Maternal and Child Health in Namibia

2nd Edition

World Health Organization

Graphic design by Imagine Design
Printed in Namibia, 2009

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List of abbreviations

AIDS	Acquired immunodeficiency syndrome
ANC	Antenatal care
ARV	Anti-retroviral
BEmOC	Basic emergency obstetric care
CEMoC	Comprehensive emergency obstetric care
CMR	Child mortality rate
DHS	Demographic and health survey
EmoC	Emergency obstetric care
EPI	Expanded programme on immunisation
HIV	Human immunodeficiency virus
IACMEG	Inter-agency child mortality estimation group
ITN	Insecticide treated net
LBW	Low birth weight
MMR	Maternal mortality ratio
MTCT	Mother-to-child transmission
MDG	Millennium development goal
PMTCT	Prevention of mother-to-child transmission
SBA	Skilled birth attendant
STD	Sexually transmitted disease
STI	Sexually transmitted infections
TBA	Traditional birth attendants
TFR	Total fertility rate
WHO	World Health Organization

Acknowledgements

This document on *Maternal and Child Health in Namibia* was written and produced by the World Health Organization Country Office in Namibia, with the support from the Making Pregnancy Safer and Child and Adolescent Health Departments in Headquarters and the Division of Family and Reproductive Health at the Regional Office for Africa. The data used in this publication derives mainly from the Namibia Demographic and Health Surveys and estimations by the Inter-Agency Child Mortality Estimation Group and the Consultative Group on Early Childhood Care and Development. Our sincere gratitude goes to the Honorable Minister of Health and Social Services, Dr Richard Nchabi Kamwi and his staff, particularly the Deputy Minister, Honorable Petrina Haingura, the Permanent Secretary, Mr Kajihoro Kahuure, the Deputy Permanent Secretary, Dr Norbert Forster and to the Director of Primary Health Care, Ms Maggie Nghatanga and staff for their support to this project and valuable inputs into the document. We are deeply grateful to Ms Sachiyo Yoshida who assisted with the graphs and reviewed drafts of the report and to Ms Kirsten Gunzel, the consultant who compiled the text of the report. We are also grateful to Ms Swapna Sharma for her editorial suggestions. Our gratitude also goes to all the Namibian citizens, including the health personnel who graciously consented to be photographed.

Foreword

Every day around the world, 1,500 women die of childbearing or partum related complications. Namibia, as a Nation, also contributes to this alarming statistics, as many of our sisters are still dying either during pregnancy or labour. This need not be so, as we have one of the best antenatal care attendance coverage in the African continent. The vast majority of our pregnant mothers do have access to health care before and during child birth. However, a well identified number of complications, particularly during delivery, are preventing us from our most noble duty: saving mother's lives!

We are also experiencing excess infant and child mortality, which is delaying our achievement of national and internationally agreed goals and targets.

As a mother, midwife, spouse, citizen and First Lady, I have decided to say no to this state of affairs. I have committed myself to join the efforts of the Ministry of Health and Social Services and the community at large, in tackling the challenges that may prevent our country from achieving the Millennium Development Goal 4 of reducing child mortality and Millennium Development Goal 5 of achieving significant reduction in maternal mortality.

As a country, we have the drive, the commitment, the political and social support and ultimately the means to reverse the current trends. Achieving these goals by 2015 should not be a dream but an achievable target for Namibia!

To do so, we have a clear and well articulated road map and unprecedented opportunities to take advantage of. We have leadership and commitment, which are the most important resources in this fight against infant, child and maternal mortality. The policies are in place and we have the technical tools and the strategies.

The weak link is our coming together as a nation, to say no to more mother and child deaths. As a society, we have the duty to care for our women and children.

With the publication of this very informative and useful document on the trends in maternal, infant and child health in Namibia, we have in our hands an important tool in this battle; this document tells us how the situation has evolved over time and gives us an opportunity to review our efforts and target our actions.

I appeal to all and every member of the Namibian society to join me in combating the causes of maternal, infant and child mortality in Namibia. Together, we will be a powerful resource for our mothers, at family, community level and at society level as a country.

Our women need our support. Our children count on us. We can't let them down!

First Lady
Republic of Namibia

MS PENEHUPIFO POHAMBA
THE FIRST LADY OF THE REPUBLIC OF NAMIBIA

Preface

Recent reports on countries' progress towards the achievement of Millennium Development Goals (MDGs) have reaffirmed previous year's trends and fears: unless significantly increased and sustained efforts are made, most developing countries are unlikely to achieve most MDGs. Most importantly, the reports revealed that MDG 5 – improve maternal health– is the least moving target. In spite the bold commitment made at the Millennium Summit in 2000, to reduce by three quarters, between 1990 and 2015 the maternal mortality ratio, between 1990 and 2015, the maternal mortality ratio has been only marginally reduced. It is estimated that over this 15 years period, the reduction was of 5% only. In some countries, like Namibia, there is a reverse trend of increasing maternal mortality.

Another unacceptable statistic concerns children of the world: it is estimated that each year nearly 10 million young children in low-and middle-income countries die before they reach their fifth birthday. And we know that seven in ten of these deaths are due to preventable and treatable conditions. In this regard, Namibian statistics are better than of many countries in Africa South of Sahara, but the pace of reduction is not keeping with the progress required. In Namibia, in spite of the current upward trend in infant, child and maternal mortality, reversing the situation is not an aspirational goal but an achievable target.

The death of a mother or a child is a personal, family, national and human tragedy that could, in most cases be prevented by applying known strategies and approaches. The impact on human capital is immense and can be avoided by using simple interventions.

This publication, the first of its kind, presents us with the figures and facts of where, when and why women and children are dying in Namibia over the past years. We hope that it will serve the purpose of galvanizing action from all segments of the Namibian society, mobilized around one shared goal: saving mothers and children's lives.

We know what needs to be done, the tools are in place. We have the leadership we need to turn the tide. And the ambition required to sustain the efforts in the long run. We need to build, strengthen and sustain partnerships at all levels of society, spur grass roots efforts and apply multiple strategies to achieve our goals.

We call upon decision makers, opinion leaders, fathers, husbands, mothers and advocates, business men and women, administrators and politicians, musicians and actors, students and farmers, miners and engineers, parliamentarians and governors, people from all walks of life to join forces in combating maternal and child deaths in Namibia. It is a fight we can win; the success is in our hands. Let's do it!

DR MAGDA ROBALO CORREIA E SILVA
WHO REPRESENTATIVE IN NAMIBIA

Executive Summary

The Namibian Government is committed to the improvement of maternal and child health, as a contribution to the sustainable development of the Nation. To ensure universal access to health care by every woman and child a holistic health management, provision and service delivery approach with multi-sectoral involvement is adopted.

Vision 2030 and the National Development Plans emphasise the Government's commitment to health and the relevance of health outcomes to development. Practical guidelines such as the Roadmap to Maternal, Newborn and Child Health, supporting the implementation of existing policies, are further evidence of the Government's dedication to the improvement of maternal and child health in the country.

The maternal mortality ratio has increased from 271 deaths per 100,000 live births during 2000 to 449 deaths per 100,000 live births in 2006/2007. This has raised concerns and in order to bring about the desired changes it is imperative to understand the current situation of maternal and child health in the country.

Most deliveries occur in health facilities and are assisted by skilled birth attendants (SBAs). A higher percentage of deliveries assisted by SBAs was reported in urban areas. Khomas region showed the highest utilisation of birth facilities and SBAs while Kunene had the lowest proportion.

The direct causes of maternal deaths are eclampsia, obstructed labour, haemorrhage and complications of abortion. A serious shortcoming in treating these causes of death has been identified as insufficient coverage of basic emergency obstetric care facilities, especially in the northern regions of Namibia.

Indirect causes of maternal mortality are mainly related to the high HIV/AIDS prevalence in Namibia. About 18% of pregnant women have been tested HIV positive. Another indirect cause of maternal deaths is malaria infection.

Most pregnant women receive antenatal care during at least four visits. This is in accordance with the WHO standards. However, on average pregnant women make their first visit rather late. Utilisation of postnatal care is low.

The use of contraceptives has increased since 2000. Usage is significantly higher in urban than rural areas. Moreover, marked differences in usage can be observed among the regions.

HIV/AIDS and other sexually transmitted diseases have serious implications to sexual and reproductive health. Increased awareness and understanding among the population has increased the use of condoms, but behavioural patterns such as high risk sex remain obstacles to improve sexual health indicators.

The number of teenagers who have begun childbearing is high. More than 15% of teenagers are pregnant with their first child or already had a child. In the Kavango, Otjozondjupa, Kunene, Caprivi and Omaheke regions, adolescents that are pregnant with their first child exceed 25%. Teenage pregnancy implies unprotected sex which increases the risk of contracting sexually transmitted diseases.

Although infant and child mortality has decreased since the 80's, the pace of decrease is slow and there has been a slight increase in 2006/2007, as compared to 2000. Most newborn deaths occur within the first week after delivery, where education, place of residence and income influence mortality. Of the deaths amongst under-five year olds, 53% are attributed to HIV/AIDS. Further contributing to infant or child mortality is a high percentage of preterm births, birth asphyxia, and diarrhoeal and respiratory infections.

A set of measures are in place to improve infant and child health. These include ARV prophylaxis, immunisation, as well as the supply of micronutrient supplements, especially of Vitamin A.

The nutritional condition of children in Namibia is poor. Almost 30% of children are stunted. This is a marked increase from 2000, where the percentage of stunted children was higher than 20%. Of children born during 2006/2007, 14% had a low birth weight. This indicates that a significant number of women suffer of insufficient calorie intake, or have pregnancy related complications that condition foetus development.

Socio-economic factors influence the health of mothers and children. In this context the effects of poverty are of particular concern. Multiple and concurrent sexual partners, violence and alcohol abuse are further challenges to maternal and child health.

Introduction

1. Introduction

During the Millennium Development Summit in 2000 the international community pledged to eliminate poverty and create a climate for sustainable development. Facilitating the attainment of this objective, eight Millennium Development Goals (MDGs) were formulated; offering specific and measureable targets according to which policy makers appraise their development programmes. Within the context of the MDGs, maternal and child mortality was identified as urgent policy priority. This is reflected in the fourth and fifth MDGs, which set to reduce the child mortality rate (CMR) by two-thirds; and the maternal mortality ratio (MMR) by three-quarters between 1990 and 2015[1].

At a first glance of the MDGs, the reasons why health is considered so important seem obvious: Every individual, irrespective of age, gender or race has the right to lead a healthy and full life. The benefits of maternal and child health are not limited to such altruistic notions alone. In its essence, physical and mental well-being is an essential prerequisite in attaining sustained economic growth and social prosperity. Only a healthy mother can raise healthy children, and only healthy, well-nourished children can develop into socially and economically productive adults. In the long run, overall good health also provides a more level playing field reducing socio-economic inequalities. Besides ethical considerations, the positive spin-offs of effective maternal and child health interventions are central to the rationale underlying efforts to ensure universal health.

Everyone, including national governments, donors, multilateral organisations, NGOs, professional bodies, private sector and civil society need to play their role and be accountable for the improvement of maternal and newborn survival and health.[2]

The Government of the Republic of Namibia places maternal and child health at the centre of sustainable development of the Nation. With the objective of creating an environment in which the right to universal health is ensured for every woman and child, a holistic approach to health management has been adopted with multi-sectoral involvement.

The commitment of the Namibian authorities to promote good health of its citizens is supported in the major developmental programs of the country. Vision 2030 and the National Development Plans emphasise the Government's commitment to health and the relevance of health outcomes to development. Practical guidelines such as the Roadmap to Maternal, Newborn and Child Health, supporting the implementation of existing policies, are further evidence of the Government's dedication to the improvement of maternal and child health in the country. In line with the international Safe Motherhood Initiative, the efforts of the Government are supported by a number of development partners as well.

Unfortunately, measures and programs in place to achieve stipulated goals do not automatically translate into desired outcomes. This is true in the country's situation of maternal and child health as well, which is observed in some of the findings of the recently launched Namibia Demographic and Health Survey (DHS) 2006/2007. As compared to the DHS of 2000, an increase in the maternal mortality ratio (MMR) is observed. Infant and child mortality have decreased as compared to 2000 but the rate of decline is not enough and an upward trend is being observed.

In order to reverse the current trends, understanding the causes, linkages and interdependent relations between maternal and child health deteriorating situation is imperative. This document summarises key findings of the DHS 1992, 2000 and 2006/2007 and some other studies on maternal and child health in Namibia. It analyses trends and discusses the causes and effects identified so far. However, these indicators cannot be looked into in isolation. Namibia's unique demographic characteristics should be taken into account when trying to understand the context and implications of the current maternal and child health status. Although categorised as a middle-income nation, the distribution of wealth in Namibia is one of the most unequal in the world and a large number of the population live below the poverty line. A population of around 2 million people is spread over an area of 824,268 square kilometres. Two-thirds of the population live in the five northern regions, while one-tenth live in the vast areas of southern Namibia. Distances between settlements are far and remote areas are often not readily accessible.

This document is structured as follows: Chapter 2 discusses maternal health during delivery, pregnancy and the postnatal period. Chapter 3 considers the health situation of infants and under-five year old children. The fourth chapter explores some of the socio-economic factors associated with maternal and child health in Namibia. Conclusions and a possible way forward are offered in Chapter 5.

