1998 SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY REPORT FOR EASTERN CAPE PROVINCE

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Measure Evaluation

The **EQUITY** Project
...strengthening equitable access to quality health services for all South Africans...

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Abbreviations

ARI	acute respiratory infection
BCG	bacille Calmate-Guérin
BMI	body mass index
CHW	community health worker
CMR	child mortality rate
DHS	Demographic and Health Survey
DPT	diptheria, pertussis, tetanus
ECDOH	Eastern Cape Department of Health
GDS	genital discharge syndrome
GPS	Global Positioning System
GUS	genital ulcer syndrome
HST	Health Systems Trust
IMR	infant mortality rate
MCH	maternal and child health
MRC	Medical Research Council
NDOH	National Department of Health
NMR	neonatal mortality rate
OLS	ordinary least squares
ORS	oral rehydration salts
ORT	oral rehydration therapy
PEFR	peak expiratory flow rate
PMR	perinatal mortality rate
SADHS	South Africa Demographic and Health Survey
TB	tuberculosis
TFR	total fertility rate
U5MR	under 5 mortality rate
UFS	University of the Free State

SUMMARY OF FINDINGS

The health status of the population of the Eastern Cape Province of South Africa has historically lagged that of many of the other provinces of the country. However, even within the province, substantial differences in health status exist between subpopulations within different regions, racial groups, and income levels. Data from the 1998 South Africa Demographic and Health Survey (SADHS) (South Africa Department of Health, Medical Research Council, and MEASURE DHS+1, 2000) confirm and quantify the large inequities that exist between the Eastern Cape Province and other provinces in South Africa, as well as within the Eastern Cape, between the former black homelands and the former Cape Provincial Authority. These data paint an epidemiological picture of a society simultaneously experiencing chronic conditions and non-communicable diseases typically experienced later in the epidemiological transition, while still struggling with basic childhood and communicable diseases.

The rich data from the 1998 SADHS are augmented here by data on the government health facilities that serve the population of the Eastern Cape. The 1998 Facility Audit – conducted in 621 government clinics across the province – provides a detailed assessment of the quality of care and service availability in the government health system. Extensive data have been collected on staffing, training, availability of services, supplies and equipment, and staff adherence to standard treatment guidelines. Using geographical information systems, these two sets of data are linked so that the impact of facility quality and availability can be measured relative to individual and household factors such as wealth, education, and region of residence to identify key determinants – and obstacles – to using health services.

Key Findings:

Child Mortality

- Neonatal, Infant, and Under Five mortality rates for the province as a whole were 25, 61, and 80 deaths per 1,000 live births respectively. Rates were higher among boys, in rural areas, and among poorer households. In the former black homeland of Transkei, the infant mortality rate was 83 deaths per 1,000 live births. In non-Transkei areas, it was considerably less – 51 in non-Transkei rural areas and 35 in urban non-Transkei areas.
- Cox proportional hazard models indicate that early childhood mortality was negatively associated with mother's age and education and child-rearing experience. Short birth intervals, more common among higher parity women, contributed to premature mortality.

Fertility and Family Planning

- The provincial total fertility rate was 3.5 births per woman. Total fertility rates were many times higher in the former Transkei than in the rest of the province. They were also many

times higher in poorer income quartiles and in rural areas than in higher income groups and in urban areas.

- The contraceptive prevalence rate was approximately 60 percent among sexually active women, 46 percent among married women, and 47 percent among all women aged 15 to 49 years. The predominant form of contraception was injectables, used by 37 percent of sexually active women. Only 1 percent of sexually active women used condoms as their regular source of contraception, but ever-use of condoms and use of condoms during last sex were somewhat higher – 15 percent and 8 percent respectively. Over 60 percent of sexually active women who have ever used condoms reported using them during their last sex.

Maternal and Child Health

- Antenatal care was used by 95 percent of pregnant women. The majority of women received their antenatal care from a trained nurse or midwife (83 percent); most of the remainder received antenatal care from a doctor (12 percent).
- Approximately 70 percent of women giving birth in the 5 years preceding the survey delivered in modern medical facilities. A much higher percentage of women in the former Transkei (37 percent) delivered at home than in other rural areas (26 percent) and in urban areas (4 percent).
- Overall, the prevalence of diarrhea in the 2 weeks prior to the survey was 12.7 percent. Approximately 60 percent were treated with oral rehydration salts or suitable alternatives. The prevalence of acute respiratory infection (ARI) was 14.6 percent of children under age 5. Children's health outcomes – diarrhea prevalence, acute-respiratory infection prevalence, immunization coverage – were considerably worse in Alfred Nzo and Oliver Tambo district councils than elsewhere.
- Approximately half of all children were not receiving the recommended childhood vaccinations. Only 50.7 percent of children aged 12 to 23 months had received the full set of DPT3, Polio, BCG, measles, and hepatitis vaccinations. Drop-out rates were high. Approximately one fifth of children 12 to 23 months started the sequence of DPT3 vaccinations, but did not finish them. Nearly one quarter started the sequence of polio vaccinations, but did not finish.
- Exclusive breastfeeding was almost non-existent in the Eastern Cape. From birth, most children were given a diet that included water and other liquids. The median duration of breastfeeding was over 9 months, but varied by region. Children in urban areas were breastfed only 5 months on average. Breastfeeding duration was longer among poorer households with less hygienic water supplies.
- A substantial proportion of surveyed children under the age of 15, approximately 12 percent, were orphans. Further, even among those who were not orphaned, a significant proportion – 31 percent – were not living with either of their parents.

AIDS Knowledge and Behavior

- Knowledge and awareness of HIV/AIDS among women in the survey was high. Virtually all women had heard of HIV/AIDS and most knew of some means to avoid it – safe sex (87 percent), using condoms (85 percent), and not sharing needles (87 percent). Knowledge and awareness were somewhat lower among poorer and less educated women, and among women living in Alfred Nzo and Oliver Tambo district councils. Knowledge and awareness questions were not asked of men in the survey.
- Some misconceptions existed regarding HIV transmission mechanisms, including through mosquitoes, sharing food, or associating with infected individuals.
- Stigma regarding HIV/AIDS also were apparent among surveyed women. A significant proportion of women (70 percent) believed that health authorities should be informed of an infected individual. Only 17 percent of women reported that they know of someone who was infected or who had died from AIDS.

Adolescent Health

- Approximately 56 percent of adolescent women aged 15 to 19 had had sex by the time of the survey, but sexual activity differed substantially by education, income, and region of residence.
- The age at first sex declined over the 10 years preceding the survey. Adolescents started sex a full year sooner – at 16.8 years of age – than women did 10 years previously.
- Condom usage, ever and during last sex, was considerably higher among adolescents than among older women.
- Among adolescents, knowledge of AIDS and ways to avoid it was over 90 percent for all groups and regions but was still not universal.

