engaging in age disparate sex was associated with higher rates of adolescent pregnancy, as financial support from an older partner and the gender power imbalance within such relationships can result in reduced use of condoms, hence unsafe sex (38,52,56).

Both age difference and transactional sexual relationships have been associated with adolescent pregnancy (38,51). Transactional sexual relationships pose conditions under which power dynamics are such that

there are few opportunities for girls to negotiate safe sex and make adolescent girls also vulnerable to pregnancy. Underlying factors for girls to exchange sex for goods include the girl's struggle to meet direct material needs (34,54).

If the male partner is able to support and is emotionally involved, the outcomes of adolescent pregnancy may be less severe (34). In a study in a township of Cape Town a trend was observed that young men want to be involved in care for their child. Most adolescent mothers in the study received support from their family and the father (58).

Whilst this thesis focuses mainly on adolescent girls, it has to be noted that there are also risk factors linked with adolescent fatherhood. Adolescent fatherhood and lower educational attainment are associated in South Africa, resulting often in inability to financially support the mother and child. Possibly the socioeconomic situation of adolescent fathers could equally be a risk factor, but needs to be researched more (34).

The partners' influence seems to be a predominant factor influencing adolescent pregnancy, whilst peer pressure and school attendance play an important role as well. Being in school provides an opportunity for sexuality education, but the school based programmes require improvement before effectiveness can be claimed.

3.4 Community level factors

Here, community level factors including, gender norms, climate of Sexual and Gender Based Violence (SGBV), social context, and access to contraception, SRH and safe abortion services, will be described.

3.4.1 Gender norms

The causes of adolescent pregnancy are embedded in girls' gendered social environment (42). Socially prescribed gender norms influence individual and interpersonal gender perceptions and gender-power dynamics. Gender-power inequities are strongly linked with other aspects, including socio-economic status, education and social status attributed to age (42).
In South Africa it was found that adolescent girls' sexual practices, including having multiple and older partners were rooted in and flowed

from their gender identities, which were mostly shaped by their socio-economic vulnerability and their submissiveness to male dominance (65). Norms regarding femininity can influence adolescent girls into submissive roles and pose barriers to assert themselves in sexual relationships. Norms related to masculinity can influence adolescent boys to take sexual risks, perpetrate violence and can encourage unequal decision making in sexual relationships (46). Gender norms in a community will determine the exposure of girls to SGBV.

3.4.2 Climate of Sexual and Gender Based Violence

Globally young women are at risk of sexual violence by an intimate partner, or other person known to the girl (77,78). The first sexual experience of many adolescent girls is forced (78,79).

South Africa has one of the world's highest SGBV rates, survivors being mostly between 16 and 25 years (80). In many South African communities women are expected to be submissive to men, and sexual violence is seen as a routine part of a relationship (15). Literature shows that pregnant adolescents were over twice as likely to have a history of forced sexual initiation and frequently exposed to coerced sex and beating, compared to never pregnant adolescents (38,56). Frequent beatings and forcing sex are manifestations of male attempts to forcefully control the relationship (38).

A study in Eastern Cape concluded that inequitable gender power relations do increase risk of (unintended) adolescent pregnancy. An association with child sexual abuse and adolescent pregnancy was found, as well as physical abuse and adolescent pregnancy, but an association between adolescent pregnancy and power and control in intimate relationships could not be concluded, nor the link with forced first sex (61). A recent cross sectional survey among adolescents in three of South Africa's provinces found no association between any type of abuse and adolescent pregnancy (52). These outcomes may not necessarily reflect the true occurrence of the problem, girls may perceive violence as normal, or may not disclose experiences of forced sex; it is difficult to study the occurrence of sexual violence.

Speizer et al found that adolescent pregnancy was more common in South African communities where SGBV occurred more, whilst no association was found between individual-level violence and adolescent pregnancy

(81). The authors suggest this may indicate the importance of community norms and influences, and that communities with gender-power inequities, where women's agency is more suppressed have higher SGBV rates, whilst there may be fewer YFS in these communities.

3.4.3 Social context in which adolescents grow up

Many adolescents in South Africa grow up in a social context of informal urban settlements, labour migration and mining. What follows is an analysis of the literature related to the impact of these specific social contexts on adolescent pregnancy.

Adolescent pregnancy risk should be understood within the characteristics of the context and neighbourhood she lives in (51).
In Johannesburg it was observed that poor physical environment and exposure to neighbourhood violence, raised the odds of adolescent pregnancy (51). In the Platinum Belt 80% of the population lives in shacks, a cause for family disorganization and early sexual debut of adolescents (82).
Informal and rural areas in South Africa are commonly poverty entrenched. Growing up in such residential area's has been associated with an increased risk of early pregnancy (34).
Of all residential types in South Africa, people living in urban informal settlements have the highest prevalence of HIV[7] (13,83). In rural area's condom use was reportedly lower compared to other residential areas (83). Furthermore research shows that young women living in informal settlements face inadequate and sometimes harmful SRH service provision (84). Survey results are indicative of high risky sexual behaviour of youth in informal settlements (83), although a major association with adolescent pregnancy was not found (52). These findings suggest that it is not the type of residential area which poses a risk factor, but the conditions within these areas, such as poverty and availability of services.