Maternal Health

2. Maternal Health

According to global estimates, every day more than 1,500 women die worldwide due to complications related to pregnancy or delivery. The majority of maternal deaths occur in developing countries, with over half reported in Africa. The sad reality is that almost each of these deaths could have been prevented, given appropriate antenatal and maternal care as well as emergency obstetric treatment.[9] Namibia is no exception. According to the 2006/2007 DHS, the MMR in Namibia is 449 deaths per 100 000 live births.[7] Of concern is the fact that the MMR shows an increasing trend. During 2000, the ratio was at 271 deaths per 100 000 live births.[8] Studies point towards the fact that women are particularly at risk during delivery. The following paragraphs outline the health risks during delivery, followed by probable antenatal and postnatal complications and care requirement.

Millennium Development Goal 5 aimed at improving maternal health is the goal least likely to be met in many developing countries.[2]

2.1 HEALTH RISKS DURING DELIVERY

It is generally understood that proper medical attention and hygienic conditions during labour and delivery can significantly reduce the risks of obstetric complications, infections and death. Skilled health personnel trained in obstetric care and health care facilities adequately equipped for obstetric emergencies are a prerequisite for safe delivery. The overall physical condition of the pregnant woman also plays a significant role in ensuring an uncomplicated delivery process. A mature, healthy and well-nourished mother faces lesser risk of complications.[10]

Rural and poor women who do not have access to quality skilled care are the most affected by maternal mortality. The gap in accessing skilled care is greatest between urban and rural areas, and between rich and poor women.[2]

In Namibia, according to the DHS of 2006/2007 *(Figure 1)*, nearly 60% of all births occurred in rural areas. Statistics also show that about 81% of all births took place in a health facility *(Figure 2)*.[7] This is an improvement over the previous years with 67% and 75% of births taking place in health facilities in 1992 and 2000 respectively.

FIGURE 1: URBAN VS RURAL BIRTHS IN PERCENT DURING 2006/2007 [7]

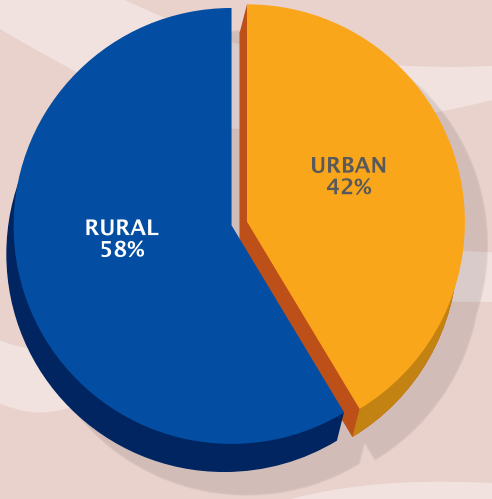
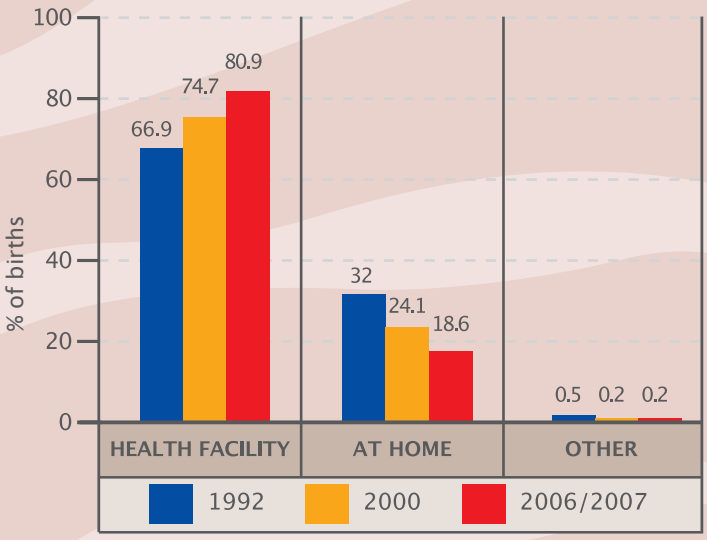


FIGURE 2: BIRTHS AS PER PLACE OF DELIVERY IN 1992, 2000, 2006/2007 IN PERCENT [7,8,11]



Women from the higher income groups make more use of the health facilities (97.6%) as compared to those from low income homes (58.4%). Moreover,

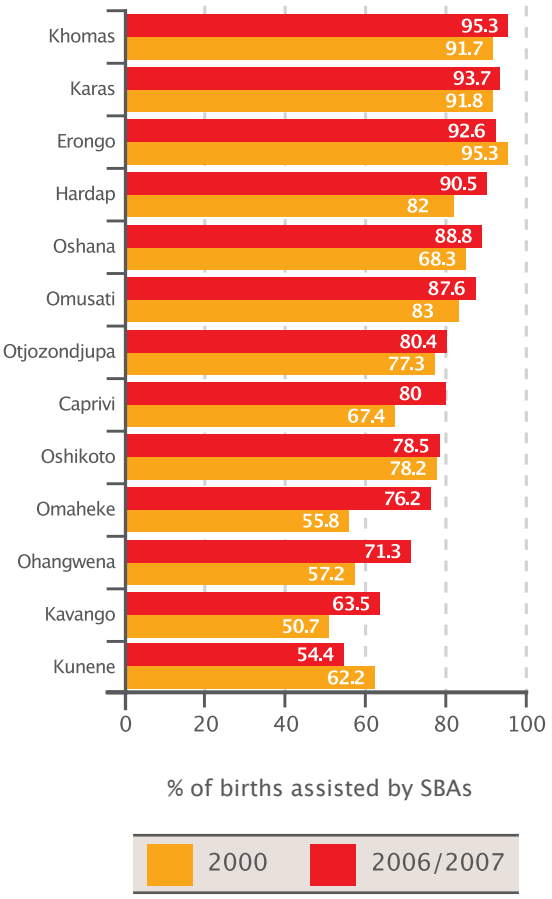
of those with no education and who can be assumed as largely uninformed about the risks and symptoms of obstetric complications, only 49.2% delivered their babies in a health facility.[7]

The DHS of 2006/2007 also points out regional differences in the proportion of deliveries taking place in health facilities. For instance, Karas, Erongo, and Khomas reported more than 90% of deliveries in health facilities, while Kunene reported 53.8%. Overall, the national average therefore has to be appreciated with care and regional and demographic differences have to be acknowledged when considering this variable.[7]

As regards to assistance by skilled birth attendants (SBAs) during delivery, the 2006/2007 DHS reported a national average of 81%. Again, this picture looks different if disparities in terms of educational attainment, wealth characteristics and regional differences are taken into consideration. While 94% of births in urban areas were assisted by SBAs, in rural areas the number was 73%.[7]

Assistance during delivery by SBAs varies significantly amongst regions. As shown in *Figure 4*, the DHS reports a significantly higher utilisation of SBAs in the Khomas, Karas, Erongo and Hardap regions as compared to Kunene and Kavango. During 2006/2007, about 7% of all births were assisted by traditional birth attendants (TBAs)[7].

FIGURE 4: PERCENT BIRTHS ASSISTED BY SBAs BY REGION IN 2000, 2006/2007 [7,8]



Another determinant of assistance during delivery is income. As shown in *Figure 5*, while within the richest quintile 98% of births were assisted by a skilled health personnel, amongst the poorest quintile only about 60% of births were assisted by a SBA. This represents a divergence of 38 percentage points.[7]

FIGURE 3: PERCENT BIRTHS ASSISTED BY SBAs IN URBAN AND RURAL AREAS IN 1992, 2000, 2006/2007 [7,8,11]

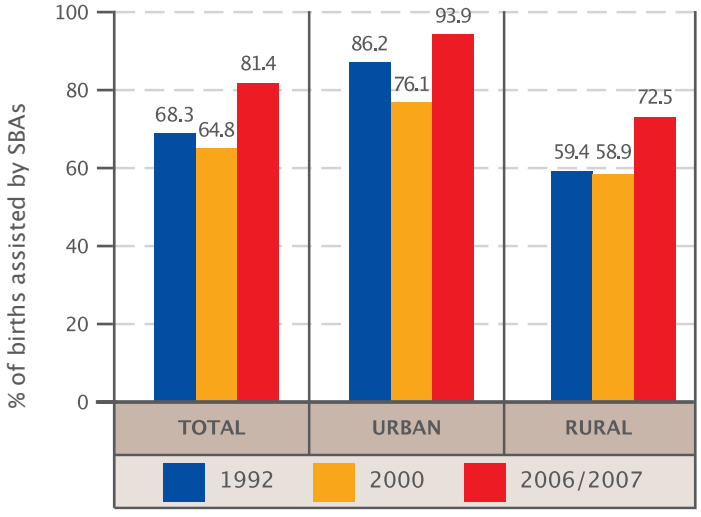
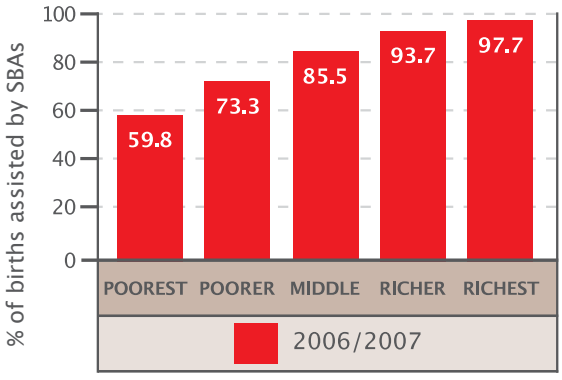


FIGURE 5: PERCENT BIRTHS ASSISTED BY SBAs BY INCOME IN 2006/2007 [7]



On average, Namibia performs well in terms of access to health care facilities and delivery by SBAs. In spite of this, there is still an increase in MMR. To better understand the situation, it is useful to explore the causes of possible complications and maternal deaths amongst women during labour and delivery.

Figure 6 shows that during 2005 most complications during childbirth occurred due to obstructed or prolonged labour (38.1%)[12]. A protracted delivery may occur due to a large or malformed foetus, or because of a narrow pelvic canal, deficient pelvic growth, due to some past injury to the pelvis, tissue or vulva, or due to genital mutilation. Also, obstructed labour may occur if the woman in labour shows signs of exhaustion, malnutrition or suffers from an infection. [i]

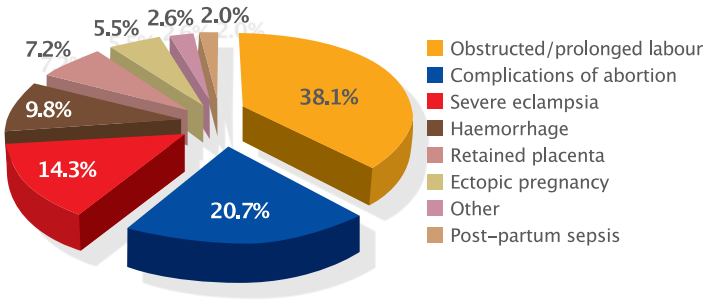
Complications of abortion (20.7%) and severe eclampsia (14.3%) are the two other most important causes of obstetric complications.[12] Eclampsia implies a high risk to the well-being of mother and child and may result in the death of the woman. Eclampsia manifests itself in very high blood pressure which in severe cases leads to convulsions. Eclampsia may or may not follow hypertension during pregnancy. What makes eclampsia difficult to treat is that it is not easy to predict whether a woman will experience hypertension and how severe the symptoms will be. Moreover, it is not quite clear what the underlying causes of eclampsia are. It has been suggested that one contributing factor to the occurrence of high blood pressure during labour is a nutritional shortage in calcium intake. Some evidence supporting this shows that provision of calcium supplements during pregnancy reduces the incidence of hypertension during pregnancy and labour.[10]

Most maternal and newborn deaths can be prevented by:
- *Access to quality skilled care during pregnancy, childbirth and postpartum / postnatal period*
- *Timely access to emergency obstetric care*
- *Access to family planning services to prevent unwanted pregnancies.*[2]

The high incidence of complications due to abortions needs to be considered within the context that abortions in Namibia are only legal under very specific conditions: if necessary to save the life of the mother or to preserve her mental and physical health, if the child is the product of rape or incest, in the instance of foetal impairment and in cases where the mother is mentally impaired and will not be able to care for her child due to this impairment. Three physicians are required to certify the existence of the reason for abortion and the abortion must be performed in a Government hospital or in an approved medical facility.[13] Socio-economic factors are not an acceptable reason for aborting a foetus. But this does not prevent pregnant women desperate to terminate the pregnancy from seeking an abortion. Women will resort to providers willing to conduct an illegal intervention. Since such a provider operates outside the regulated health system it is likely that he or she is less skilled, putting the pregnant woman at risk of medical malpractice.[14] Also, due to fear and indecision, women may wait too long before they conduct an abortion, with possible detrimental effect to their physical and mental health.[15]

Haemorrhage (9.8%), a retained placenta (7.2%) and an ectopic pregnancy (5.5%) are further complications requiring emergency obstetric interventions, followed by post-partum sepsis (2%).[12]

FIGURE 6: DIRECT OBSTETRIC COMPLICATIONS TREATED DURING 2005 [12]

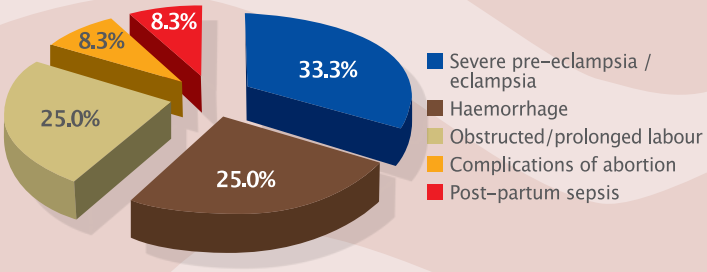


When considering causes of death, it is useful to distinguish between direct causes and indirect causes. *Figure 7* indicates that 33.3% of maternal deaths are directly caused by severe pre-eclampsia and eclampsia. Obstructed and prolonged labour and haemorrhage combined are a further 50% of the cause while 16.6% are attributable to post-partum sepsis and complications of abortion.[12]

HIV/AIDS, malaria and anaemia during pregnancy increase pregnant women's risk of dying.[2]

[i] *Caesarian section is only one example of obstetric emergency intervention possible.*

FIGURE 7: CAUSES OF DIRECT MATERNAL DEATHS IN NAMIBIA DURING 2005 [12]



Indirect causes of maternal deaths refer to conditions that are aggravated by pregnancy but do not necessarily lead to death. Sexually transmitted infections (STIs), human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) as well as malaria are identified in Namibia as some such causes.[12] About 20% of pregnant women in Namibia have tested HIV positive.[16] This impact of HIV/AIDS and STIs on the physical and mental well-being of the mother will be discussed in more detail in Section 2.5.