Adult Health

- Nearly half of the Eastern Cape population was classified as either overweight (24.2 percent) or obese (21.1 percent). The prevalence of obesity was considerably higher among women, individuals who were wealthier, and adults who lived in urban non-Transkei areas.
- Nearly one fifth of the adult population was classified – either by measurement or because they were taking medication – as having hypertension. In multivariate logistic estimations, hypertension was associated with older adults, higher levels of education, or with being white or Asian and being in urban areas (relative to being in the former Transkei).
- Approximately 14 percent of men aged 15+ reported symptoms of a genital discharge syndrome (GDS) and 4 percent reported symptoms of genital ulcer syndrome (GUS). The odds of GDS were higher among older men, men with a Sub A- Standard 3 education, and men who smoked or drank, but were lower among men in the former Transkei.

- Approximately 4 percent of women and 6 percent of men reported having ever had at least one episode of tuberculosis (TB) confirmed by clinic personnel, and 22 percent of those occurred in the past year.
- A significant proportion of adults (18 percent) reported having used a government hospital or clinic in the past month, but a significant proportion also reported having used a private doctor, hospital or clinic (12 percent). Satisfaction was higher at private providers. Use of private care was positively correlated with income.

Impact of Facility Quality

- Individuals and households were linked to health clinics in a unique manner using Geographical Information System (GIS) locations for the areas in which households live and the clinics that are close to those areas.
- Clinic quality and service availability – as measured by an index of facility capacity, primary health care services, staffing levels, training, and supervision – were examined to determine their impacts on individual use of services. While use of services differed considerably by different education, income, and racial groups, it was also found that clinic quality and service availability impacted on health behaviors and health outcomes. In the former black homeland of Transkei, training a health worker in the Expanded Program on Immunization (EPI), for example, was associated with an increase of 8.6 percentage points in the likelihood that a child would receive a DPT3 vaccination. Having a community health worker (CHW) at a clinic increased the likelihood by 10.1 percentage points.
- Recent training of health workers appeared to be more common in areas where the health of the population tended to be better rather than in the areas where health was worse and training might have larger impacts. Further, utilization of services was linked to the availability of key medical personnel such as doctors and nurses. Again, those areas where staff were most lacking were also those areas with the worst health outcomes.

Table S.1 Health indicators for seven district councils of Eastern Cape Province

District Council	Infant Mortality Rate (1988-1998)	Total Fertility Rate (1993-1998)	% Sexually Active Women 15-49 Currently Using Contraception	Trained Assistance at Delivery (% births in past 5 years)	% Children 12-23 Months Received All Vaccines	% Adult Females Who Were Obese	% Adults Suffering from Hyper-tension	% Men 15+ with Recent Symptom of Sexually-Transmitted Disease
Alfred Nzo	88	4.1	24.3	75.8	46.8	30.1	13.0	11.9
Amatole	34	2.8	69.7	77.0	51.3	29.4	13.1	19.4
Chris Hani	57	3.1	61.0	84.7	50.0	29.6	16.9	16.6
Mandela	38	2.4	67.5	94.6	53.9	36.1	14.6	16.5
Oliver Tambo	94	5.0	38.4	59.0	46.9	23.0	9.1	8.6
Ukhahlemba	53	3.2	71.0	85.3	48.3	27.1	10.2	15.8
Western	27	2.1	84.6	86.8	74.7	23.9	21.7	15.9
Total	67	3.4	59.9	74.6	50.7	28.9		15.4

CHAPTER 1. INTRODUCTION

1.1 Study Objectives

A variety of data on health systems and health behaviors in Eastern Cape Province, South Africa permits analyses of the complex pathways by which the Eastern Cape Department of Health (ECDOH) and the EQUITY Project are helping to redress past health inequities in the province. Two sources of data are used here to examine the impacts of their efforts. The first, the 1998 South Africa Demographic and Health Survey (SADHS), contains information on adult health conditions; sexual, reproductive and women's health; maternal and child health; adult, maternal, child and infant mortality; and fertility and contraceptive use. The second, the 1998 Facility Audit, contains information on service availability and quality at over 600 government health facilities in Eastern Cape that are directly affected by the programs of the Department of Health and the EQUITY Project.

Much of the data collected in the SADHS and the 1998 Facility Audit have been ably summarized in other documents, most notably *Primary Health Care in the Eastern Cape Province 1997-2000*. That report profiles the health situation in the Eastern Cape Province, documenting health differentials within the province as well as providing an explicit picture of the functioning of clinics within the government health system. Data were culled not just from the SADHS and 1998 Facility Audit, but also from national clinic surveys conducted in 1998 and 2000, Eastern Cape clinic audits, the District Health Information System (DHIS), and a variety of other health data sources. The report paints a broad picture of the divisions that exist within the country and within the Eastern Cape Province and changes that have occurred in recent years to ameliorate those divisions.

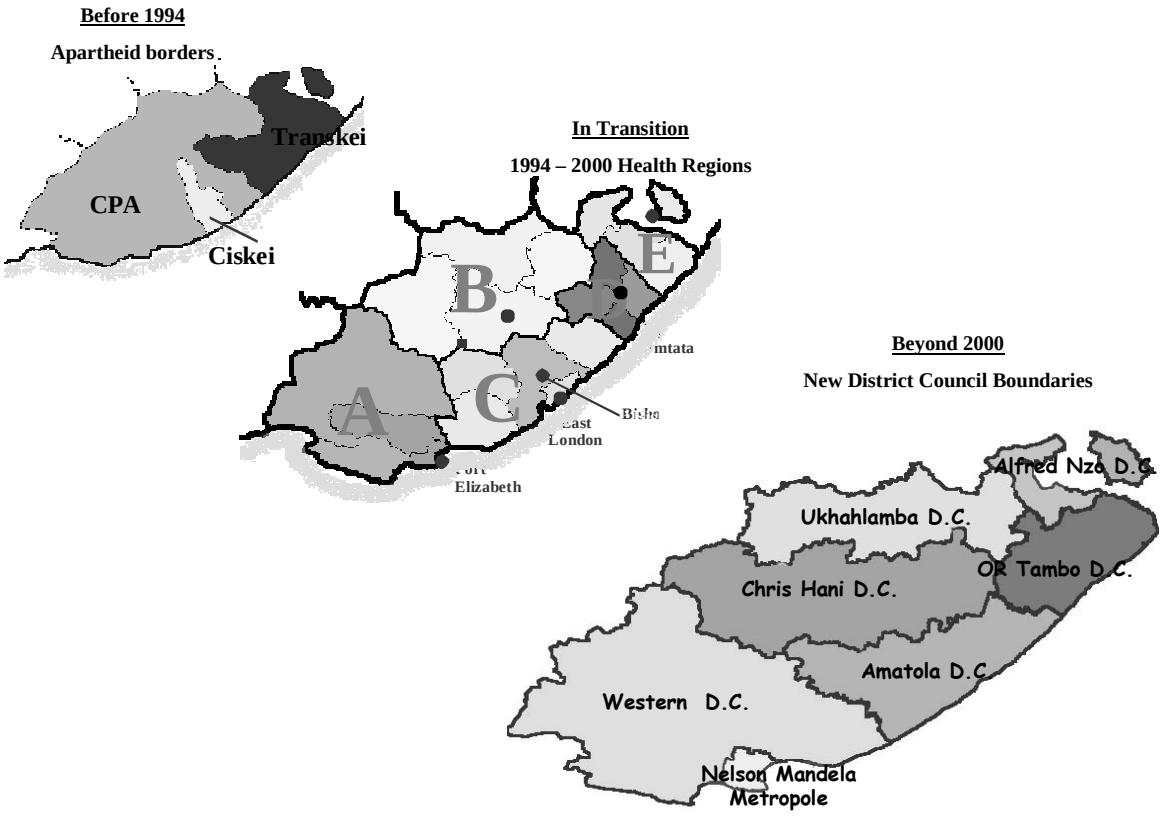
This analysis expands upon the previous work in two main ways. First, it presents in greater detail the rich data collected in the 1998 SADHS for the Eastern Cape Province. Specifically, this analysis aims to quantify the levels of various health indicators and health behaviors for different population sub-groups. By quantifying the differences that exist across the different sub-populations – populations of different regions, races, income and educational groups – health planners can both better target health interventions and better monitor changes in health status and health behaviors over time. The second purpose of this analysis is to link the two sources of data – the SADHS and 1998 Facility Audit – in a way that allows for examination of the relative importance of the various factors, particularly the quality and availability of health services, which may be associated with the differences in health behaviors and health outcomes. A particular focus is placed on examining the impacts of clinic quality that may have been directly affected by interventions from the EQUITY Project. Using multilevel analysis (MLA), the effects of health service availability and quality, collected from the Facility Audit, are measured relative to individual factors such as education, household income, rural residence, race, and women's work in determining whether health services are used.