Studies in various contexts show that mining operations can impact on the health and safety of mining communities, which has been documented for South African mining communities as well (82,85). Unwanted pregnancy as well as HIV are among the related health issues (82). The common migration to mining areas is a risk factor for increased likelihood of high-

[7] Residential types: Urban formal, urban informal, rural formal, and rural informal

risk sexual partnership. A key factor is the higher risk taking behaviour of migrants. Separation from the partner and the change of context due to migration (poor social conditions, living in overcrowded single sex hostels, poverty, unemployment or harsh working conditions, poor recreational facilities, lax social controls, and being surrounded by communities who have a strong dependency on the income of the miner), may result in sexual relationships outside marriage (82,86).
Sex work and transactional sex is more common in migrant and mining communities (82,86,87). Reasons for transactional sex in migrant communities are as in other areas, marginalized circumstances of women such as poverty, poor living conditions, low status, and increased lifestyle expectations (87,88), exacerbated by the exclusion of women from miner's employment (72). The dependency of unemployed women on working men puts women and girls in a subordinate position in which they can't negotiate condom use or refuse sex (87), which in turn results in high risk sexual behaviours as well as violence (88). Low condom use was reported, influenced by condoned risky behaviour, unequal gender relations, alcohol abuse and unavailability of free condoms (73).
The impact of migration on adolescents should be seen in a wider perspective of vulnerability, child rights and gender dynamics (73). Adolescence, gender and migration form a triangle of vulnerability aspects, many young women migrate to mining settlements to find no employment and revert to transactional sex, reducing the ability of girls to negotiate safe sex (73,87). Adolescent girls in these communities are sometimes being pushed by their family into transactional sexual relationships with mine workers (73).

An interview with a trauma counsellor in the Platinum Belt illustrates the challenges: *"Sex work is common. Young girls go to town just to get something to put on the table. There are problems with teenage pregnancies. Young women sleep with older men. Men tend to leave them when they are pregnant. This has resulted in some suicides."* (72)**.**

The risk factor for adolescent pregnancy isn't directly migrant labour, but the vulnerability of the migrant labourer to be involved in risky sexual behaviour. This is influenced by migration, but also the circumstances in these communities. The vulnerability occurs when people's ability to make free and informed choices is reduced due to social, cultural, economical and political circumstances. When individuals' capacity to effectively respond to health situations has been reduced, a risk situation has emerged (82).

3.4.4 Accessing contraception and SRH services in the community

In Sub-Saharan Africa, adolescents' unmet need for services, contraception and information is high, with 60% unmet need for contraception, accounting for more than 80% of the unintended adolescent pregnancies (89). This high unmet need, makes emergency contraception more important for adolescents, whilst globally adolescents have limited or no access to emergency contraceptives (90).

The unmet need for family planning for married adolescents in South Africa is much lower 17.7% (26). Since pregnancy occurs mainly outside of marriage in South Africa, this doesn't reflect a good access to contraceptives for the majority of adolescents who are unmarried.

With respect to SRH services for adolescent girls there are a few options in South Africa, including the Youth Friendly Services (YFS) targeting young people aged 10 to 24 years. South Africa aims to have YFS implemented in 70% of the PHC facilities of South Africa (15). In 2010, 47% of the public primary health care facilities implemented YFS (91).
Although, even if YFS accredited, many clinics do not provide YFS, because of shortage of staff, lack of training and lack of dedicated youth space. Barriers to access YFS include a lack of confidentiality and respect, judgemental attitude of nurses, and nurses asking for parents' consent[8] (53,91). Adolescents responding to a study in Limpopo perceived compromised access to YFS due to unavailability of 24/7 services and health related literature in clinics (73%), and nurses failing to provide health information related to emergency contraceptives (56.3%) (53).
When adolescents don't perceive health services freely available, this can impact on adolescent pregnancy (53).

3.4.5 Access to safe abortion services in the community

In many countries, adolescents encounter more access barriers to safe abortion, then adults. They often wait longer to seek abortion and more frequently use unskilled providers, or dangerous methods to self-abort. When complications arise, they delay in seeking care (92).

[8] Despite the law allowing for SRH services as of the age of 12 years, without parents' consent

Despite the legality of abortion in South Africa, studies find that backstreet abortion is the most probable scenario for adolescents opting to terminate their pregnancy (contributing to the underreporting of abortion) (40). In 2008 the South African national prevalence of students who reported an abortion was 8.2%. 51% reported that the abortion took place in a hospital/clinic, 20.5% went to a traditional healer, 10.2% to another place and 5.4% didn't know where it took place[9] (33).

Opting for abortion at a public health facility carries double stigma, of becoming pregnant and of opting for an abortion. Shame from parents and their fear of public censure is an important barrier as well as peers' gossip and adolescents' own moral worries, not wanting the community to know as adolescent pregnancy is seen as a disgrace for both cultural and religious reasons (40,93). Some women from North West province would go to another province to find abortion services, to escape stigma and looking for privacy and confidentiality (93). In Limpopo many myths about abortion existed in rural communities (94).

Whilst literature shows that many adolescents perceive abortion as an acceptable option many adolescents have inadequate knowledge of the legal and fee status of abortion (40,53,60,94), or the distance women have to travel for safe abortion services is too far (93). The decision making process involves often the adolescent girls' parents and/or her sexual partner, although some made the choice alone. Boyfriends' preferences strongly influence the abortion decision-making (40).
Factors influencing the decision making include, school disruption, stigma, financial situation, but absence of paternal support was found to play a pivotal role (40).