It is estimated that about 15% of pregnant women will experience at least one life threatening complication during delivery.[12] This makes it clear that obstetric interventions during labour are critical for reducing maternal mortality. Eight signal functions were identified by the World Health Organization (WHO) to significantly reduce maternal deaths.[17]
These are:

1. The administration of parenteral antibiotics
2. The administration of parenteral oxytocics
3. Administer parenteral anti-convulsions for pre-eclampsia / eclampsia
4. Perform the removal of a retained placenta
5. Perform the removal of retained products
6. Perform an instrumental assisted vaginal delivery
7. Perform safe blood transfusions
8. Perform surgery / caesarean delivery

A substantial reduction in maternal mortality can only be achieved by prompt quality emergency obstetric care that includes these signal functions. Health facilities which offer signal function 1 to 6 are considered basic emergency obstetric care (BEmoC) facilities, while facilities offering all eight interventions are classified as comprehensive emergency obstetric care (CEmoC) facilities. The WHO stipulates that for sufficient access to obstetric care, four BEmoC and one CEmoC facility needs to be operational for every 500,000 people.[17]

Namibia has four facilities offering all eight signal functions, thus meeting the WHO standard for CEmoC facilities. There are no BEmoC facilities in Namibia and most obstetric emergency services are performed at CEmoC facilities. The four health facilities providing all the eight signal functions are in the central regions – two in Windhoek, one in Otjiwarongo and one in Oshakati. The highly populated northern areas do not have either of the BEmoC or CEmoC facilities.[12]

This uneven distribution of emergency obstetric services is reflected in the findings of the DHS. On average, about 13% of babies were delivered by caesarean section (C-section) in the country. Of the births in urban areas, more than 20% were delivered by C-section, in rural areas this number is only 7% (*Figure 8*).[7] Most caesarean sections were conducted in the Khomas, Erongo and Omaheke regions. In Caprivi and Kunene, delivery by C-section was considerably lower, less than 5% [7] *(Figure 9)*.

FIGURE 8: PERCENT BIRTHS DELIVERED BY C-SECTION BY GEOGRAPHICAL LOCATION IN 1992, 2006/2007 [7,11]

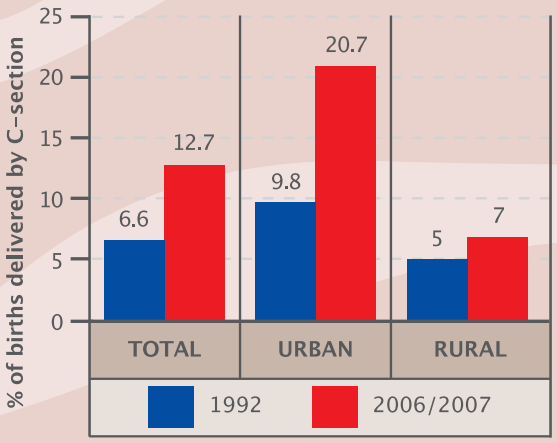


FIGURE 9: PERCENT BIRTHS DELIVERED BY C-SECTION BY REGION IN 2006/2007 [7]

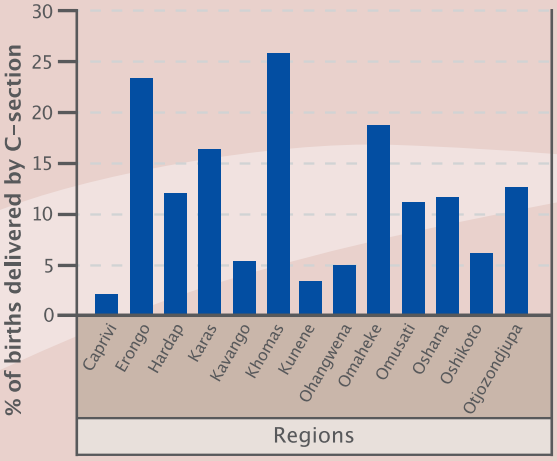


Figure 10 presents a strong utilisation bias of obstetric surgery towards high income groups, with women in the lowest socio-economic groups having 7.7 times less access to caesarean section than their wealthier counterparts.[7]

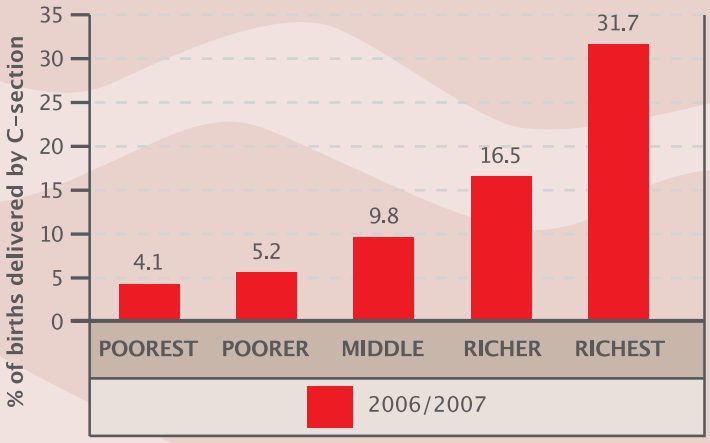
Although most women delivered their children in health facilities and were assisted by skilled health attendants, the capacity to treat emergencies during labour is not sufficient and unevenly distributed. This is probably one explanation for the increasing maternal mortality rate in Namibia.[i]

Complications do not only occur during delivery, but also during pregnancy. More importantly, it is during pregnancy that most complications of delivery can be identified, treated when possible and prepared for. Observation and care during pregnancy are therefore critical to the health of pregnant women and mothers. The following section elaborates on antenatal care (ANC) services and access in Namibia.

2.2 IMPORTANCE OF ANTENATAL CARE

A central goal of ANC is to identify and treat problems occurring during pregnancy such as anaemia, high blood pressure and genital infections, as well as conditions such as HIV/AIDS and other illnesses. During ANC visits, health personnel have the opportunity to identify potential complications during delivery and if necessary organise referral to specialised hospitals. Furthermore, ANC is crucial in that it forms the basis for the contact between health personnel and the pregnant woman. It is an invaluable opportunity to reach and educate the future mother in terms of raising her child, about feeding practices, hygiene and general aspects of health and also to inform and equip her to make appropriate choices during and after her pregnancy.[7,18]

FIGURE 10: PERCENT BIRTHS DELIVERED BY C-SECTION BY INCOME IN 2006/2007 [7]

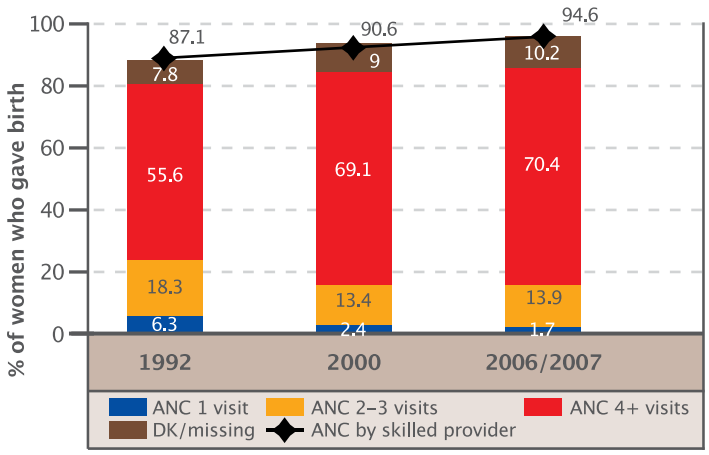


[i] *Caesarian section is only one example of obstetric emergency intervention possible.*

When it comes to ANC, the timing as well as the number of visits is important. The WHO recommends at least four visits by a pregnant woman to a health professional.[7] During these visits it is critical that the pregnant woman feels comfortable and safe, with health workers treating the woman professionally and with empathy. It is essential that the ANC visit is a positive experience, thus increasing the likelihood of the pregnant woman returning for further checkups.

As shown in *Figure 11*, during 2006 more than 70% of pregnant women received at least four ANC checkups. This signifies an increase of 14 percentage points since 1992. About 14% made two to three visits, while only 2 percent recorded only one visit. Four percent did not make even one visit. There is a tendency of younger women, and women who are pregnant with their first baby to seek ANC as compared to older women who already had experienced a pregnancy. Slightly more urban women received ANC than rural women. Also, a larger number of wealthier persons seek ANC.[7]

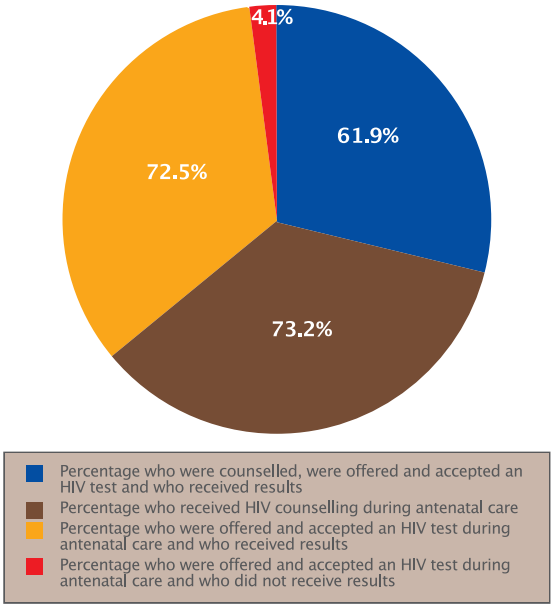
FIGURE 11: NUMBER OF ANTENATAL CARE VISITS BY WOMEN WHO GAVE BIRTH IN PERCENT IN 1992, 2000, 2006/2007 [7]



The content of ANC is essential for assessing the quality of services offered. Pregnancy complications are a primary source of maternal and child morbidity and mortality. Therefore, ensuring that pregnant women receive information on the signs of complications and testing them for complications should be routinely included in all ANC visits. Such tests do not need to be expensive. Even simple, basic ANC has a dramatic impact on maternal morbidity.[7,19] ANC services in Namibia include informing women of signs of pregnancy complications, weighing, measuring of blood pressure, and checking urine and blood samples. While more than 90% were weighed and had blood pressure measured and blood and urine sample taken, only 58% were informed of signs of pregnancy complications.[7] Women and maternal and child health care givers are aware of the importance of nutrition to the health of pregnant women. This can be seen in terms of the high percentage of women taking iron supplements. It is reported that 79.8% of women who had a live birth in the past five years took iron supplements in the form of tablets or syrup during pregnancy. However, the percentage of women taking anti-parasite medicines is rather low – only 7.4% of women are recorded to have taken intestinal parasite medicines during pregnancy.[7,19]

ANC is a very important contact point for health personnel to reach pregnant women and counsel them regarding the risks and implications of HIV/AIDS infection. *Figure 12* shows that among women who gave birth in the two years preceding the survey, 73% received HIV counselling during antenatal care for their most recent birth, and practically all these women received the results of the test. 62% of women were tested and voluntarily accepted an offer for the HIV test and received the test results. [7]

FIGURE 12: HIV/AIDS HEALTH SERVICES DURING ANTENATAL CARE IN 2006/20007 [7]



ANC is more beneficial if started earlier in the pregnancy and visits are continued throughout the pregnancy. It is recommended that the first visit be done within the first trimester of the pregnancy. This allows early screening especially of high risk groups such as young women, HIV positive women and women with biological factors

potentially leading to obstetric complications as well as women who are at risk during pregnancy and delivery due to an unfavourable socio-economic environment[19,20]. On average, pregnant women in Namibia start late with ANC visits. Only 32.6% of women seek care within the first three months of pregnancy. Most visit a health facility during the fourth and fifth month (38.3%), while 20.8% go for a visit during month six and seven. The median length of the pregnancy at first visit is 4.7 months.[7]

Worldwide, out of 136 million women who give birth every year, about 20 million experience pregnancy-related illness after chilbirth.[2]

There are a number of reasons why women do not seek medical attention early and more often during pregnancy or childbirth. Factors can be related to distance to health service facility and expensive or non-availability of transportation: lack of money for treatment was cited as a problem by 38.9% of women for not accessing health care, while 41.5% reported the distance to a health facility as a constraint and 41.7% reported absence of transport as an obstacle to accessing health care. More than 70% of women reported at least one serious problem to accessing health care when sick.[7]

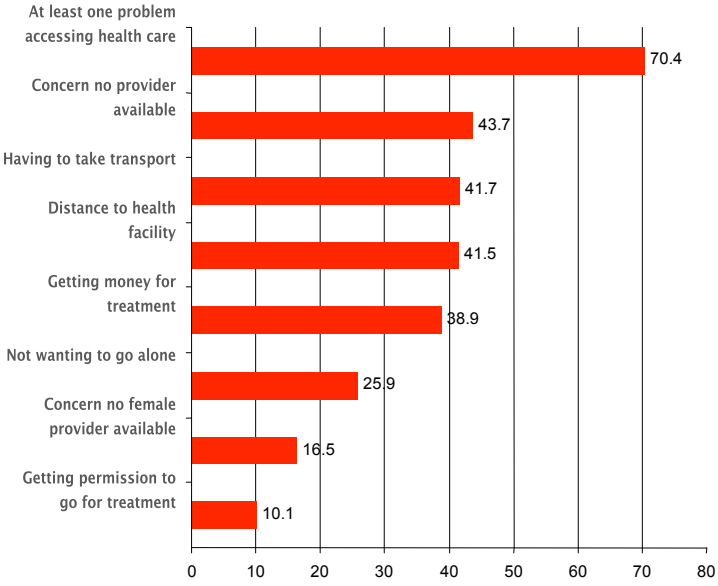
The dangers to the woman and child do not end at delivery. A significant number of maternal deaths occur after delivery. To the detriment of the well-being of the mother and child it is often exactly this postpartum period which is most neglected. This is in spite of the fact that this time is highly important for acute short-term, long-term and chronic maternal morbidity. The following paragraphs explore the demand for and content of postnatal care in Namibia.