1.2 Background

In 1998, the population of Eastern Cape Province was 6,541,000, the third most populous province in the country. It was also the second poorest province in the country. In 2000, the Eastern Cape had the highest unemployment rate in the country at nearly 50 percent of the eligible labor force (Mahlalela et al., 2001).

Prior to 1994, the Eastern Cape was divided into three regions: the Cape Provincial Authority and the two independent black homelands of Ciskei and Transkei (Figure 1.1). Following the end of apartheid in 1994, the region come under one authority but was divided into five health regions, 22 districts, and 78 magisterial districts. In 2000, the governmental structures were redefined into seven district councils (Mahlalela et al., 2001).

Figure 1.1 Political Demarcation of Eastern Cape Province, Pre-1994 to Present



Poverty, low levels of education and historical inequities combine to give the Eastern Cape some of the worst health indicators in the country (Table 1.1). It ranks as the worst province in the country in terms of under 5 mortality rates, prevalence of moderate and severe disabilities, and the percentage of households without a toilet. It is also well below the national average in terms of childhood vaccinations, and has a higher total fertility rate than the national average.

Table 1.1 Health status indicators by province

Province	Total Fertility Rate (1998)	Pct. of Households without Toilet (1999)	Under 5 Mortality Rate (1994-1998)	Prevalence of Stunting (1999) 1-6 Years of Age	Pct. of Children 12-23 Months Fully Vaccinated	Prevalence of Moderate and Severe Disability
Eastern Cape	3.5	25.1	80.5	21.5	52.6	8.9
Free State	2.2	5.3	72.0	26.7	67.8	5.8
Gauteng	2.3	0.8	45.3	21.7	72.4	5.2
KwaZulu-Natal	3.3	12.7	74.5	23.7	49.5	6.7
Mpumalanga	3.1	3.5	63.7	27.4	67.2	4.5
Northern Cape	2.7	10.7	55.5	24.5	80.8	4.5
Northern Province	3.9	18.8	52.3	30.5	74.9	6.3
North West	2.4	5.7	56.0	26.2	60.6	3.1
Western Cape	2.3	3.8	39.0	14.5	64.2	3.8
South Africa	2.9	9.7	61.0	23.3	63.4	5.9

Source: Bradshaw, Masiteng, and Nannan, 2000.

The 2000 National Clinic Survey found that the government health system in the Eastern Cape performs reasonably well in terms of overall service availability and quality relative to the other provinces of the country, although such findings may hide past inequities (van Rensburg et al., 2001). The daily availability of EPI, family planning, and antenatal care services at government fixed-site clinics in Eastern Cape exceeds the national average (Table 1.2). Family planning services are almost universally available in government clinics. Similarly, quality – as measured by the availability of condoms, uninterrupted electricity, and nurse supervision visits – also exceeds the national average for government clinics in the Eastern Cape. On the other hand, mal-distribution of staff continues to plague government clinics in the Eastern Cape. Government clinics in the Eastern Cape have the lowest proportion of clinics with doctors of any other province except Northern Province.

Table 1.2 Characteristics of health services in South Africa by province, 2000

	Service Availability			Staffing		Quality		
	Availability of EPI Services	Family Planning	Antenatal Care	Patients Per Nurse Per Month	Availability of Doctors	Availability of Condoms	Uninter-rupted Electricity	Nurse Super-visor Visits
Eastern Cape	89	97	78	520	45	86	65	76
Free State	72	96	44	418	88	84	68	64
Gauteng	50	82	32	400	75	100	75	79
KwaZulu-Natal	85	95	70	656	65	93	70	63
Mpumalanga	32	46	21	124	86	79	64	67
Northern Cape	67	88	50	612	92	92	83	25
Northern Province	98	100	96	421	29	85	58	72
North West	72	88	56	375	94	91	59	66
Western Cape	40	70	10	592	67	74	93	50
South Africa	74	87	59	474	63	87	68	67

Source: van Rensburg et al., 2001.

1.3 Organization of the 1998 South Africa Demographic and Health Survey

Survey Objectives and Implementing Organizations

The SADHS was intended to provide a background picture of the health status of the population of South Africa. Data were collected on the following areas:

- mortality
- fertility and birth histories
- use of reproductive health, family planning and childhood health services
- knowledge of major health problems
- adult anthropometric measurements and adult health conditions.

The SADHS was conducted by the National Department of Health (NDOH), the South African Medical Research Council (MRC), and the University of the Free State (UFS), with technical assistance by ORC Macro International. The SADHS collected information on 2,756 women aged 15-49, 1,359 children under the age of five, and 3,374 adult men and women in Eastern Cape Province. Training and supervision of the field teams was conducted by the NDOH, MRC, UFS, ORC Macro International, and provincial NDOH officers.

Sampling

A multistage sampling procedure was employed in selecting the sample. Enumeration areas were chosen by Statistics South Africa, with probability proportional to population size based on the number of households residing within enumeration areas according to the 1996 National Census. Data were collected in 209 enumeration areas. Within the enumeration areas, households were chosen using several criteria. Because one of the objectives of the survey was to collect information on different racial groups, households to be included in some areas were supplied by Statistics South Africa. In other enumeration areas, interviewers were only given maps with plots and instructed to sample systematically 10 households in urban areas and 20 households in rural areas. Every second household was selected to be administered the adult health questionnaires.

Questionnaires

Three questionnaires were used for the SADHS – a household questionnaire, a women's questionnaire, and an adult questionnaire. The questionnaires employed for the survey followed the standard Model B format for Demographic and Health Surveys for high fertility/low contraceptive use countries.