Health care providers' negative attitudes, refusing to provide abortion, or placing women on the waiting list, also form barriers to safe abortion (40,93–95). Whilst nurses themselves often perceive that there is a shortage of nurses providing abortion, and a lack of adequate resources, training, support and counselling for nurses (93,94).

[9] Some data missing

3.5 National level factors

In this section South Africa's commitment to international agreements and treaties, laws and policies, and poverty are described, and how this influences adolescent pregnancy.

3.5.1 International agreements and treaties

Adolescents are often unable to exercise their reproductive rights and prevent unintended pregnancy (89). Commitments to eliminate adolescent pregnancy are made at the Convention of the Rights of the Child (CRC) and the International Conference on Population and Development (ICPD) held in Cairo in 1994, reaffirmed in 1995 in Beijing at the 4th world conference on women (26,64). Both ICPD and the CRC recognised the evolving capacities of adolescents, developing maturity, and understanding to make informed decisions about SRH (96,97). The latter called on governments to guarantee making appropriate information and services available to adolescents without authorization of a parent or guardian (26). Decreasing adolescent fertility was one of the indicators of the Millennium Development Goals (MDGs), for monitoring progress in reducing maternal mortality (23).
South Africa aligned its policies and strategies, related to adolescent SRH to these and other relevant international resolutions, treaties and conventions (18).

3.5.2 Laws and policies of South Africa

The steady decline in adolescent pregnancy in South Africa has partly been attributed to progressive social and educational policies, focusing on empowering adolescents to prevent pregnancy (42,58). The current *National Strategic Plan* does not mention adolescent health (98), but (as outlined in chapter 1.2) there is a range of separate policies and strategies with a focus on adolescent SRHR, stressing the importance of free of charge, geographically accessible services including contraceptives and information. Confidentiality, choice and non-judgemental attitudes are recognised as important aspects of the services, but the policy is often not implemented (42). There are barriers to achieving SRHR in South Africa, and service delivery in the public health sector is not as good as it should be. SRHR services are not oriented to meet the needs of specific population groups including adolescents. There is poor management, a lack of strong stewardship and a lack of knowledge from health care providers about the full scope of SRHR services. Additionally, NDOH

recognises that there is a lack of applied research evaluating interventions to strengthen public and community commitment to gender equality and SRHR, including the impact of such interventions on adolescents (14).

The Department of Education guidelines *"Measures for the prevention and management of learner pregnancy" and* the *1996 constitution and schools act*, state that adolescents who fall pregnant should not be denied access to education (34). Also here implementation seems to fail, as only a third of adolescent mothers return to school (34,41,42).

In 1998, a child support grant was initiated in South Africa, some argue that this grant could be a determinant for adolescent pregnancy, which is not confirmed by evidence (42,55). In fact adolescent pregnancy seems to happen in all social levels of society, also to adolescents who don't qualify for the grant, only 20% of adolescent mothers access the grant (42,69).

3.5.3 Poverty

Poverty in South Africa is widespread with large variations per province (79% in Limpopo province versus 33% in Gauteng Province) (28).
Literature describes the association between poverty and adolescent pregnancy in South Africa (55). This links again to the earlier described impoverished circumstances of living in rural and informal areas, as well as the trade-offs girls have to make, like transactional sex, to meet their needs (34). Lower adolescent pregnancy rates are reported in predominantly urban and wealthy provinces, including Gauteng and Western Cape, compared to mostly rural and poor provinces, like Eastern Cape, Northern Cape, KwaZulu-Natal and Limpopo (21,34).
Poverty may exacerbate the dependency and relative lack of power of girls in a relationship (38,65). Linked to that it was found that for girls being employed or unemployed had an association with adolescent pregnancy in South Africa (55). Poverty was also identified as one of the barriers to access safe abortion (93).

Whilst South Africa developed numerous progressive laws and policies attempting to address adolescent pregnancy, inspired by international agreements and treaties, implementation remains a challenge and adolescent pregnancy is yet to be addressed more effectively, taking into account the associated inequitable socioeconomic circumstances in South Africa.

3.6 Concluding remarks

The main factors influencing adolescent pregnancy in South Africa are related to the circumstances in which sexual relationships, and early sexual debut happen, including coercion and underlying gender-power inequity. Adolescents' value system and agency are influenced by societal and family norms. Girls' ability to negotiate condom use and sex largely depends on the relationship dynamics within the sexual partnership.

The likelihood that an adolescent girl is exposed to, or engaged in risky sexual behaviour is exacerbated when she lacks knowledge about sexuality and contraception. Norms, values and communication in families are impacting on the adolescent girl. Peer pressure, fuelled by notions of masculinity and femininity, influences adolescents' sexual behaviour.

Being in school is a protective factor for adolescent pregnancy in South Africa and the school environment will have an effect on adolescents' sexual behaviour. Where there are opportunities for, yet weakly implemented, sex education programmes.

The impact of the sexual partner may be one of the most direct determinants of adolescent pregnancy in South Africa.
The inequity in gender-power is amplified when the sexual relation is imbalanced, such as in age disparate- and transactional sexual relationships, which are both common in South Africa.
Transactional sexual relationships are forthcoming out of socio-economic hardship, which is also found in the mining communities, where risky sexual behaviour is common.