2.3 POSTNATAL CARE

The most critical period for a mother and child is the first 48 hours after delivery. The postpartum period continues six weeks after birth. After this period most physiological and hormonal changes that occur during pregnancy subside. During postnatal care, complications arising from delivery are treated and mothers are provided with information on how to care for herself and her baby. The Namibian policies emphasise special care and observation during the first two days post partum.[721]

The essential focus of postpartum care is to ensure that the woman is healthy and capable of taking care of her newborn. During postpartum, the mother is assessed for tears, and if necessary, sutured. It is possible that women suffer from constipation and or haemorrhoids. The bladder is assessed for infections, retention and any problems in the muscles. It is further necessary to observe women who experienced excessive blood loss during delivery, ensuring that the patient recovers fully. In addition, many women suffer from postnatal depression. Normally support from family and friends helps the mother through this episode, although in certain cases serious depression can develop which requires appropriate response. Infections and postnatal sepsis are important to prevent and if they occur, should be treated immediately. Sepsis is especially relevant in the context of substandard hygienic conditions during delivery.[10,21]

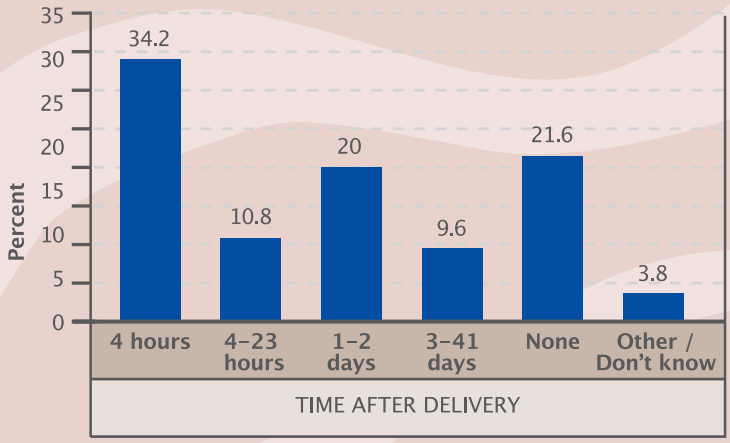
FIGURE 13: PROBLEMS IN ACCESSING HEALTH CARE, IN PERCENT IN 2006/2007 [7]



Internationally, the utilisation of postnatal care is low. This has been related to the fact that women do not perceive the need and do not appreciate the importance for this service. Many women simply do not have knowledge of the risks of the postpartum period. Since they did not feel sick, women rather save the money to spend on other articles or services and spend their time caring for the needs of their infant, than undertaking a postnatal check-up. Most often, women that had an uncomplicated spontaneous vaginal delivery do not perceive the care as necessary, because of no perceived risk.[21,22,23] It further has been suggested that unfriendly treatment from health workers during pregnancy and delivery may have strong negative impact on the demand for the service. The consequence of low postnatal care attendance is

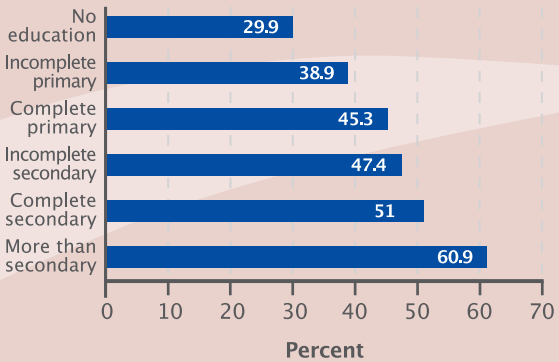
that some of the negative health outcomes which can occur during the puerperium may not be noticed or that initial symptoms might be ignored by women. With low postnatal care attendance a valuable opportunity is lost to protect the mother from postnatal complications and also to transmit education and information to women on subjects such as breastfeeding practices, family planning and postpartum depression.[10,21,22,23]

FIGURE 14: USE OF POSTNATAL CARE, IN TIME AFTER DELIVERY, IN PERCENT IN 2006/2007 [7]



The DHS of 2006/2007 indicates that 65% of Namibian mothers received a postnatal check-up within two days for her last live birth *(Figure 14)*. Of these, most women had their check-up within four hours after birth. Little variation in utilisation of the service can be identified in terms of the age of the mother. Mothers who delivered their first child were more concerned about receiving postnatal care than those who had a second or third child. Clear discrepancy in usage of postnatal service exists in terms of location of delivery. While in urban areas 72.5% received a check-up, in rural areas it was only 59.2%. Higher income groups utilised the services more than members of the lower income groups, with 57.8% of the wealthiest and 34.5% of the poorest income groups receiving a check-up. *Figure 15* shows utilisation of postnatal care services with respect to education. Mothers with no primary education made significantly less use of services provided than those with secondary education.[7]

FIGURE 15: USE OF POSTNATAL CARE AS PER EDUCATION LEVEL, IN PERCENT [7]



Care during pregnancy, during delivery and also post partum and the risks surrounding the event of childbearing needs to be considered under the category of safe motherhood within the broader context of reproductive health. In the following section reproductive health in Namibia is discussed.

2.4 REPRODUCTIVE HEALTH

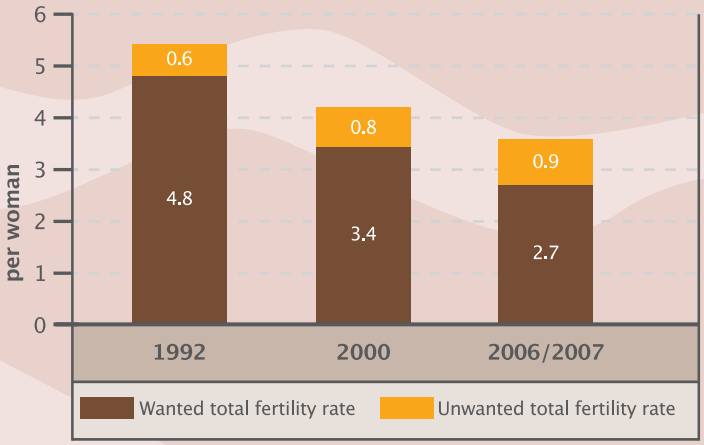
Reproductive health is a multidimensional concept. Reproductive health includes both men and women's health and embraces all critical phases of life from conception, birth, childhood, adolescence and adulthood to old age. Good reproductive health is a vital contributor to and the foundation of good maternal health. Components of reproductive health are family planning, safe motherhood, newborn and child care, adolescent care, management of STIs and also of cancers of the reproductive system.[24, 25]

Community involvement is a critical element of success of reproductive health programmes, particularly male involvement, since in terms of sexual practices and childbearing, community and men coercion plays a definite role in the choices women make. One central indicator in reproductive health surrounds the use of contraceptives. The reasons for using contraceptives are two-fold. In the first place, contraception is used to prevent conception. On the other hand, certain contraceptives such as condoms are applied to prevent the transmission of STIs. With regards to the former, the topic is concerned with family planning, while with regards to the latter; the concern is with sexual health. [7,24,25,26]

Family Planning

The Namibian society in general leans towards and desires large families[24]. Considerations of choices concerning family planning are determined accordingly. During 2006/2007 the total fertility rate (TFR) in Namibia, that is, the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the currently observed age-specific rates, was 3.6, indicating a reduction since 2000 *(Figure 16)*. Rural, urban and regional variances are strong, with the lowest TFR observed in the Khomas (2.6) and Erongo (2.8) regions while the highest fertility rates are observed in Kunene, Kavango and Omaheke with a TFR of 4.7, 4.9 and 5.1 respectively.[7]

FIGURE 16: TOTAL FERTILITY RATE IN 1992, 2000, 2006/2007 [7]



Research has shown that short birth intervals are closely associated with poor health of children as well as mothers.[7] Children born too early after a previous birth, in particular if the interval between the births is less than two years, are at increased risk of health problems and dying at an early age. Longer birth intervals, on the other hand, contribute to the improved health status of both mother and child. Given the relatively high fertility rate, at least in some regions, concerns exist regarding the spacing of births. The median length of period between births in Namibia is 42.3 months. Thirteen percent of children were born within two years after their older sibling was born, while 26% were born two to three years after. Most mothers had another baby four years or longer after a pervious birth. The data show that younger mothers have a shorter interval between births.[7]

Contraception applied to limit and space pregnancy is a very useful tool to allow the body of the woman to recover before a next child is born. As illustrated in *Figure 17*, the use of modern contraceptive methods amongst women during 2006/2007 was at 46%, as opposed to only 26% in 1992. Injectables (17.1%) were the preferred method of contraception, followed by male condoms at 17%. Contraceptive use is significantly higher in urban than in rural areas. According to the DHS 2006/2007, most women who demanded means to limit or space births had their demand satisfied, which translates into more than 90% of demand for family planning being met.[7]

As shown in *Figure 18*, contraceptive use is lowest amongst 15-19 year old married women and highest amongst 25-29 year old women. The figure indicates that since 1992, the use of contraceptives has increased consistently across all age groups.[7]

FIGURE 17: MODERN CONTRACEPTIVES USE BY ALL WOMEN, IN PERCENT IN 1992, 2000, 2006/2007 [7]

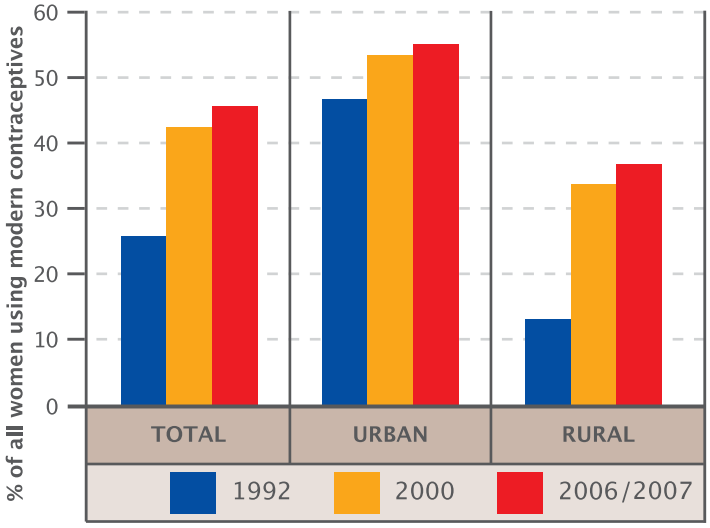
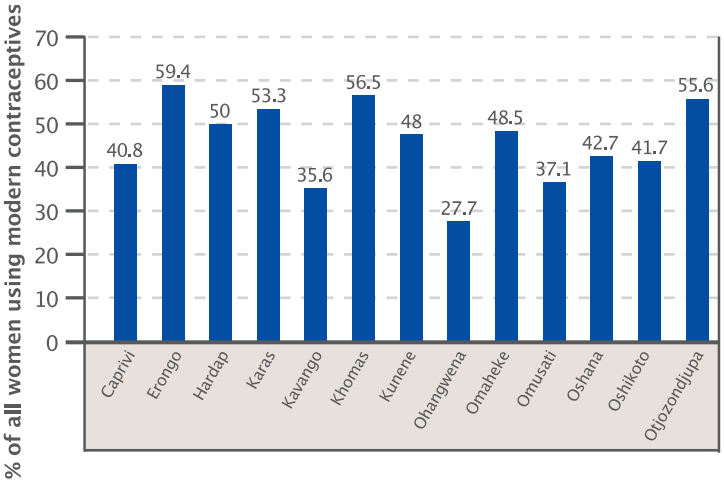


FIGURE 18: MODERN CONTRACEPTIVES USE BY MARRIED WOMEN BY AGE, IN PERCENT IN 1992, 2000, 2006/2007 [7,8,11]

FIGURE 19: MODERN CONTRACEPTIVES USE BY ALL WOMEN, PER REGION, IN PERCENT IN 2006/2007 [7]



At regional level, according to the DHS of 2006/2007, the use of contraceptives varied from a low of 28% in Ohangwena to a high of 59% in the Erongo region *(Figure 19)*.[7]

The use of condoms as contraceptive is desirable especially within the context of HIV/AIDS and STIs in general, since condoms are effective in preventing the transmission of these diseases and are hence critical to the sexual health of every individual.