The household questionnaire listed all members of the household and collected information on each person's age, sex, level of education, place of usual residence, work history, injury history, and parental survivorship. The household questionnaire was used to determine eligibility for the women's and adult questionnaires. For calculating total fertility rates, and infant and child mortality rates, birth histories were taken from women to record all births and deaths of children. The women's questionnaire collected information on women's health and fertility history, as well as detailed information on children born in the 5 years preceding the survey. More specifically, information was collected on the following areas:

- background characteristics (age, education, housing characteristics, media exposure)
- fertility history and child mortality
- knowledge and use of family planning
- childhood illnesses and use of basic child health services
- delivery location and assistance
- knowledge of HIV/AIDS and attitudes regarding HIV/AIDS
- fertility preferences
- marriage and work history
- spouse's background and work history
- treatment by relatives and other adults.

The adult health questionnaire asked questions on the following areas:

- use of health services in the past 12 months
- family medical history
- chronic ailments
- dental health
- occupational health
- medications
- habits and lifestyle (smoking and drinking)
- anthropometric data (height, weight, blood pressure, pulse).

Fieldwork

Pre-testing of the questionnaires was undertaken by Markinor, a private research firm, in November and December 1996. Approximately 50 pretest interviews were completed. Fieldwork was conducted by interviewers recruited by UFS. Training of fieldworkers was conducted by personnel from the South African Medical Research Council, the Human Sciences Research Council, UFS, and Macro International. Seven interview teams were employed in the Eastern Cape. Each team consisted of two to five female interviewers, a supervisor, and a field editor. Each province also had a provincial supervisor. Fieldwork began in January 1998 and was completed in September 1998 (MRC, 1999).

Completed questionnaires were sent to provincial offices of King Finance, working with UFS and then forwarded to MRC. Data entry was performed by MRC using standard programs developed by ORC/Macro International. Data processing took place between March 1998 and October 1998.

Response Rates

Overall, 3,238 households were selected (Table 1.3). Of these, 3,186 (98.4 percent) were completed. The total number of eligible women was 2,860, among whom 2,756 interviews were completed. The overall response rate for the survey work in Eastern Cape was 95.6 percent.

Table 1.3 Sample of households and eligible women

	Number	Percent of Total
Households selected	3,238	100.0%
Households completed	3186	98.4%
Households not completed	2	0.1%
Household absent	8	0.2%
Household refused	14	0.4%
Household vacant/no dwelling	18	0.6%
Household dwelling destroyed	2	0.1%
Household dwelling not found	4	0.1%
Household other	4	0.1%
Households occupied	3,210	100.0%
Households interviewed	3,186	99.3%
Households not interviewed	24	0.7%
Eligible individuals	2,860	100.0%
Eligible individuals completed	2,756	96.4%
Eligible individuals not at home	37	1.3%
Eligible individuals refused	16	0.6%
Eligible individuals partially completed	1	0.0%
Eligible individuals incapacitated	41	1.4%
Eligible individuals other	9	0.3%
Overall response rate		95.6%

1.4 1998 Facility Audit

In 1998, the EQUITY Project and ECDOH conducted an audit of the approximately 624 government health clinics and 18 hospitals in the province. This was followed in subsequent years with a survey of a sub-sample of facilities. This survey was conducted nationally in 2000. The 1998 Audit collected information on:

- staffing and recent staff training
- supervision visits
- availability of drugs, supplies and basic infrastructure
- service availability
- emergency services, transportation and referrals
- adherence to standard treatment guidelines in a sample of patients with basic ailments.

Of the 624 facilities from which data were collected, Amatole District Council had the most (189) clinics in Eastern Cape; Alfred Nzo (28) and Ukhahlamba (25) had the fewest.

Using data from the 1998 Facility Audit and subsequent surveys, it is possible to note considerable improvements in the quality of the health care system in Eastern Cape Province (Table 1.4). From 1997 to 1999, the percentage of clinics offering the nine basic primary health care services at least 5 days per week increased from 42 percent to 64 percent; the availability of

key antibiotics (ciprofloxacin and benzathine penicillin) increased from 55 percent to 75 percent; the percentage of sexually transmitted disease (STD) cases treated increased from appropriately 54 percent to 70 percent; and the percentage of clinics with condoms tripled from 27 percent to 76 percent (MSH, 2000).

Figure 1.2 Number of Clinics by District Council

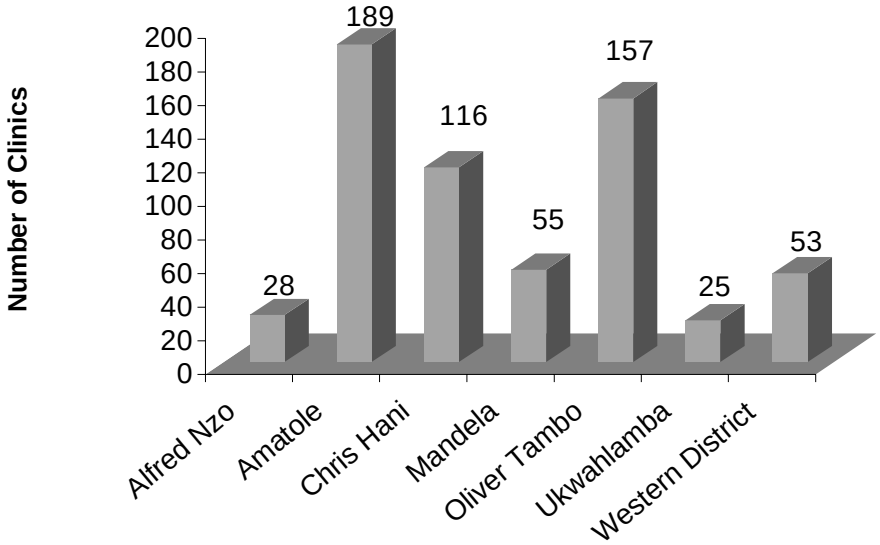


Table 1.4 Changes in quality of care indicators

	1997/1998	1999/2000
Percentage of Clinics with These Services:		
All 9 PHC services at least 5 days per week	42	64
MCH services 5 days per week	51	93
Clinics with a supervision visit in past month	64	77
Percentage of Clinics with These Supplies:		
Ciprofloxacine and benzathine penicillin	55	75
Cotramoxazole	64	80
Clinics with 7 indicator drugs	59	92
Clinics with catchment area maps	13	82
Clinics with condoms	27	76
Percentage of Clinics Meeting These Performances:		
STD cases treated appropriately	54	82
TB treatment completion	49	60
Correct clinical treatment of diarrhea	41	82

Source: MSH, 2000.

1.5 Linking the Household Survey and Facility Audit Data

In order to assess the effects of health services on individuals' health outcomes – and therefore the potential contributions of the EQUITY Project – it was necessary to link each household with the corresponding health services available to it. Geographical Information Systems (GIS) were used to locate the government clinics precisely in the 1998 Facility Audit and the enumeration areas in the SADHS (Figure 1.3). Using the geographical center of each of the 209 SADHS enumeration areas as the approximate location of households, the distance was calculated from the center of the enumeration area to the closest government clinics for which data were available from the 1998 Facility Audit and which had geographical coordinates from GIS data. Each enumeration area was linked in this manner to the five closest clinics. Several enumeration areas were served by the same facilities. Overall, therefore, 175 of the 624 clinics from the Facility Audit were linked to enumeration areas.[1] Each enumeration area was linked with some clinic from the Facility Audit. The characteristics of these government clinics in the Facility Audit data were then linked to the households in the enumeration area. This information was then used to depict the service supply environment in which individuals and households live.