Inequitable gender norms are deeply rooted in South Africa's society, influencing communities, families, schools, services, peers, partners and adolescent's self-reflection. It places girls in submissive roles, constituting gender-power imbalance in relationships, which limits girls' agency and her ability to control and make actual choices around sex and pregnancy, and exposes girls to SGBV.

When zooming in on the impact of the social context in which adolescents live (labour migration, living in rural areas, informal settlements, mining areas), it can be concluded that the risk of pregnancy depends on lack of adequate SRH services, girls exposure to violence and disorganization,

gender inequalities and poor socio-economic circumstances, causing dependency, constituting risky sexual behaviour and transactional sex.

In addition to this spider web of risks, YFS and safe abortion services are often unavailable, inaccessible or unacceptable, because of health workers' judgmental attitude, shame, stigma or lack of confidentiality. Implementation of South Africa's progressive laws, policies and guidelines to address adolescent pregnancy is often hampered. Last but not least, widespread poverty and large socioeconomic inequities in South Africa remain root causes of adolescent pregnancy.

4. Applying effective approaches to address adolescent pregnancy in South Africa

This chapter presents an overview of promising effective approaches to address adolescent pregnancy and its outcomes. Outlining international evidence, as well as effective approaches in South Africa.

4.1 Comprehensive sexuality education

Comprehensive sexuality education can be implemented in schools, which coincides with the age many adolescents begin to engage in sex (99). As adolescent pregnancy is influenced by factors from multiple levels, multi-sectoral, linked, comprehensive approaches are also required at home, community and structural level (34,99). Universal access to information and skills at an early age should be provided, to allow adolescents to make informed decisions (34).
Systematic reviews on the effectiveness of sex education programmes in various countries show that there is evidence these programmes have a positive impact on knowledge and behaviour, in terms of delay and reduced frequency of sexual activity, increased contraceptive and condom use, and improved psychosocial facilitating factors (100,101). The impact on pregnancy is often not measured adequately. Out of 31 studies who did, only 8 concluded a positive impact on reducing pregnancy (100,101). These programmes were effective in rural and urban areas, in both school and community settings, for male and female adolescents of all ages, racial and ethnic groups (101). Programmes with an empowerment approach, stressing critical reflections on gender, power and rights in partnerships tend to have a bigger impact (102). Abstinence only programmes were found not effective (103). It is desirable that interventions have an integrated approach addressing both HIV and adolescent pregnancy, but with a clear focus on the latter (34). UNFPA identified essential elements for sexuality education (see annex 1).

The quality, reach, range and scale of sex education programmes in South Africa vary widely. Reviews concluded that the comprehensiveness is inadequate, and should enhance focus on gender norms, sexual coercion and substance abuse (104,105). The programmes had little effect on sexual behaviour, but impacted positively on knowledge, attitudes and communication about sexuality (34,106). School based sex education programmes (Life Orientation) rely much on the attitude, capability and

willingness of the teacher to provide sex education, influenced by social and cultural factors (104). Hence it is important that the Life Orientation curriculum provides detailed guidance on how to provide sex education, and teachers must be equipped with skills and confidence to provide sex education (104), whilst recognizing that this may not be sufficient to address teachers' readiness and motivation.

4.2 Mass media and multimedia interventions

Social media and text messaging changed communication a lot, and are promising means to provide sex education, and increase access to contraceptive use (107–109). A review of media based interventions concluded that there are indications that such interventions may impact on delay of sexual debut and impact on condom self-efficacy and increased knowledge about pregnancy, but more research is needed to provide more robust evidence (108).
About 50% of adolescents responding to the 2012 National HIV survey said that television programmes were the most influential source of information (encouraged them to consider HIV as a serious condition) (50). Whilst mass media campaigns have the ability to reach large numbers of adolescents, it is difficult to evaluate how effective they are in increasing knowledge and influencing behaviour (110). LoveLife, Soul City and Khomanani are the three largest multi-media campaigns in South Africa and have been found effective in achieving behaviour change, including condom use, enhanced communication with, and faithfulness to partners. It is however questionable to what extend these effects are influenced by other interventions and sources of information. Additionally, these campaigns have a primary focus on HIV, whilst a specific focus on adolescent pregnancy would be required (34).

4.3 Engaging parents

Literature suggests that if parents are supported through programmes, they are more comfortable and more likely to communicate about sexuality with their children, which sometimes results in changes in sexual behaviour of adolescents, especially if adolescents are involved in the programmes (46,66). One common challenge of such programmes is the reluctance of parents to participate. Programmes focusing on increasing parental monitoring may have an impact (66). Review of literature suggests that adolescents who received comprehensive sexuality

education had the intention afterwards to communicate with their parents about sexuality (66).