Sexually transmitted infections

Every day, over 6,800 persons worldwide become infected with HIV. Similarly, 5,700 persons die from AIDS. This is because of inadequate access to and or use of HIV prevention and treatment interventions. In Sub-Saharan Africa, AIDS is the leading cause of death, with families and communities broken up due to the effects of the pandemic. In this region, most of the infected persons are women, with over 61% of infected individuals being female.[27]

In Namibia, the epidemic appears to have stabilised with about 18% of pregnant women testing HIV-positive, after peaking in 2002 at 22%. The prevalence is highest amongst 30 to 34 year old, followed by 35-39 year old with 27.2% and 26% respectively. Katima Mulilo in Caprivi shows the highest prevalence with 31.7%, followed by Okahao (27.4%) and Tsandi (25.9%) in the Omusati region, while in Opuwo (Kunene) with 7.9%, Rehoboth (Hardap) with 6.3%, Aranos with 5.9% (Hardap) and Windhoek Central Hospital (Khomas) with 4.7% had the lowest prevalence.[16]

In Namibia, virtually all men and women aged 15-49 have heard of AIDS. Comprehensive knowledge about HIV/AIDS was markedly lower though. Only 67,2% of women and 63,4% of men knew that condom use with one uninfected faithful partner significantly reduces the risk of infection, while at the same time knowing that an HIV infected person may be healthy looking and not showing any symptoms related to HIV/AIDS. Only 50,9% of women and 66,1% of men consistently used a condom during sexual intercourse with their last non-marital and non-cohabitating, thus higher-risk, partner.[16]

The Namibian health authorities are well aware of the consequences of the HIV/AIDS epidemic, not only to the individual, but also to the children of HIV/AIDS positive mothers and the society at large. Policies and programmes are set up accordingly

and designed to prevent infection while at the same time supporting the HIV/AIDS patients with all required facilities and medication enabling him or her to lead a long, productive and satisfactory life. In its essence, the priorities of concerned authorities include the provision of antiretroviral (ARV) treatment, the prevention of mother-to-child transmission (PMTCT) as well as testing and counselling of individuals. This goes hand in hand with preventive interventions including determined information campaigns through the media as well as extensive distribution of free male and female condoms.[24,28]

A meeting was recently held to devise a HIV prevention strategy. In particular, during this meeting the emphasis for the HIV/AIDS prevention policy shifted towards changing behaviour as means to prevent HIV transmission. Here, the value of faithfulness and safe sex is accentuated. In addition, health workers were requested to increase their efforts of counselling, both HIV/AIDS negative and positive individuals, aiming to overcome the stigmas and fears surrounding the pandemic. Together with the guaranteed availability of antiretrovirals, rapid testing is of particular importance. Rapid testing provides for quicker results to the individual requesting the service, which is not only more cost-effective, but also increases the number of persons receiving the test results. Importantly, since individuals receive the results of their tests, they do not have to return to the facility again.[30]

A central aspect of the Namibia HIV/AIDS prevention strategy is effective PMTCT. The strategy includes ARV prophylaxis given to women during pregnancy and labour as well as to the child in the first weeks of life. In particular, HAART regimens in pregnant women achieve high efficacy for PMTCT through significant reductions in the viral load. This is supported by safe obstetric practices and the complete avoidance of breastfeeding after four months. Prevention of mother-to-child transmission will be discussed in more detail in Chapter 3.

Concern regarding STIs does not end with HIV/AIDS. All pregnant women in Namibia are routinely offered syphilis testing. Syphilis and other genital ulcer infections such as herpes, chlamydia and gonorrhoea are thought to facilitate HIV/AIDS infections, with local inflammation possibly increasing viral shredding. This is because such diseases damage the skin around the pubic area and cause scarring. This makes abrasion and small trauma more likely during sexual intercourse, facilitating the infection. It has been estimated that in Uganda genital ulcers were responsible for 83% to 97% of HIV infections.[31] In Namibia, blood tests performed on pregnant women indicates a STI prevalence ranging from 0% to 17,9%. Interestingly, the location with the lowest HIV prevalence, namely Aranos in the Hardap region, has the highest syphilis prevalence rate. Therefore, no apparent relationship between HIV/AIDS and syphilis could be observed.[16]

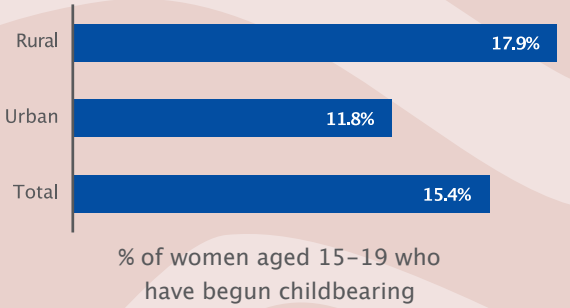
Some cultural and traditional practices influence the transmission of HIV/AIDS. For example, the custom of dry sex practices amongst some groups in Namibia may be assumed to facilitate transmission of STIs. Due to their physical makeup women are especially at risk. With dry sex, the woman dries her vagina before and during sex. This practice increases the probability of abrasions and thus viral transmissions during sex. Moreover, should a condom be used, the practice increases the chance of the condom breaking.[24,25,32] Also, sexual initiation rituals and genital mutilation further increase the risk of STD transmission[33]. On the other hand, male circumcision is a definite factor reducing the transmission of the virus, amongst other reasons due to improved hygiene in the male genital area. In many areas of sub-Saharan Africa male circumcision is a custom, which has defined a negative effect on the infection rate. It has been estimated that the risk of infection for a man is reduced by 60% by circumcision[7,34]. In Namibia, on average 21% of men aged 15-49 years of age are circumcised, with the data exhibiting strong regional variances. Circumcision is most common in Omaheke, Kunene and Otjozondjupa, where 56.7%, 52.2% and 41.6% respectively of men are circumcised, followed by Kavango with 30.5% and Khomas with 26.6%.[7]

2.5 ADOLESCENT PREGNANCY

Adolescence pregnancies and motherhood is often high in developing countries,[35] with Namibia being no exception. As *Figure 20* indicates, more than 15% of women aged 15-19 years have begun childbearing in that they are either pregnant with their first child or already delivered a live birth. In rural areas the adolescent birth rate is higher than in urban areas.[7]

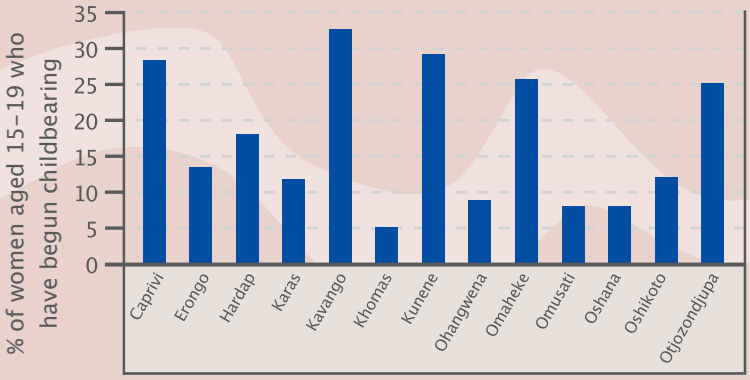
Marked differences between the regions in teenage parenthood can be observed. The highest percentage of women who have begun childbearing is found in the Kavango region, where 34% of women aged 15-19 years have begun childbearing.

FIGURE 20: ADOLESCENT PREGNANCY BY GEOGRAPHIC LOCATION, IN PERCENT, 2006/2007 [7]



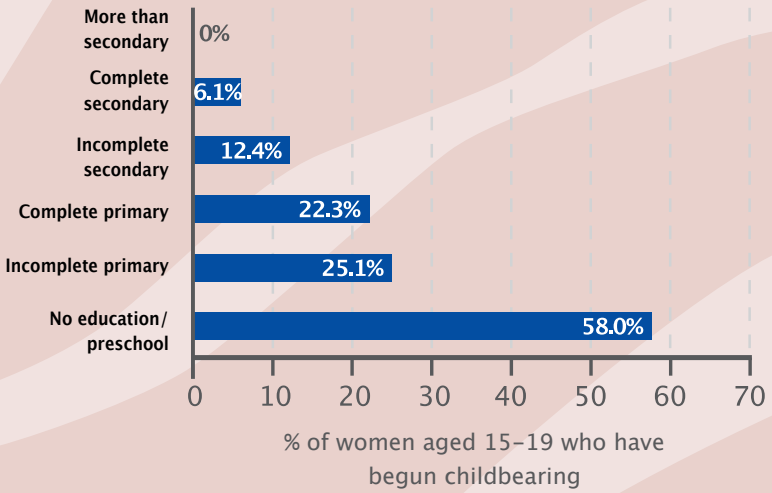
This region is followed by Kunene with 30.5% and Caprivi with 29.7%. *Figure 21* shows the regional differences in the proportions of adolescents who have begun childbearing.[7]

FIGURE 21: ADOLESCENT PREGNANCY BY REGION, IN PERCENT 2006/2007 [7]



A strong correlation between education and pregnancy, and income and pregnancy can be identified. As indicated in *Figure 22*, of the pregnant women aged 15-19 years, 58% had no education. On the other hand, amongst the women who have completed secondary school only 6% were pregnant.[7] Similarly, adolescent pregnancies in the highest wealth quintile were low as compared to the lowest income groups. While 22.4% of the 15-19 year old, who have begun child bearing originated from the lowest wealth quintile, only 4.8% originated from the highest wealth quintile.[7]

FIGURE 22: ADOLESCENT PREGNANCY BY LEVEL OF EDUCATION, IN PERCENT, 2006/2007 [7]



Adolescent pregnancies and motherhood can have serious long-term implications to the young mother. Firstly, teenage pregnancies hold significant health risks to the mother as well as to her child. Adolescents are twice as likely to die in childbirth as are women in their twenties. The main reason for this is the immaturity of the body of the young woman. The birth canal and pelvic bones are not completely developed.

Moreover, adolescent mothers are more prone to anaemia and preterm delivery. Postnatal depression is also high amongst adolescents. The emotional risks to mother and child are aggravated by health care services that are not designed for young women, and thus do not quite match needs and requirements of maternal care for pregnant adolescents. It is important that the form of antenatal care is adapted to the requirements of the young mother. Although the components of the service are to be the same as for mature women, the approach and attitude of the health worker has to be geared towards the needs of the teenager.[35,36,37]

Pregnancy amongst adolescents is also worrisome because it points to the fact that they did not use condoms. This implies that they have been at least exposed to the risk if not been infected by HIV. This is supported by the fact that 87% of babies of teenagers are born outside a fixed union, implying all these mothers have engaged in higher risk sex.[37] High risk sexual practices are also reflected by 2006/2007 DHS data, which indicates that 84.1% of 15-19 year old had higher risk sexual intercourse during the past year.[7]

Adolescent pregnancies have economic implications too. Apart from risks to the young woman and her child during pregnancy and delivery, adolescents falling pregnant and starting to raise children more often than not interrupt their education, with the probability slim of returning to school after the baby is born. Since adolescent pregnancy and childbearing has been associated with poor educational attainment and poverty, childbirth during school going years is likely to result in a reinforcing the vicious cycle of poverty.[37]

Newborn, Infant and Child Health

3. Newborn, Infant and Child Health

As mentioned earlier in the Introduction to this document, for the sustainable development of a nation it is essential to ensure that today's children grow into healthy and economically productive adults. It is the duty of all governments and policy makers to ensure the physical and mental well-being of the nation's children. In order to provide an environment favourable to infant and child health, regular monitoring of this category's health status is a prerequisite.[38]

Against this background, by adopting infant and child health as the fourth MDG[ii], the international community has acknowledged the importance of infant and child health to the development of the individual.[1]

Worldwide, deaths of children under five years of age declined from 93 to 72 deaths per 1,000 live births between 1990 and 2006. Although this trend may partly be attributed to an improved standard of living in many regions, progress clearly reflects the commitment by governments and the international community to improve primary health services as well as to the implementation of numerous interventions and programs designed to reduce child mortality.[iii] However, not all regions in the world experience this trend. Sub-Saharan

Every mother, newborn and child needs to be counted and accounted for in order to monitor progress on the MDGs.[2]

Africa in particular is burdened by high infant and child mortality: One-fifth of the world's children live in this region and more than half of all deaths of under-fives occur here.[1] While child mortality has decreased from a level of 184 per 1,000 live births in 1990 to 157 deaths per 1,000 live births 2006, this progress is far too slow for meeting MDG 4 by 2015.[1]

The following section intends to provide an overview of the health situation of newborns, infants and children under five years of age.