Using this methodology, the average distance to the nearest government clinic was calculated. On average, individuals in Western District, a more rural district, were farther from clinics than individuals in other regions (Figure 1.4). In Western District, individuals on average were 12 kilometers from the nearest government clinic. In Alfred Nzo, individuals were just under 8 kilometers on average from a clinic. Individuals were closest to clinics, approximately 2 kilometers on average, in Mandela Metropole in Port Elizabeth.

[1] The remaining clinics were located in areas that were not as proximate to the populations for which information was collected in the Eastern Cape sample of the South Africa Demographic and Health Survey.

Figure 1.3 Linking the DHS Data with the Facility Audit Data

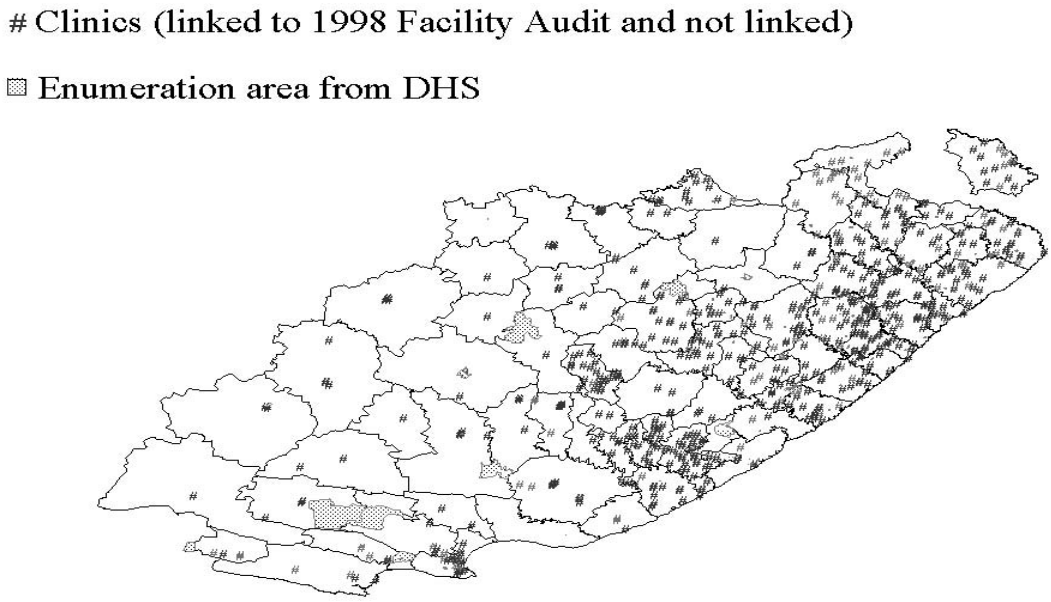
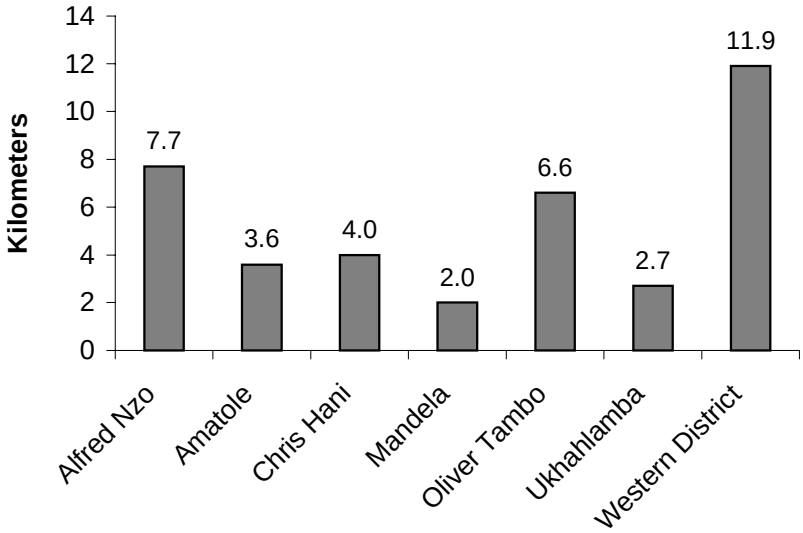


Figure 1.4 Mean Distances from Enumeration Areas to Closest Clinic for District Councils



1.6 Statistical Methods

Several techniques were used to analyze the available data, starting with simple univariate and bivariate analyses. Univariate statistics include such items as mortality and morbidity rates and proportions of users and non-users of services. Bivariate analyses often focus on these same statistics but attempt to link them with variables of interest, such as geographical region, urban/rural residence, education, or income. Tests of statistical significance – chi-squared tests, analysis of variance – can then be used to determine if differences in these variables across educational or income groups are actual or simple random fluctuations in the data. These analyses are limited, however, in their ability to analyze multiple factors affecting outcomes of interest to researchers.

The principal method of analysis in this work is multilevel and multivariate analysis with either Cox proportional hazard models, logistic regressions or probit regressions. In logistic or probit regressions, the statistical relationships are examined between a dichotomous 0/1 variable such as whether or not a child is immunized or whether or not a women is using contraception, and a series of explanatory variables – age, education, wealth, and region. Cox proportional hazard models examine the statistical relationships between a set of explanatory variables and the length of time until an event occurs, such as age at first sex, age at first birth or duration of breastfeeding.

All of these methods are known as multivariate methods because they simultaneously control for the effects of multiple factors affecting a health outcome or health behavior. When the data come from multiple levels – individual, household, community or clinic – analyses are often referred to as multilevel analyses. An example of multivariate analysis might involve a researcher trying to distinguish between the effects of education, wealth, and geographic location on whether a woman uses modern contraception. These data suggest, for example, that education appears to play a very significant role in determining the use of modern contraception (66 percent of women finishing Standard 11 or more use modern contraception as compared with only 22 percent of women with no education). However, looking only at the relationship between education and use of modern contraception may ignore some very important confounding factors, because education may be afflicted by cross-correlations with other explanatory variables. Income, education, and urban residence, for example, all tend to be highly correlated. More educated women tend to be more likely to use modern contraception and a variety of health services than less educated women. This is due in part to the direct effect of education; more educated women may place greater value on those services or have a greater understanding of the consequences of action or inaction than less educated women. However, more educated women also tend to be in higher income groups, to live in urban areas, or to live in areas with a wider variety of health services or higher quality health services. These factors also have effects on the likelihood that health services are used. Higher income women are more able to afford health services. Women in urban areas may have lower time costs involved in using health services that are nearer to them than rural women. As a result, a cross-tabulation of education

and use of a particular health service will reflect both the direct effect of how a woman values those services and the indirect effects of that woman being better able to afford the services or of being located closer to them. Multivariate analysis – using Cox proportional hazard, probit, or ordinary least squares estimation techniques – is therefore used to distinguish the separate effects of these characteristics on outcomes of interest.