4.4 Peer education programmes

Effects of peer-led programmes tend to vary, often the peer educators benefit the most, but reviews concluded that some interventions did increase knowledge and condom use, and impacted on delay of sexual debut and gender equitable attitudes (46).
Effectiveness of peer education programmes depends highly on completeness and quality of implementation, which was found a challenge for Rutanang, a government led peer education programme in Western Cape, South Africa. The programme focuses on 15/16 years old students, aiming to delay their sexual debut and increase condom use. It uses a cascade approach, training peer educators, who will educate and influence their peers in school. An evaluation of the programme found no effect on age of sexual debut or condom use. In fact, those who followed the peer education were more likely to start sex early. There were difficulties to effectively implement the programme (111).
Another peer education program is Vhutshilo, targeting 14 -16 year-olds through 17-19 year-old peer-educators. An evaluation of this program found that it could have an effect on adolescents' knowledge, help-seeking behaviour and agency. However more research is required to confirm the actual impact of Vhuthsilo (112). Findings of this study suggested that this programme could be successful, as it targets youth with lower socio-economic status, for whom the programme could be more valuable (112).

4.5 Socio-economic support programmes

Microcredit and cash transfer interventions focus on economic empowerment and poverty reduction, aiming to strengthen the status of adolescent girls within their families, may increase their access to schools and reduce the need for girls to engage in transactional sex (46). Such programmes can improve SRH outcomes for adolescents, but it is questionable (as for other approaches) how much impact they have on girls' agency and gender dynamics, and they should be combined with other approaches such as life skills (46). Interventions that encourage school attendance have been found effective in reducing adolescent pregnancy, reinforcing the importance of educational opportunities for girls, and empowering girls with skills and comprehensive sexuality

education (26,113). An example is a Kenyan programme, providing school uniforms to reduce the cost of education, which reduced school drop-out and impacted on reducing the likelihood of girls to be married (114).
A cash transfer project in Malawi, helping girls to go to school, impacted on reduced childbearing among girls initially out of school (115).

The "safe spaces model" aims to improve adolescent girls' agency through providing a safe space with support from peer- or older mentors, life skills, vocational skills, socialization and recreation (46,116). Safe spaces programmes are increasingly recognised as promising approaches for better SRH outcomes for girls (116), UNFPA encourages the safe spaces model to improve adolescent's health and socio-economic situation (26).

4.6 Addressing social and gender norms and engaging men and boys

Community mobilization and outreach are essential to lower stigma related barriers for adolescents to access services, and to address social and gender norms in the community (25,77,117). Evidence shows that a wider community support can be obtained through engaging key community gatekeepers, such as religious leaders (46).

Promoting more equitable power dynamics, and addressing norms, believes and attitudes should be a key intervention, and influences improved health behaviour and outcomes (109). International communities are realizing more and more that it is essential to engage at multiple levels with men and boys as partners, when promoting long-term changes in gender-equitable norms, preventing gender based violence and promoting SRHR, which may impact on their own lives as well (118,119). Various promising practices are reported, and it is worthwhile to strengthen evidence for the effectiveness of interventions in different settings (46).

Engaging men and boys and changing gender norms can reduce age-disparate relationships (117). A programme attempting to do this is Stepping Stones in South Africa. There is evidence that Stepping Stones generates positive outcomes, allowing communities to reflect on gender norms and values, discuss and act on social change and individual behaviour change around sexuality and relationships (117).
Another programme in South Africa is Men As Partners (MAP), implemented by EngenderHealth and Planned Parenthood Association of South Africa (PPASA), aiming to promote gender equity, and reduce HIV

and sexual violence, through working with men. Evaluations of MAP demonstrate a change of gender perceptions (117).

Creating Futures is an intervention using economic empowerment of young men and women, through helping participants find a job or start a business, which enables livelihood strengthening. An exploratory study found that this intervention, combined with Stepping Stones can positively impact on gender attitudes of young men and women in informal settlements and reduced intimate partner violence. Adolescent girls who participated in a similar programme in Uganda experienced far less unwanted sex afterwards (120).

4.7 Integrated school health programme

South Africa has a progressive Integrated School Health Policy, stating that school health services should be provided in all schools including: Health education and promotion (about SRH, adolescent pregnancy, menstruation and contraception), counselling regarding SRH, provision of dual protection contraception and ensuring access to SRH services. The reduced pregnancy rates might be partly attributed to the sub-dermal contraceptive implant, provided through the ISHP (21), although the implementation of the school health program is currently substandard, with a low coverage of sub-districts, schools and students (121).

4.8 Access to youth friendly health services

A recent systematic review concluded that there is yet limited but convincing evidence that youth friendly family planning services impact on reproductive health outcomes. An association was found with improved contraception use, and increased use of services. Two out of three studies examining long-term outcomes found significant reduction of adolescent pregnancy (122). These interventions included clinic-based services, in-depth counselling, and education adapted to the development level of the adolescent, providing reassurance and social support, outreach by peer providers and phone calls for follow-up (122).
YFS should be linked with sexuality education, and combined with creating supportive environment, through community awareness and acceptance activities (109).

Unfortunately, access to, impact and implementation of the YFS program is limited in both rural and urban settings in South Africa (91,123).

Reviews of studies about interventions, which increase adolescents' utilization of health services (availability, accessibility and acceptability of services, but not effective coverage) in developing countries, concluded that there is evidence for the effectiveness of programmes which include training, improving clinic facilities and community level activities, if they are well monitored for coverage and quality (124,125). Training for service providers should focus on improving skills, attitudes and knowledge, to respectfully and confidentially address adolescents' health needs, providing effective treatment and information. Making improvements to clinic facilities to become adolescent friendly can include changing opening hours, reducing fees, adding recreational activities, involve peer educators, or physical changes to the clinic to increase privacy. Implementing community level activities include public meetings and raising awareness (124). Training service providers will not result in increased service utilization, unless combined with improving the facility and community outreach (124,125).
A South African program evaluation of LoveLife was included in these reviews, which involves training for service providers, activities in facility, the community and with other sectors, but the study yielded no evidence for increased SRH services utilization (124,125). The strength of evidence of studies in these reviews varied, more research is needed (124,125).