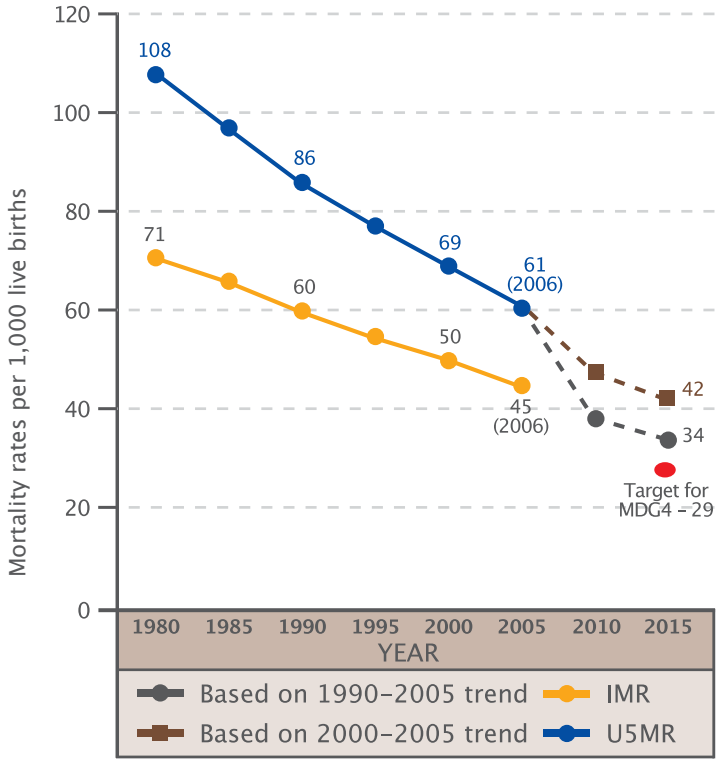
[ii] *Under MDG 4, the commitment was made to reduce by two-thirds infant as well as child mortality between 1990 and 2015.*

[iii] *Important to mention are the 'Nothing but Nets' campaign which, since 2006, distributed more than 700 000 bed nets throughout Africa aiming to reduce the incidence of Malaria; as well as the Measles Initiative and international maternal tetanus vaccination programs.*

3.1 MORTALITY

In Namibia, since the early 1980's, the health situation of newborns, infants and children has improved markedly. The DHS of 2006/2007 shows that the perinatal mortality rate was 29 per 1,000 pregnancies. The overall rate of stillbirths is below 10 in 1,000 pregnancies, while early neonatal mortality lies at 20 deaths in 1,000 pregnancies.[7] As indicated in *Figure 23* infant mortality has declined from 71 deaths per 1,000 live births in 1980 to 45 in 2006. The same trend is observed in the under five mortality rate which is 61 deaths per 1,000 live births. This is a marked improvement from the 1980 level of 108 deaths per 1,000 live births.[39] However, according to the DHS 2006/2007 data, there is a slight upwards trend in infant and under-five mortality as compared to 2000 (38 to 46 and 62 to 69 respectively). Adequate attention and increased efforts are required to stem and revert this trend.

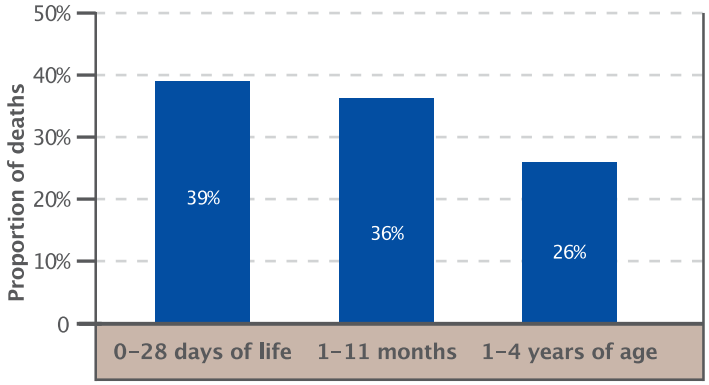
FIGURE 23: RATE OF PROGRESS TOWARDS MDG4 [39]



This reduction in mortality rate is not sufficient to meet the MDG target, particularly deaths of under five year olds which is set at 29 per 1,000 live births by 2015. In spite of the consistent reduction in under five mortality between 1980 and 2000, the period since 2000 showed a drop in the rate of reduction. Extrapolating the 2000-2006 rate of reduction in under-five mortality towards 2015, the number is expected to be 42 deaths per 1,000 live births, which is about 1.5 times higher than the set target of 29. The implication is that major interventions need to be put in place for this target to be met, especially since it becomes more challenging to maintain and even increase the rate of decline as the level of mortality reduces. In particular, a thorough understanding of the dynamics and complexities underlying infant and child mortality is required.

Based on estimates from the Inter-Agency Child Mortality Estimation Group (IACMEG) for 2006, three-quarters of all under-five years old deaths in Namibia occur during the first year of life: 39% in the neonatal period and another 36% between the first and the 11th month of age. The remaining 26% occur between the second and the fifth years of age.[39] These proportions are presented in *Figure 24*.

FIGURE 24: DISTRIBUTION OF UNDER FIVE DEATHS BY AGE GROUPS IN PERCENT, 2006 [39]



Newborn survival is closely linked to maternal health and survival. Every day more than 10,000 newborn die mostly because pregnant women do not have access to skilled emergency care.[2]

Among the regions, strong variations in under-five mortality can be observed. According to the DHS 2006/2007, the highest under-five mortality rate among the 13 regions surveyed in Namibia was reported in Ohangwena. *Figure 25 (overpage)* indicates that in this region, 95 children per 1,000 live births died before they reached age five. This was followed by Caprivi with an under-five mortality rate of 93 per 1,000 live births. In contrast, Kunene shows a significantly lower mortality rate, with 49 deaths per 1,000. [7]

FIGURE 25: UNDER-FIVE MORTALITY BY REGION IN 2006/2007 [7]

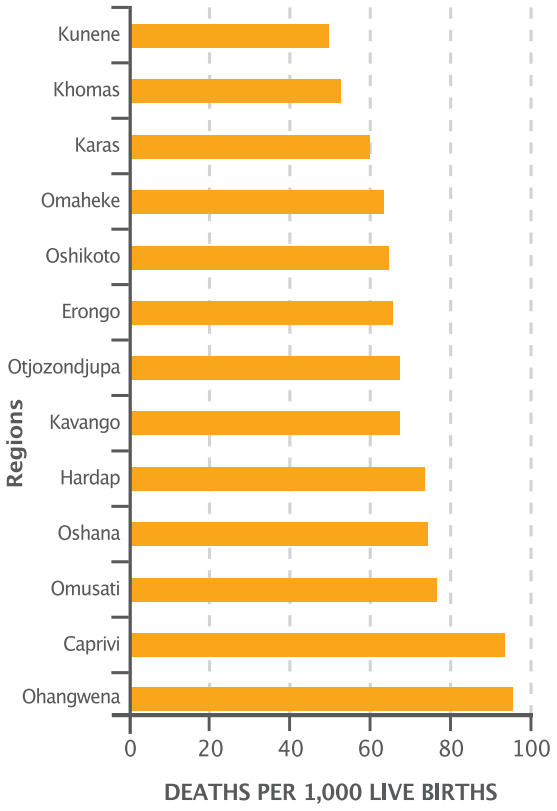


FIGURE 26: INEQUITIES IN UNDER-FIVE MORTALITY BY RESIDENCE, INCOME AND EDUCATION, IN PERCENT [40]

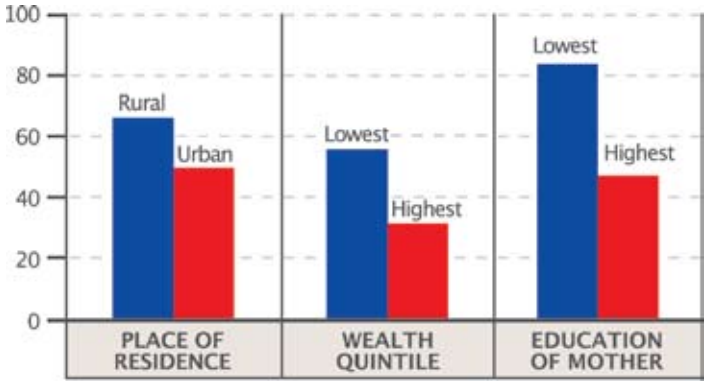


FIGURE 27: ABSOLUTE DIFFERENCE IN UNDER FIVE MORTALITY, BY RESIDENCE, INCOME AND EDUCATION [40]

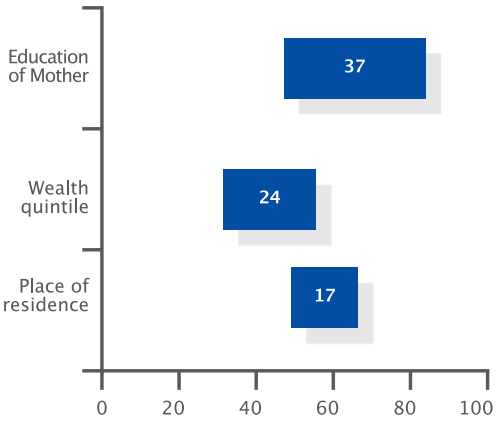
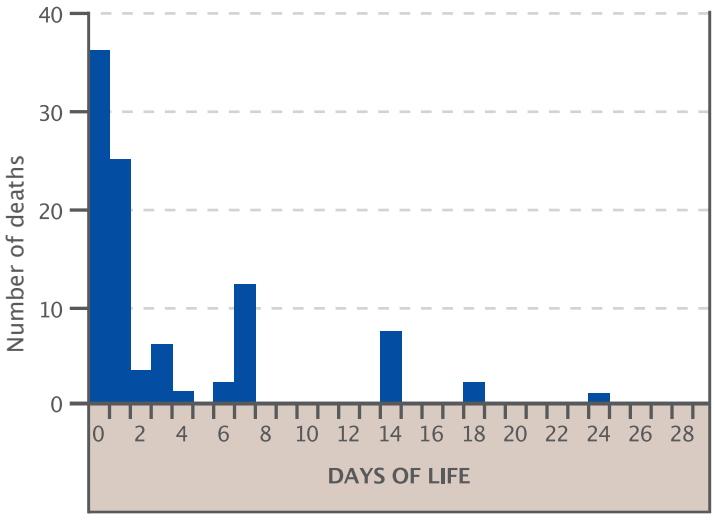


FIGURE 28: DISTRIBUTION OF NEONATAL DEATHS BY DAYS OF LIFE [8]



Under-five mortality is 1.3 fold higher in rural than in urban areas. Moreover, the under-five mortality rate is nearly double among children in the lowest wealth quintile as compared to children in the highest wealth quintile. This latter relation is also true in terms of the mother's education *(Figure 26)*. Seventeen more deaths occur due to the child's place of residence, 24 according to whether the child is in the highest or lowest wealth quintile, while 37 more deaths are to be attributed to the difference in the education of mothers[40] *(Figure 27)*.

Of the neonatal deaths, most deaths occur within the first week of birth. As indicated in *Figure 28*, 37% of 79 neonatal deaths surveyed during 2000 occurred immediately after birth, 62% within the next day and 76% during the first week of life.[8]

During 2006, of an approximate 1,200 neonatal deaths it has been estimated[iv] that nearly three-quarters of deaths were due to preterm births (39%), followed by birth asphyxia to which 25% of babies succumbed. Nine percent of deaths can be related to congenital anomalies. A further 19% of neonatal deaths were caused by infections, especially pneumonia and sepsis, neonatal

[iv] *These are estimated proportions of causes of death obtained from models with input data from available population-based studies from 51 countries. Therefore, they are not necessarily the same as those estimated/reported by the Member State, which may use alternative methods of estimation of causes of death. However, all Member States have undergone an official country consultation on these estimations.*

tetanus and diarrhoea. After the neonatal period, the majority (53%) of children died due to HIV/AIDS related illnesses. Other causes of deaths during the post neonatal period can be related to post neonatal diarrhoeal diseases (3%), acute respiratory infections (3%) and injuries (3%).[40] This is indicated in *Figure 29*.