In this analysis, a wide range of characteristics of households and individuals are examined for their impacts on health behaviors and health outcomes. In many countries, education, particularly of mothers, is generally associated with a lower likelihood of child mortality and morbidity. More educated women are often better able to recognize the signs and symptoms of illness, to be aware of the necessary steps to address them, to have greater decision-making authority within households, and often to have stronger motivations for accessing care for themselves and their children.

Other factors also play a role. Women who work outside of the home may have greater autonomy within the household, as well as access to their own financial resources that they can use to pay for health services. Households headed by a female are often associated with poorer economic circumstances and greater vulnerabilities, but may also have greater freedom. Greater wealth provides households with greater resources to access a variety of resources – medical and non-medical – for improving health status. The impacts of race are often difficult to assess, as they are generally highly correlated with other factors such as income, education, and access to high quality services.

Characteristics of clinics also influence whether individuals decide to seek medical care at a particular facility. Often the most important factor is physical accessibility. Other things being equal, individuals prefer closer facilities to ones farther away. Availability of basic services is also important. In this analysis, an index of nine basic primary health care services (Expanded Programme on Immunizations, family planning, antenatal care, treatment of STDs, curative care for children, nutrition/growth monitoring, adult curative care, treatment of tuberculosis, and treatment of chronic diseases such as diabetes, hypertension or epilepsy) is constructed to indicate the level of service provision at health clinics. Quality of care is often proxied by availability of basic drugs and supplies. Individuals are likely to be inhibited from using a clinic if they have found that they could not be adequately treated in the past because needed drugs or supplies were not available. In this analysis, an index of facility capacity is constructed from data on availability of communication equipment, basic supplies, and essential drugs. The types of staff also may play a role. Individuals may be more likely to use a clinic if they know they will be treated by a doctor as opposed to personnel with less extensive medical training. Finally, factors such as whether or not staff have recently had their skills updated through refresher courses and training may also impact on the quality of services and the likelihood that individuals will want to use those services. The results of the multivariate analysis of clinic quality on use of services are reported in Chapter 8.

One important point that must be borne in mind when these data are used for evaluation purposes is that many of the interventions, such as training of staff in management or family planning skills, are intended to redress past inequities in the quality of services across the province. Programs and efforts may be targeted, quite rationally, to areas with the worst outcomes or with greater inequities. As a result, a seeming paradox may result. Areas with greater efforts in terms of training or provision of supplies or services may be associated with worse health outcomes or health sector performance, while areas with lesser efforts may be associated with better health outcomes or health sector performance. At the very least, the impact of these efforts may be under-estimated if the fact that these efforts are targeted is not taken into account. In these cases, program efforts are said to be endogenous to the outcomes that they are intended to address.

Two mechanisms are generally possible to measure program impacts in the presence of selective targeting of efforts. First, data on all factors that explain targeting of efforts could be collected. This could include explicit information from planners indicating the criteria used for selecting program areas. Such information is rarely available in quantitative form. More likely to be available are data on lagged health outcomes or data from previous facility surveys. Alternatively, a second avenue is not only to examine levels of health outcomes but changes in levels over time. For this, repeated data collection is required. During subsequent data analysis, areas with more intensive efforts, while perhaps still having lower levels of health outcomes, may be associated with greater changes in those levels.

In summary, a principal aim of evaluation is to attribute responsibility for different levels of health outcomes or health behaviors to the multitude of factors that can influence outcomes and behaviors. For this reason, we use statistical techniques such as logit and probit regressions or Cox Proportional Hazards models to determine the impact of specific factors (e.g. education, income, facility characteristics) on those outcomes. Such techniques are not intended to obfuscate results behind technical jargon, but rather to test and to evaluate relationships in a more robust and scientifically rigorous manner.

CHAPTER 2. CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

This chapter presents information on the characteristics of households, household heads and individuals in the household questionnaire. It also presents background information on women eligible and interviewed in the women's questionnaire and adults interviewed in the adult questionnaire.

Household Composition: The majority of households (59 percent) in urban areas are headed by males. In rural areas, 57 percent of households are headed by females. For the province as a whole, the most common household structure is one consisting of three or more related adults (37 percent). The average number of household members is 3.9 in urban areas and 4.8 in rural areas. Also, in urban areas, the average age of males is 6 years less than it is for females. In rural areas, the average ages of males and females are almost identical.

Socioeconomic Status: Using information on ownership of common household assets and amenities, an index of household socioeconomic status was created. Using this index, households were grouped into socioeconomic quartiles from poorest to richest. The poorest district councils are Alfred Nzo, with 57 percent of its population in the lowest asset quartile; and Oliver Tambo, with 40 percent of its population in the lowest asset quartile. The wealthiest district councils are Mandela, with 61 percent of its population in the highest asset quartile; and Western District, with 43 percent of its population in the highest asset quartile.

Orphanhood: Twelve percent of children under the age of 15 are orphans. Most common are children who have lost only their father (9.5 percent); 1.5 percent have lost a mother only, and 1.1 percent have lost both parents. An additional 3.5 percent have missing information on one or both parents, and therefore, did not know whether these parents were alive.

Children's Living Arrangements: The most common living arrangement for children was that both parents are alive, but the child is not living with either parent (31 percent of children). This arrangement is more common in urban areas (38 percent) and less common in rural non-Transkei areas (20 percent). Other common living arrangements are that the child was living with the mother, but not the father (29 perecent), and living with both parents (22 percent).

2.1 Household Population

Age and Sex Composition

The weighted distribution of the household population in the DHS for Eastern Cape is shown in Table 2.1 by 5-year age groups, sex, and urban-rural residence. The majority of the sample population – just over 70 percent – lived in rural areas. The distribution in rural areas, where fertility levels were higher, was skewed towards younger age groups since fertility levels are higher in rural areas.

In both urban and rural areas, the number of women exceeded the number of men. In rural areas, the male-female ratio is approximately 0.84:1. In urban areas it is slightly higher – 0.87:1. Male children outnumber female children in rural areas but not in urban areas.

Table 2.1 Household population percentages by age, residence, and sex

Age	Rural			Urban			All		
Group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	14.3	10.9	12.5	9.3	9.0	9.1	12.5	10.2	11.3
5-9	19.1	15.8	17.3	12.2	11.0	11.6	16.6	14.0	15.2
10-14	20.2	17.5	18.8	13.7	12.2	12.9	17.9	15.6	16.6
15-19	11.7	8.5	10.0	9.1	9.0	9.0	10.7	8.7	9.6
20-24	7.2	6.2	6.7	8.7	7.5	8.0	7.8	6.7	7.2
25-29	3.9	4.0	4.0	8.7	6.6	7.6	5.6	5.0	5.3
30-34	2.6	4.0	3.3	6.2	7.2	6.8	3.9	5.2	4.6
35-39	3.2	4.0	3.6	7.8	6.9	7.3	4.9	5.1	5.0
40-44	2.6	3.6	3.1	4.9	5.5	5.2	3.4	4.3	3.9
45-49	2.3	2.6	2.4	4.6	4.2	4.4	3.1	3.2	3.2
50-54	2.0	4.5	3.4	3.6	5.4	4.5	2.6	4.8	3.8
55-59	2.3	4.3	3.4	3.6	4.1	3.9	2.8	4.3	3.6
60-64	2.2	4.5	3.5	2.2	3.3	2.8	2.2	4.1	3.2
65-69	2.8	4.0	3.5	2.6	3.1	2.9	2.7	3.7	3.3
70-74	1.6	2.3	2.0	1.3	1.6	1.5	1.5	2.1	1.8
75-79	1.5	1.7	1.6	0.9	1.5	1.2	1.3	1.6	1.5
80+	0.6	1.5	1.1	0.7	1.8	1.3	0.6	1.6	1.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total People	4,693	5,392	10,085	1,941	2,297	4,238	6,627	7,696	14,323