4.9 Access to emergency contraception and safe abortion

Although emergency contraception can be obtained from pharmacies in South Africa, without prescription, a study showed that half of the pharmacists believed it shouldn't be given to adolescents. This study concluded that interventions to increase access to emergency contraception should include training of pharmacists about the benefits of emergency contraception for adolescents, and display of educational materials at pharmacies (126).

To improve utilization of safe abortion services, programmes need to address the barriers, which are predominantly at community level, and should target household members, adults, young men and boys, as their role in decision making is key. Special consideration in programming is required for the role of the sexual partner of the adolescent, and programmes should be adapted to the diverse needs of adolescents depending on their background, age, and location (40). Pre-service and

in-service training on medical, ethical and legal aspects of abortion should be provided for health care providers (95).

An evaluation of a value clarification workshop with community members and health workers in Limpopo province, aiming to improve access to safe abortion services, showed that the workshops effectively addressed misunderstandings and assumptions related to abortion, and increase stakeholders' understanding of the importance of safe abortion services. Combining these workshops with training, policy and infrastructure improvement, will yield best impact (94).

4.10 In conclusion

As outlined in this chapter, a lot is done in South Africa already, yet the challenges remain. The initiatives to tackle adolescent pregnancy are still fragmented and not always long lasting. Interventions need to be adapted to the unique needs of the respective communities, as the needs of adolescents and patterns of adolescent pregnancy vary across settings and by gender. Neighbourhood-level factors in which adolescents live deserve particular attention (51). Although it is important to reach marginalised groups, globally most interventions don't (109). This can be improved if programmes use data to target high risk populations considering geographical difference in adolescent pregnancy rates, occurrence of age-disparate relationships, unmet need for family planning and violence (26). Additionally, meaningful adolescent participation in policy and programme is a right and should be a priority (109,127).

The range of interventions addressing adolescent sexual behaviour in South Africa often have a primary focus on HIV (34). Integrating HIV/STI and reproductive health services can be beneficial when adapted to the needs of adolescents (51)**.** Evaluations and reviews of interventions conclude that single interventions are not effective, but to prevent adolescent pregnancy, a combination of interventions is required (128). The interventions should target also very young adolescents (10 – 14 years) to address factors influencing pregnancy before adolescents start engaging in sex (26,109). Inter-sectoral and multipurpose approaches are required, with strategies to reduce adolescent pregnancy which will also impact on STIs including HIV (56).

5. Discussion

Adolescent pregnancy is a matter of concern in South Africa. Although the adolescent birth rate is declining, an estimated 39% of girls have been pregnant between ages 15 – 19 years, and 1.1% before turning 15 (26). Adolescent pregnancies in South Africa are mostly unintended and occurring outside the context of marriage.
Despite numerous publications about adolescent pregnancy in South Africa, the real scope and magnitude of adolescent pregnancy remains hidden. Findings about the root causes from one study, may contradict findings from others. This is to be expected in a country with high diversity. Nevertheless some factors influencing adolescent pregnancy are deeply entrenched in South Africa's diverse and often poor socio-economic settings. Pregnancy is linked with risky sexual behaviour or unsafe sex, influenced by the circumstances under which sex occurs, in which adolescents' knowledge, agency and ability to negotiate sex and condom use is often compromised. This includes transactional sex, age disparate relationships, inequitable gender norms and SGBV, especially in communities where dependency and the subordinate position of girls are distinct, and access to services and information is poor.

As this review shows, there are many interventions aiming to address adolescent pregnancy in South Africa, encouraged by progressive laws and policies, yet they seem not robust enough to effectively address adolescent pregnancy. There is a need to consider the key influencing factors when addressing barriers and looking for opportunities to better address adolescent pregnancy.
As we have seen, the impact of parents, schools, peers, partners and communities on adolescents is very important, and there are opportunities to transform their influence into positive factors. To strengthen adolescents' capacity to negotiate sex and condom use, make informed decisions about sex, and to reduce their dependency on others, effective interventions empowering adolescents with knowledge, skills, economic- and education opportunities are required. Interventions addressing inequitable gender norms and involving communities, especially men and boys, are key. Moreover, improving accessibility, acceptability and quality of YFS SRH and safe abortion services is essential.

Approaches addressing adolescent pregnancy encompass a combination of interventions, multi-sectoral and coordinated. Representatives from Departments of Health, Social Development and Education are well placed

to form a coordinating body, in collaboration with other stakeholders. Adolescents are key stakeholders to guide programme makers on their specific needs in the context they live in. Good coordination and stewardship can provide better opportunities to use lessons learned from existing but fragmented interventions, and reassure implementation of South Africa's laws and policies. Ensuring equitable access to quality and multipronged programmes, adapted to contextual differences and reaching all adolescents from an age as early as 10 years. Approaches can address both HIV and pregnancy, although a distinct focus on adolescent pregnancy is required.