Stillbirths occurring after seven months of gestation plus deaths to live births within the first seven days of life constitute perinatal deaths. The causes of stillbirths and early neonatal deaths are closely linked and by examining just one or the other can lead to the understanding of the true level of mortality around delivery. For this reason, deaths around delivery are combined into the perinatal mortality rate. In developing countries, it has been shown that almost 50% of perinatal deaths are stillbirths.[41, 42] The stillbirth and neonatal death rates are an important indicator of the quality of antenatal, obstetric and postnatal care. This is supported by the example of a hospital in Harare, where stillbirths were consistently and strongly associated with lack of prenatal care and also problems with the care available during labour and delivery.[41]

FIGURE 29: ESTIMATED DISTRIBUTION OF CAUSES OF CHILD DEATHS IN PERCENT [40]

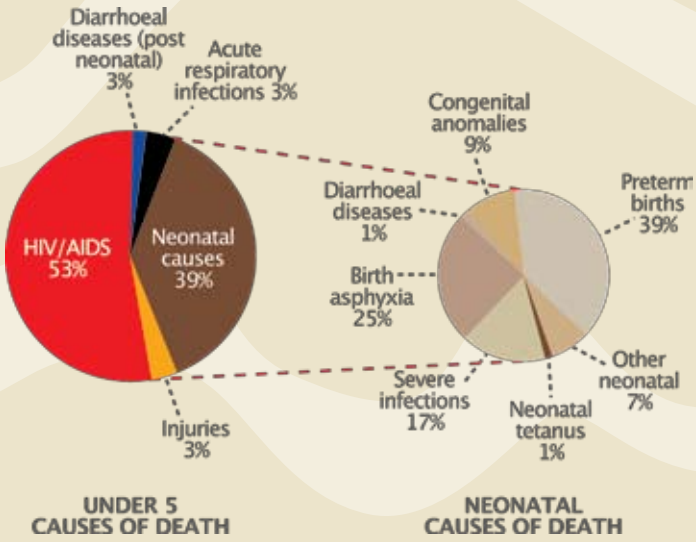


FIGURE 30: PERINATAL MORTALITY RATE [7]

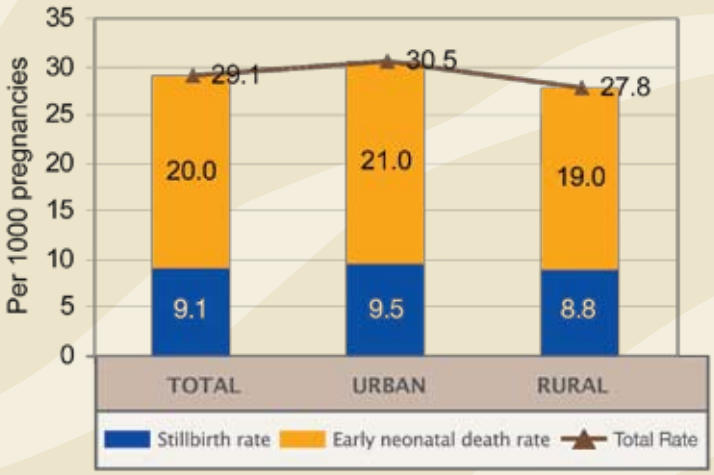
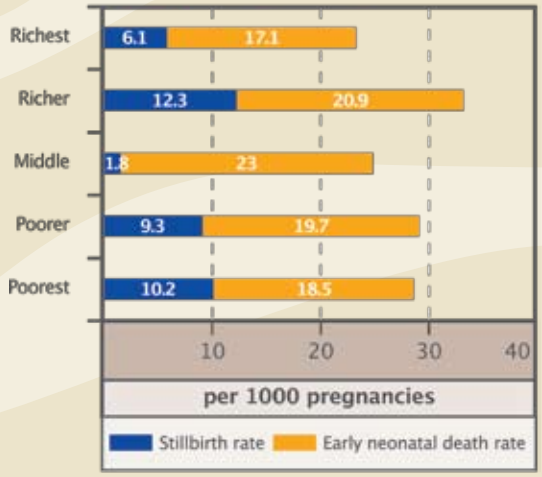


FIGURE 31: PERINATAL MORTALITY BY INCOME [7]



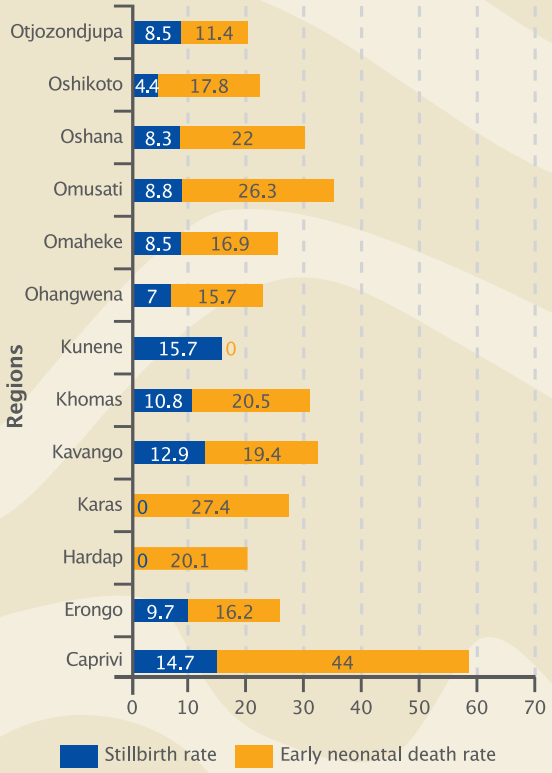
As indicated by *Figure 30*, the rate of stillbirths and also neonatal deaths is slightly higher in urban than in rural areas.

Interestingly, and as shown in *Figure 31*, there is no clear relationship between wealth quintile and level of perinatal mortality.

Strong regional variations in perinatal mortality can be identified. As shown in *Figure 32 (over page)* the rate varied from a high of 59 per 1,000 pregnancies in Caprivi to a low of 16 per 1,000 pregnancies in Kunene. Caprivi shows a particularly high early neonatal death rate of 44 in 1,000 pregnancies.[7]

It is observed that the highest risk to the life of children occurs immediately after birth and mainly results from complications originating during pregnancy and delivery, although infections also constitute a threat. After the first month, infections become more and more relevant as direct causes of death, with respiratory infections, diarrhoea, and HIV/AIDS being the most important threats.[40] The following paragraphs will introduce measures

FIGURE 32: PERINATAL MORTALITY BY REGION PER 1,000 PREGNANCIES [7]



and interventions in place designed to reduce newborn, infant and child mortality in Namibia.

3.2 INTERVENTIONS

Child and Infant Health Care Services

As discussed under section 2.2, in order to prevent and be prepared for possible complications during pregnancy and delivery, at least four antenatal care visits are recommended. During pregnancy in particular, the overall well-being of the mother is crucial to the well-being of the child. Apart from screening and preparing for possible obstetric complications, for the well-being of the child it is critical that the mother receives certain interventions. During the antenatal period, health professionals should ensure that women are vaccinated against tetanus infections, since this remains a significant health risk to the newborn. In addition, to prevent anaemia, it is useful to administer intestinal parasite treatment to pregnant women.[7] Malaria is a further threat to the health of both mother and child. As indicated, pregnant women are more prone to malaria infections than non-pregnant mothers. Therefore, mother's protection against malaria is essential

during pregnancy. The DHS 2006/2007 indicates that in the group of pregnant women aged 15-49 years, 10.6% slept under any net, 9% did so under an ever treated net, while 8.8% slept under an insecticide treated net (ITN) in the night prior to the survey *(Figure 33)*.[7]

FIGURE 33: PERCENT PREGNANT WOMEN SLEEPING UNDER BED NETS [7]

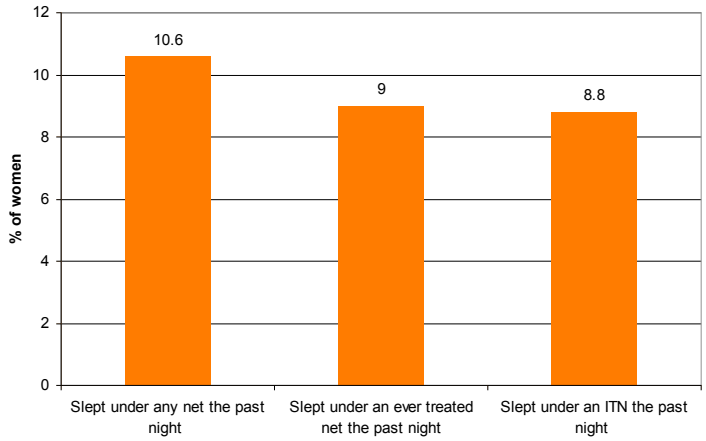


FIGURE 34: EFFECTIVE COVERAGE OF INTERVENTIONS FOR NEWBORNS AND INFANTS, IN PERCENT [7,43]

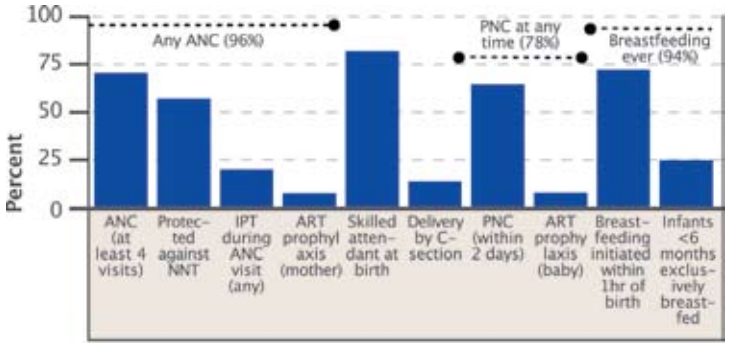
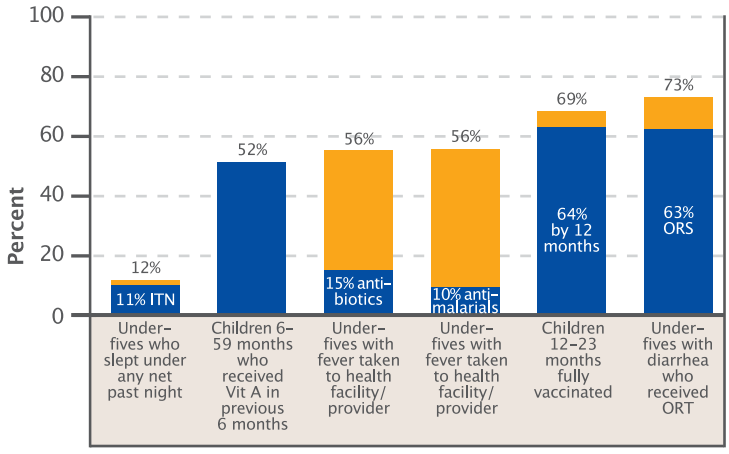


FIGURE 35: EFFECTIVE COVERAGE OF INTERVENTIONS FOR CHILDREN UNDER FIVE, IN PERCENT [7]



Vaccination Coverage

During delivery, assistance from a SBA is crucial. Appropriate care during labour as well as immediately after delivery contributes significantly to the health of the child, in that correct procedures are applied to assist the mother during delivery especially in case of an obstetric emergency, after birth concerning the drying of the baby and the immediate initiation of breastfeeding. Moreover, in the presence of a SBA the identification of ailments such as birth asphyxia and jaundice are speeded up and improved. Further, during the postnatal period it is crucial to administer ARV treatment prophylaxis to further reduce the probability of infection. [7,10,28]

Figure 34 below exhibits the effective coverage of available interventions for newborns and infants. About 55% of women were vaccinated against tetanus and coverage of ARV prophylaxis was less than 10%. Considering that about 18% of pregnant women are HIV positive, the ARV coverage is rather low. Prophylaxis administered to the baby is at about the same level. Again, considering the high percentage of under-five deaths due to HIV/AIDS, this level is also rather low. More than 70% of births were assisted by SBAs, and more than 10% of babies were delivered by caesarean section. Most women (94%) have breastfed, and more than 70% initiated breastfeeding within the first hour of delivery. [7,43]

The overall coverage of immunization has improved markedly compared to 1992 (75.7%), and 2000 (80.4%).[7,8,11] *Figure 35* shows that during 2006, almost 70% of children have received all required vaccinations. The coverage of measles vaccination is at 83.8%. Although this shows good immunisation coverage, there is a marked variance between regions. Lowest vaccination coverage is in Kunene and Caprivi regions, where only 35.3% and 47.7% respectively of children aged 12-23 months of age have been fully vaccinated. Omusati (81%), Erongo (76.3%) and Khomas (75.5%) on the other hand exhibit higher coverage. [7]

Figure 35 further presents effective coverage of interventions for older infants and children under five. It is shown that during 2006/2007, 12% of under fives slept under a mosquito net, of which

11% of nets were treated with insecticides. Use of bed nets vary according to the region. In the Caprivi region where malaria is endemic, about 48% of children slept under a net, while in the Erongo region less than 1% made use of a net. [7] As are pregnant women, infants and under five year old children are particularly susceptible to this disease, with severe anaemia and even death as a consequence. Of children younger than five years, about 56% were taken to a hospital where 15% of children received treatment in the form of antibiotics, and 10% received anti-malarials. In cases of diarrhoea, 73% of under five year old children received increased fluids or oral rehydration therapy. [7]

HIV/AIDS Prevention, Treatment and Care

Considering the prevalence of HIV amongst pregnant women in Namibia, ARV treatment is one of the most important interventions to prevent the transmission of the virus from mother to child. If a mother is HIV positive, her child can be infected from her either during pregnancy, during labour and delivery, or through breastfeeding. The probability for the child being infected is about 16% during pregnancy, 50% during labour and 34% via breastfeeding. The main factors increasing the risk of mother-to-child transmission (MTCT) include a high viral load in the mother as well as advanced HIV/AIDS as measured by a low CD4 count. Moreover, a complicated and prolonged delivery increases the risk of transmission. Since a caesarean section significantly reduces the risk of transmission during labour, it is sometimes recommended to deliver a baby by means of a caesarean section. The presence of genital tract infections also increases the probability of MTCT. Prolonged breastfeeding is another risk of transmission which explains the official policy of breastfeeding exclusively for not longer than four months, and then introduction of replacement food. [21,28]

Trends in Coverage of Interventions

Trends in coverage of health interventions for newborns and children under five suggest that it has been on the increase since 1992, except for initiation of breastfeeding within one hour after birth; and the treatment with anti-malarial drugs amongst under five year old. As shown in *Figure 36* for both interventions, coverage has gone down since 2000. [7,8,11]

FIGURE 36: TRENDS IN COVERAGE OF INTERVENTIONS FOR CHILDREN UNDER FIVE, IN PERCENT, IN 1992,2000, 2006/2007 [7,8,11]