Household Composition

Table 2.2 shows that, in the province as a whole, households were as likely to be headed by females as by males. The proportion of female-headed households was higher in rural areas – almost 57 percent – than in urban areas, where it was approximately 41 percent. Wealthier district councils had a higher proportion of male-headed households – 63 percent in Mandela and

68 percent in Western District. Approximately 60 percent of the two district councils of Alfred Nzo and Oliver Tambo in the former Transkei were headed by women.

Table 2.2 Household composition by percentage

	Urban	Rural	Alfred Nzo	Amatole	Chris Hani	Mandela	Oliver Tambo	Ukhah-lamba	Western	Total
Household Head										
Male	59.1	43.4	40.7	50.6	47.1	62.9	39.0	45.9	67.6	49.8
Female	40.9	56.6	59.3	49.4	52.9	37.1	61.0	54.1	32.5	50.2
Mean Age	49.5	53.8	53.7	52.7	54.2	49.0	51.8	53.4	51.1	52.0
Male	47.1	53.6	51.9	51.5	53.0	46.5	52.3	52.0	48.7	50.5
Female	53.0	53.9	54.8	54.0	55.3	53.1	51.4	54.7	56.1	53.6
Household Structure										
No adults	0.0	0.2	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.1
1 adult	24.2	28.5	26.6	29.3	30.8	24.5	24.3	21.0	28.6	26.8
2 adults op. sex	26.1	22.2	19.8	25.2	27.0	25.4	18.3	19.3	32.9	23.8
2 adults same sex	7.3	9.9	8.6	9.6	10.2	5.9	10.6	9.3	5.1	8.8
3+ related adults	38.3	36.2	41.2	33.9	29.5	41.1	40.9	45.4	29.3	37.0
Unrelated adults	4.2	3.1	3.8	1.9	2.2	3.1	5.7	5.1	4.0	3.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Household Members										
1	16.2	11.7	8.6	16.5	13.8	15.8	8.4	11.9	22.2	13.5
2	17.4	10.8	11.0	17.0	14.1	15.3	8.6	9.3	19.6	13.5
3	15.9	13.6	8.8	18.5	16.4	16.4	11.4	11.3	13.0	14.6
4	16.8	13.6	11.8	15.7	15.6	17.6	12.5	13.9	15.7	14.9
5	11.7	13.6	15.1	10.9	15.4	11.4	12.5	15.6	11.5	12.8
6	8.6	12.3	17.5	8.6	8.7	8.8	14.0	15.4	6.4	10.8
7	5.3	8.3	12.3	4.9	6.2	6.0	9.0	6.8	6.3	7.0
8	2.5	5.9	7.1	2.7	4.9	3.0	6.6	6.1	2.0	4.5
9+	5.6	10.2	7.8	5.3	5.0	5.6	17.0	9.8	3.3	8.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Household Size	3.9	4.8	5.0	3.9	4.2	4.0	5.6	4.8	3.5	4.5

The average age of household heads was 52 years. Female household heads were 3 years older than male household heads on average – 53.6 years versus 50.5 – a likely reflection of widowhood. Rural household heads were also older on average, particularly for male-headed rural households.

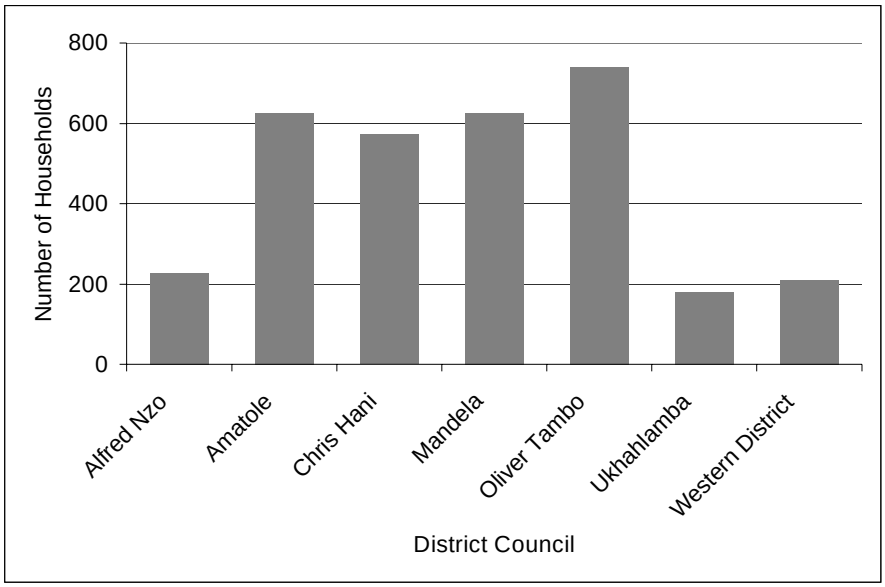
The most common household structure (38 percent) was one with three related adults. The next most common were households with just one adult. Households with two adults of the opposite sex constituted less than one-quarter of the households. Households with no adults were rare, less than 0.1 percent of households.

The average household size was 4.5 members. Rural households generally had one more person on average than urban households – 4.8 people versus 3.9 people. Household size was largest in Oliver Tambo and smallest in Western District Council.

An important part of the analysis was the creation of regional aggregate variables, specifically for the former Transkei and the district councils. Using the names of the enumeration areas and the health regions in which enumeration areas were located, all enumeration areas were categorized by the new administrative District Council structure (Alfred Nzo, Amatole, Chris Hani, Mandela, Oliver Tambo, Ukhahlamba, and Western). From these, it was possible to categorize enumeration areas as being in one of three different areas: the former black homeland of Transkei, non-(former) Transkei urban areas, and non-(former) Transkei rural areas. No distinction was made between urban and rural areas in the former Transkei, as nearly all sampled enumeration areas in the former Transkei were considered to be rural. Analyses with separate urban areas of Transkei would likely have lacked statistical significance. Attempts were made to create separate variable for the former black homeland of Ciskei, but this proved too difficult and would also have covered only a very small sample of surveyed individuals.

The largest sample of households was in Oliver Tambo district council (856), followed by Amatole (655), Chris Hani (558), and Mandela (540) districts (Figure 2.1). The smallest number of households was in Ukhahlamba (144), followed by Western (203), and Alfred Nzo (210).