Opportunities for CSE already exist in South Africa through the ISHP and Life Orientation programmes in schools, yet the impact and implementation currently are substandard.
Ideally CSE is scaled up, available to adolescents from the first year of secondary school, targeting very young adolescents. However, a comprehensive scale-up of the programme in all schools, in all settings may not be feasible, and should not depend on the education sector alone, rather a multipronged approach needs to be considered.
Teachers can be supported and prepared to provide CSE, through improved training and value clarification in teachers' education and workshops, although this may not result in all teachers being committed and capable to provide CSE. The focus of the curriculum needs to emphasise on empowerment and gender dynamics in relationships, and apply a more participatory approach, with dialogue led by adolescents, rather than teachers telling 'what not to do'. As we have seen that peers have an important impact on each other, peer educators, may be beneficial if they are trained and supervised well, using lessons learned from Vhuthsilo. They can be attached to YFS, and link with the community and schools.
Coordination with the health sector could be reinforced through the existing ISHP. Health workers could play a role in providing CSE in schools, and referral systems for adolescents from schools to YFS needs to be strengthened.

The reach of CSE can be improved through coordination with organizations such as LoveLife, Soul City and Khomani, who use other approaches to impact on adolescents' knowledge and behaviour, such as digital media and mass media campaigns. It is worthwhile to build on experiences from existing campaigns, and pilot new effective approaches

with the rapidly evolving social media technologies, involving adolescents in the development of new interventions.

It is worthwhile to further evaluate the possibilities of implementing the safe spaces model, which has good potential of impacting adolescent pregnancy. This can be established through a coordinated, sustainable, multipronged approach, led by government, with support from UN and international NGOs. Microcredit and cash transfer interventions to empower adolescents from lower socioeconomic levels to attend school, can be an integrated component of this model, preferably linked with health and education services.

Stepping Stones, Creating Futures and Men As Partners programmes in South Africa already generate positive outcomes related to gender perceptions. The effectiveness of these programmes could be strengthened if it is coordinated and linked with the microcredit and cash transfer projects mentioned above. Additionally, these programmes can expand to addressing the norms and values in communities through influential people in the community, and engage them to advocate for and establish better services in their communities.

In order to improve accessibility, acceptability and quality of youth friendly SRH services, ministry of health needs to assess health care providers' training needs, and provide training and value clarification workshops accordingly. Improving skills, attitudes and knowledge on providing YFS (including condoms, contraception and emergency contraception). Including pharmacists in these trainings can help address issues related to provision of emergency contraception for adolescents. The clinic facilities need to be youth friendly. This is best achieved with the involvement of the community, especially adolescents, through meetings, or establishing a youth committee, who can identify what is needed to make the clinic youth friendly (changing opening hours, youth friendly and confidential space, phone calls system for follow-up). This involvement can give the community a sense of ownership. Additionally community based awareness activities need to be held, for which adolescent peer educators can be a good link between the clinic and the community. NDOH needs to review indicators for reporting and oversee that district health authorities regularly supervise these services and report monthly to provincial authorities to enhance the coverage and quality of services.

Furthermore, there is a need to improve adolescents' access to safe abortion services. Demand side barriers (shame, stigma and lack of knowledge about the options and legality) require interventions targeting adolescents and the community, which can be integrated in the previously described initiatives, CSE, mass-, and digital media campaigns and community awareness raising activities. Supply side barriers include health care workers attitudes, lack of confidentiality and geographical accessibility of the service, which can be addressed by integrating dedicated learning modules in the previously mentioned training curriculums and value clarification workshops. Ministry of health will need to evaluate the current rollout of CTOP services, ensuring equitable geographical distribution of these services, through an integrated reporting and monitoring system as described above.

Limitations

The search for literature yielded limited recent data on adolescent pregnancy rates from government sources, most of the data reported is on fertility, or facility based indicators, which is a limitation as it doesn't reflect the magnitude of the problem of adolescent pregnancy and unsafe abortion. Additionally the secretive nature of the issue leads to under reporting, and constitutes a high risk of (reporting) bias in the body of evidence.

Many studies focus on 15 to 19 year old adolescents, and there is little information about the 10 to 14 year old age group, which may be related to the complexities of applying for ethical approval. This is concerning as this is an important group, with higher risks of negative outcomes of pregnancy.

To avoid diluting focus of this thesis, antenatal-, maternity and postnatal care for pregnant adolescents, have not been discussed. Additionally some important factors, including sexual violence and coercion, as well as medical abortion have been underexposed in this thesis, whilst in fact they are major issues, for each of which a separate thesis could be written.
The ecological model provided a useful and relevant framework to organize the findings of the literature review. Whilst all factors can be placed in one, or often more layers of the model, and are interlinked, some crosscutting factors may be under emphasised, and could be added separately to the framework, such as gender and rights.

Conclusion and Recommendations

In South Africa's diverse and often poor socio-economic settings, risks are linked with the circumstances within these environments. Often gender inequity is the norm, SGBV is common, economic hardship and dependency drive girls into engaging in age disparate relationships and transactional sex, and youth friendly services are absent, inaccessible or unacceptable. These circumstances influence adolescents' agency and ability to negotiate sex and condom use, whilst lack of knowledge related to sexuality further exacerbates adolescents' risk of pregnancy.

Early sexual debut should also be seen in the light of the (often coerced) circumstances under which sex occurs.