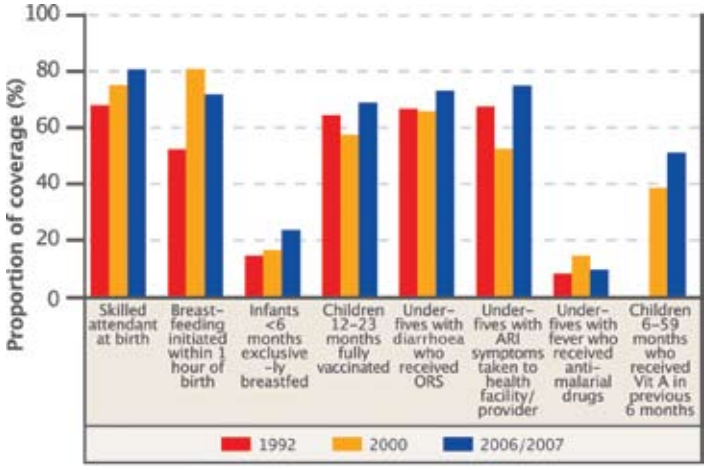
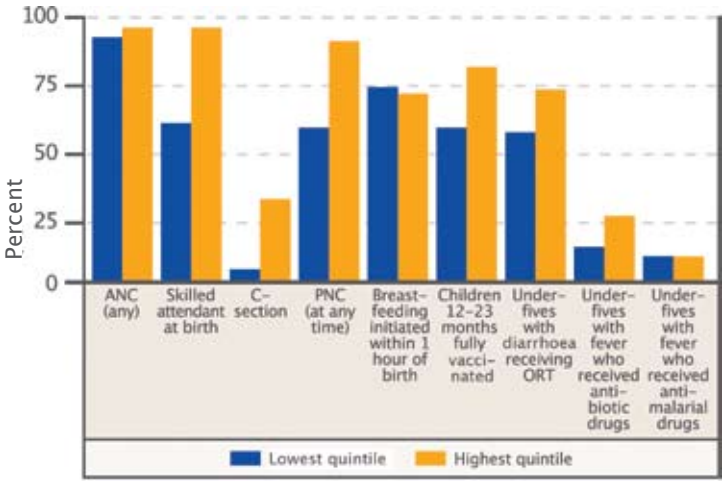
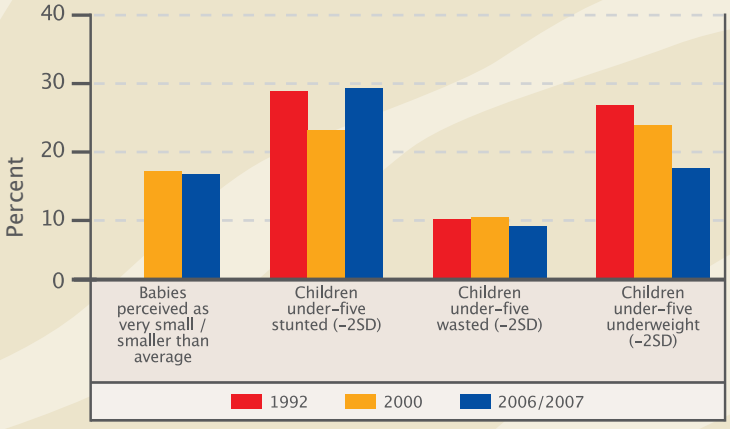


FIGURE 37: INEQUITIES IN COVERAGE OF SOME INTERVENTIONS BY INCOME, IN PERCENT, IN 2006/2007 [7]



Coverage of interventions is consistently higher for the upper wealth quintile *(Figure 37)*. Only for initiated breastfeeding within the first hour after birth that the lowest quintile has marginally higher percentage coverage. In terms of anti-malaria treatment, lowest and highest wealth quintiles have similar coverage. [7]

FIGURE 38: TRENDS IN NUTRITIONAL STATUS AMONG CHILDREN UNDER FIVE, IN PERCENT, IN 1992, 2000, 2006/2007 [7,8,11]



3.3 NUTRITION

The nutritional status at every stage in life plays a vital role in the development of the child. As indicated by *Figure 38*, 7.5% of under five year old children are wasted, implying acute malnourishment. Almost 30% of children are stunted. Stunting indicates chronic malnutrition and implies permanent damages to the development of the child. 16.6% of children are underweight, with this concept combining the notions of both acute and chronic malnutrition.[7] These statistics show a relatively high rate of malnutrition amongst children in Namibia. Although the percentage of underweight and wasted children is lower than during 1992 and 2000, the percentage of chronically malnourished children appears to be on an increasing trend.

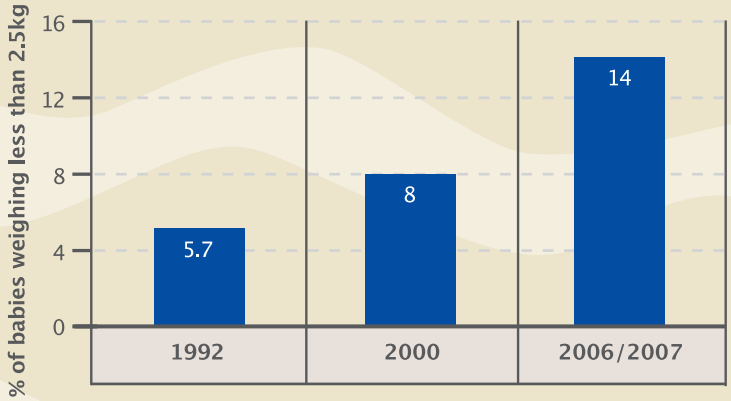
Figure 39 (over page) contains information regarding the size of babies. About 15% of babies were perceived as smaller than average. A more precise measurement of the size of newborns is offered by birth weight. A baby is expected to weigh more than 2500 grams at birth.[7] Newborns weighing less than 2500 grams are considered of a low birth weight (LBW). This is a useful

benchmark since differences in weight and size at birth is determined by the physical condition of the mother rather than by the genetic makeup of the parents which become apparent only later in life[44].

By negatively influencing the future growth and development of a child, LBW has a clear deteriorating impact on the well-being of the child, especially when the means are not available to give this newborn special attention. Factors contributing to LBW are the age of the mother and the birth interval between births. More importantly, poverty, poor nutrition and infections such as malaria, are often the main cause of LBW amongst newborns.[45] In Namibia, during 2006/2007, 14% of babies were too light for their gestational age as illustrated in *Figure 39*. This is a clear increase from 5.7% during 1992 and 8% during 2000.[7,8,11] Interestingly, according to the DHS 2006/ 2007, almost 16% of women[v] during 2006 were underweight and exhibited a body mass index of less than 18.5.[7]

Availability of enough food is not sufficient to ensure a healthy diet. Especially for young children and pregnant women, the micronutrient intake is also important. Vitamin A, iodine and iron supplements as well as oils are essential for a good physical and mental development. Deficiencies in these micronutrients may cause physical impairments such as blindness, goiter development and anaemia.[46] In the long run, consequences of such deficiencies include reduced physical work capacity and productivity, impaired cognitive functions and brain metabolism and reduced immunity. To prevent shortcomings in micronutrient intake a variety of food needs to be consumed. The Namibian health authorities provided 52% of the children with the micronutrient vitamin A in 2006/2007.[7]

FIGURE 39: CHILDREN BORN WITH LOW BIRTH WEIGHT, IN PERCENT, IN 1992, 2000, 2006/2007 [7,8,11]



[v] *The women surveyed were not pregnant or breastfeeding.* [7]

The infant usually receives most of the nutrients it requires for adequate growth until six months of age through breast milk. Breastfeeding for a longer period is often not possible though. Many women have to return to work, and or have to look after a younger sibling. In some cases women also do not produce enough milk or stop lactating. In cases where mothers do not breastfeed or whose milk is not nutrient rich enough to sufficiently feed the baby, it is critical for the development of the child to provide it with supplementary micronutrients.[46,47]

For HIV positive women, a reason not to breastfeed is the fact that the virus can be transmitted through breastfeeding. This is a severe predicament to mothers. Not to breastfeed deprives the child of a number of invaluable advantages arising from breastfeeding. The Namibian policy concerning breastfeeding by HIV positive mothers is to breastfeed exclusively for four months and then feed supplementary food only. [28] Here, it is critical that the mother does not fall back to breastfeeding after this has been interrupted, since it significantly increases the chances of HIV transmission. The main reason being that if children are fed supplementary food they are more prone to get diarrhoea which weakens the immune system and increases the likelihood of HIV and other infections.

In this context poverty and other socio-economic factors are a significant obstacle to adherence to this policy. Supplementary foods may be expensive and also not always available, especially in remote areas. Moreover, supplementary food needs to be prepared and is not readily available as is the case with breast milk. It is therefore, not inconceivable that the mother succumbs to the temptation to feed her hungry baby with breast milk. An additional problem with supplementary food is that the condition under which it is prepared have to be absolutely hygienic, which in a poorer socio-economic environment is not always the case, partly because poverty is often associated with lower education attainment and thus a less firm understanding of the importance of cleanliness, especially in preparing food for an infant. A consequence of the unhygienic preparation of food is often diarrhoeal infections causing malnutrition and overall physical deterioration. [46,47,48]

Policies geared towards supporting the most vulnerable children are in place in Namibia. [49,50] In particular, caregivers of orphans and vulnerable children receive financial support from government to look after the children.[51]

Implications of the Socio-economic Environment

4. Implications of the Socio-economic Environment

The variable with probably the strongest effect on physical and also mental well-being for all individuals, but especially for mothers and children is the level of income. Poverty affects persons in several ways. The direct effects of poverty have as result a deteriorating physical condition due to low and inappropriate nutritional intake, increasing the risk to become infected by communicable diseases. In addition, for the poor, the perceived cost of accessing health care results in a less than desirable level of utilisation of health services.[52,53]

Poverty is also often associated with lower education. Lack of education usually translates into lacking information regarding appropriate nutritional and child-feeding practices and also regarding questions of hygiene. In addition, lacking information may also translate in ignorance regarding the availability and, just as important, the right to quality services designed to reduce the burden of poverty.[52,53]

Gender equality and women's empowerment enhance women's access to, and control over resources, which are linked to better health outcomes, including improving maternal and newborn health.[2]

The high prevalence of gender violence is an important aspect affecting maternal and child health, where violence is considered a mix of assaulting and coercive physical, sexual and psychological behaviours designed to manipulate and dominate the partner to achieve compliance and dependence.[54] Due to stress induced by poverty and unemployment, men and women may resort to substance abuse and violent behaviour towards each other and/or towards their children. Apart from women sustaining physical and also

psychological injuries, partner violence is also strongly associated with increased risk to the unborn child.[55] Partner violence is a serious concern in Namibia. About 44% of men are of the opinion that women sometimes deserve to be beaten. Surprisingly, almost 30% of women agree with this. Moreover, 35% of men do not consider forcing their partner to have sex as rape. Again, 33% of women are of the same opinion.[54]

Gender equality and women's empowerment enhance women's access to, and control over resources, which are linked to better health outcomes, including improving maternal and newborn health.[2]

The behavioural pattern of multiple and concurrent sexual partners is a risk to reproductive health. The risk such behaviour holds in terms of STIs is well documented.[25] In addition, the fear especially amongst younger, unemployed women that their partner may leave them, coerces them into a submissive position with little negotiating power concerning sexual practices, child care and spending patterns.[56]

Alcohol abuse is commonly recognised as a wide spread social problem in the country and linked to violence, abuse and various types of risk taking, including sexual risk taking. Of the children aged 10–14 years, 60% were exposed to alcohol abuse and drunken behaviour. This explains the very young average of 10.5 years of age at which children have started to use alcohol. About one in three were exposed to people having sex, and more than 26% of females in that age group were sexually abused. Of those teenagers who fell pregnant, over 40% was the result of forced sex.[37]

The discussions on the socio-economic environment and the behavioural patterns here are not exhaustive of the topic. For a thorough understanding of the dynamics surrounding health and the underlying root causes of maternal and child health in Namibia a more comprehensive consideration and incorporation of the socio-economic situation is essential.

Conclusion

5. Conclusion

The Namibian Government is committed to ensure good maternal and child health, as a contribution to the sustainable development of the Nation. To ensure universal health of every woman and child, a holistic health care approach with multi-sectoral involvement is adopted.

The recently launched DHS 2006/2007 has revealed that the progress made in this area is being hampered by a number of challenges. It is recorded that under-five mortality has gone down since 1992 but is in an upward trend since 2000. The maternal mortality ratio has increased from 271 deaths in 100,000 live births in 2000 to 449 deaths in 100,000 live births in 2006/2007, compromising the achievement of Millennium Development Goal 5, if significant efforts are not made to curb this trend. Major causes of maternal mortality are related to emergency obstetric care.

Overall, there has been a substantial increase in access to maternal and child health care services and coverage of critical interventions in the country, although there are significant regional variances and differences. The vastness of Namibia is a considerable obstacle to adequate service delivery in remote rural areas.

HIV/AIDS and other sexually transmitted diseases are a serious public health concern to sexual and reproductive health. Increased awareness and understanding among the population has increased the use of condoms, but behavioural patterns such as higher risk sex remain serious obstacles to improve sexual health indicators.

Socio-economic factors influence the health of mothers and children. In this context the effects of poverty are of particular concern. Multiple and concurrent sexual partners, violence and alcohol abuse are further challenges to maternal and child health in Namibia.

In moving forward, interventions towards improving emergency and obstetric care, routine immunization and HIV prevention, among others, will need to be scaled up, if the health-related Millennium Development Goals are to be achieved. Particular attention is to be paid to those regions where access and coverage is lower and mortality higher.

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