As parents, peers, partners and the school environment can impact positively or negatively on adolescents' behaviour and exposure to pregnancy risk, it is essential to involve them in programmes, especially engaging boys and men as partners when addressing gender issues.

South Africa's well-formulated laws and policies addressing adolescent pregnancy provide opportunities to improve the response to reduce adolescent pregnancy and negative outcomes. The findings show that effective approaches are those that combine different interventions, and are adapted to the needs of adolescents in the context they live in, informed by relevant data. More evidence is required to demonstrate the impact of current interventions in reducing adolescent pregnancy, however most interventions reviewed yielded weak but promising results, impacting on increased knowledge, delay of sexual debut, increased and more consistent condom use, and improved access to YFS. Consequently this review generates the following recommendations:

Policy

- Departments of Health, Social Development and Education can improve implementation of existing policies addressing adolescent pregnancy in all provinces and districts, through a coordinated approach. Identify implementation gaps, allocate required human and material resources, ensure that the community is aware of the policies and service providers are trained, skilled and supervised to implement and adhere to these policies.

Interventions

- There is a need for NDOH, in collaboration with relevant NGOs, involving adolescents, to ensure that all PHC facilities provide accessible adolescent friendly SRH services:
    - Staffed with health care workers who received training to improve their skills, attitude and knowledge on providing confidential and respectful SRH services for adolescents.
    - Involve the community, especially adolescents, through meetings and awareness raising activities, and to make the services accessible for them, which may differ per community, ensuring a confidential youth friendly space with acceptable opening hours and possibly peer education and recreational activities.
    - Ensure regular monitoring, evaluation and supervision.
- NDOH must work with pharmacists to ensure emergency contraception, and printed information is available at all pharmacies, and train pharmacists on providing emergency contraception to adolescents.
- NDOH will need to ensure that adolescents access safe, confidential, non-judgemental abortion services at PHC level, provide training and value clarification to health workers and communities, and raise awareness. Medical and nursing training institutions must include medical, ethical and legal aspects of safe abortion services in their curriculum.
- Improved implementation and supervision of the Integrated School Health Programme in all secondary schools in South Africa, can be achieved through a joint approach by ministry of Education, Health and Social Development, ensuring that teachers providing CSE are trained and guided by a curriculum with an empowerment approach, focusing on gender norms. Establishing links between CSE and YFS and other community based and socioeconomic empowerment interventions. Meaningful involvement of adolescents in programme development and implementation is key.
- This coordinating body can also engage with NGOs and communities for strengthening and up scaling of programmes engaging men and boys with a focus on gender norms, such as Stepping Stones.

Research

- There is a need for ministries of Health, Social Development and education to engage external experts and researchers to better evaluate the impact of already established programmes (including digital-, and mass media interventions, peer education programmes, socio-economic support programmes) on reducing adolescent pregnancy in different contexts in South Africa.
- There is a need for NDOH to improve systematic data collection on adolescent pregnancy indicators, and adapt programmes based on the acquired evidence.
- Researchers need to invest in research to identify patterns of adolescent pregnancy within different societal groups, with a distinct focus on very young adolescents (10 – 14 years), in order to develop approaches appropriately adapted to their needs.

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Annex 1: Essential elements of comprehensive sexuality education

Source: UNFPA Operational guidance for Comprehensive Sexuality Education: A focus on Human Rights and Gender (129).

"CSE programmes should be based on evidence and include all of the following components":

- *Based on core universal values of human rights*
- *Integrated focus on gender*
- *Thorough and scientifically accurate information*
- *Safe and healthy learning environment*
- *Linking to SRH services and other initiatives that address gender, equality, empowerment, and access to education, social and economic assets for young people*
- *Participatory teaching methods for personalization of information and strengthened skills in communication, decision-making and critical thinking*
- *Strengthening youth advocacy and civic engagement*
- *Cultural relevance in tackling human rights violations and gender inequality*
- *Reaching across formal and informal sectors and across age groupings"*

Annex 2: Youth Friendly Services South Africa

Source: National Department Of Health South Africa, Adolescent youth health policy 2012 (15).

Youth Friendly Services South Africa

"The YFS initiative aims to improve the quality and accessibility of health services for adolescents at primary care level through:

1. *Identifying and address obstacles in the health care delivery of youth and adolescents*
2. *Developing the capacity of key groups to deliver an effective service*
3. *Establishing strong referral systems for young people to hospitals and other community support systems*
4. *Mobilizing support from partners for implementation*
5. *Increasing the number of facilities that they are accessible to a greater proportion of the population;*
6. *Addressing management and institutional shortcomings*
7. *Facilitating and enabling the development of youth action groups which will take responsibility for their involvement in all stages of planning, implementing and monitoring services in a community;*
8. *Implementing a set of adolescent and youth health service standards to facilitate monitoring and evaluation; and*
9. *Co-ordinating and liaising with NGOs, and community based organizations (CBOs) and the private sector to strengthen and sustain youth friendly services.*

Linked to community based youth development interventions including:

1. *Promotion of increased access to comprehensive SRHR;*
2. *Promotion of health prevention strategies at community level*
3. *Development of capacity of health workers, youth through integrative training initiatives*
4. *Strengthen linkages with school health programmes to promote youth and adolescent health*
5. *Promote the peer counsellor/ training programme*
6. *Strengthen collaborative partnerships to promote health and development interventions"*