Figure 2.1 Number of Surveyed Households by District Council



For the analysis, a household wealth index was created from information on household assets. Stratifying households by wealth is useful for determining which socioeconomic groups have access to care and who uses or does not use valuable health services. Wealth indices can contain additional information that is often not contained in more general geographical or ethnic group variables. Questions were asked of household heads about ownership of common semi-durable assets such as refrigerators, cars, bicycles, radios, televisions, washing machines, personal computers, or livestock (donkeys, horses, sheep, or cattle). Questions were also asked regarding the condition of the dwelling in which the household resided (types of walls, floor, roof), source of drinking water (piped water, public tape, borehole/well, natural source, other), and sanitation method (flush toilet, bucket latrine, pit latrine, none). Using principal components analysis, a composite index of assets was constructed.

For descriptive purposes, households were disaggregated into quartiles based on values of the index (Table 2.3).

Table 2.3 Distribution of households by district councils and by wealth quartiles

District	Wealth Quartile				Total
	Poorest	Second Poorest	Second Wealthiest	Wealthiest	
Alfred Nzo	130	60	35	2	227
	57.3%	26.5%	15.3%	0.9%	100.0%
Amatole	129	169	178	152	627
	20.5%	27.0%	28.3%	24.2%	100.0%
Chris Hani	151	129	183	111	573
	26.3%	22.4%	31.9%	19.3%	100.0%
Mandela	52	73	121	381	627
	8.4%	11.6%	19.3%	60.7%	100.0%
Oliver Tambo	299	283	128	31	741
	40.3%	38.3%	17.3%	4.2%	100.0%
Ukhahlamba	41	38	86	16	181
	22.6%	20.9%	47.5%	9.0%	100.0%
Western	16.9	25.8	77.5	90.6	210.8
	8.0%	12.2%	36.8%	43.0%	100.0%
Total	818	777	808	783	3186
	25.7%	24.4%	25.4%	24.6%	100.0%

While for the province as a whole, one-quarter of the households were in each of the wealth quartiles, the distribution differed considerably across district councils. For example, close to 60

percent of households in Alfred Nzo were in the lowest wealth quartile. Only two of 227 households were in the wealthiest quartile. The other district council with a large proportion of its population from the former Transkei was also skewed towards the poorer quartiles. Nearly 80 percent of the households in Oliver Tambo were in the bottom two wealth quartiles. In contrast, over 60 percent of households in Mandela district council were in the wealthiest quartile, 80 percent were in the wealthiest two quartiles, and only 8 percent were in the lowest asset quartile. This measure of wealth will be used throughout the analysis to examine the differentials between wealthy and poor in terms of health outcomes or use of health services.

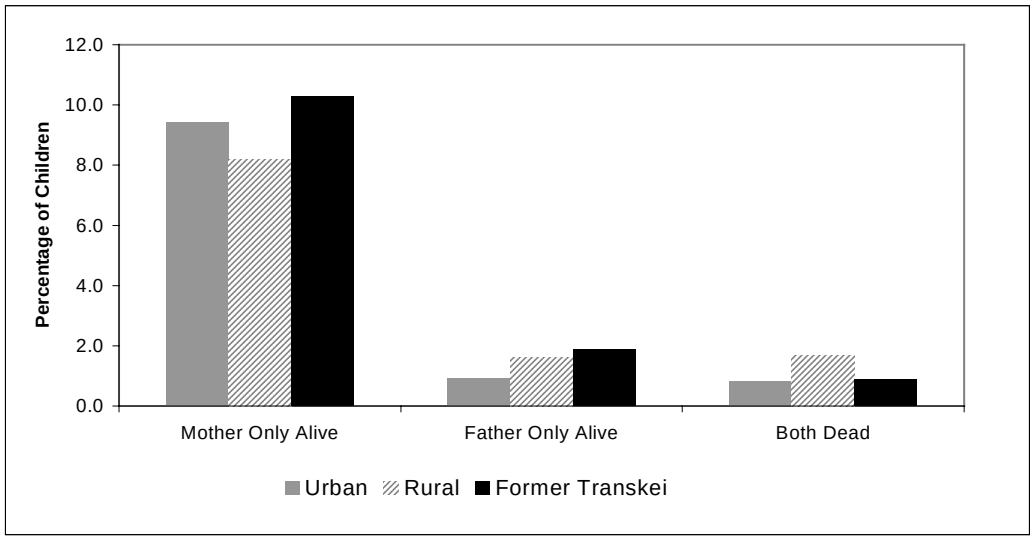
Orphanhood

Given the high levels of mortality in the Eastern Cape due to a variety of epidemiological and high-risk factors (accidents and violence), a significant proportion of children in the households surveyed are orphans – either missing one parent or both. The numbers presented here are certainly under-estimates of orphanhood for the province as a whole, since these children are identified through their connection with a household. Some orphans are not likely to have any association with a household, and therefore, would never appear in this type of survey. Even so, the high proportion of children who are orphans is an indication of the substantial adult mortality in the country.

Overall, at the time of the survey, 12 percent of children under the age of 15 were orphans. Most common were children who had lost only their father (9.5 percent); 1.5 percent had lost a mother only, and 1.1 percent had lost both parents. An additional 3.5 percent were missing information on one or both parents, and therefore did not know whether these parents were alive. Children in the former Transkei were more likely to be orphans – 13 percent (Figure 2.2). Just over 10 percent had lost a father only, just under 2 percent had only lost a mother, and approximately 1 percent had lost both. These proportions tended to be slightly lower in urban areas – 9.4 percent had lost only their father, 0.9 percent had lost only their mother, and 0.8 percent had lost both.

Even among children whose parents were alive, a significant number were not living with their parents. Table 2.4 shows the distribution of children under age 15 by their living arrangements and the survival status of the parents by selected background characteristics. The most common living arrangement was for a child to have both parents alive but not to be living with them, a situation faced by nearly one third of children. Only 22 percent of children in the province were living with both parents. Many children, 29 percent, were living with their mother but their father was alive and living elsewhere. Only 2.5 percent of children were living with their father but their mother was living elsewhere. Overall, 37 percent of children were not living with either parent – either both parents were alive and living elsewhere (31.3 percent), only the mother was alive but living elsewhere (3.9 percent), only the father was alive, but living elsewhere (1.1 percent), or both parents were dead (1.1 percent).

Figure 2.2 Orphanhood Status for Children Under Age 15, by Region



Living status and parental survivorship varied by background characteristics. Over 40 percent of children in the wealthiest asset quartile were living with both parents, as compared with only 15 percent of children in the poorest asset quartile. Over one-third of children in rural non-Transkei areas were living with both parents as compared to only 18 percent of children in the former Transkei. Close to 40 percent of children in Mandela and Western district councils were living with both parents, but only 16 percent of children in Alfred Nzo.

Injuries and Accidents

It has been reported that South Africa has some of the highest levels of violent crime in both the developing and developed world. In 1997, there were 59 murders and 541 serious assaults per 100,000 population (Schonteich, 2000). In the household survey, household members were asked if they had experienced an accident or injury in the past 30 days that required medical attention. This method is, of course, not a perfect measure of all accidents or injuries, as accidents or injuries resulting in the death of a household member would not be counted, since the member would no longer reside in the house. Accidents and injuries that a member felt did not require attention would also be omitted. Presumably these would be minor.

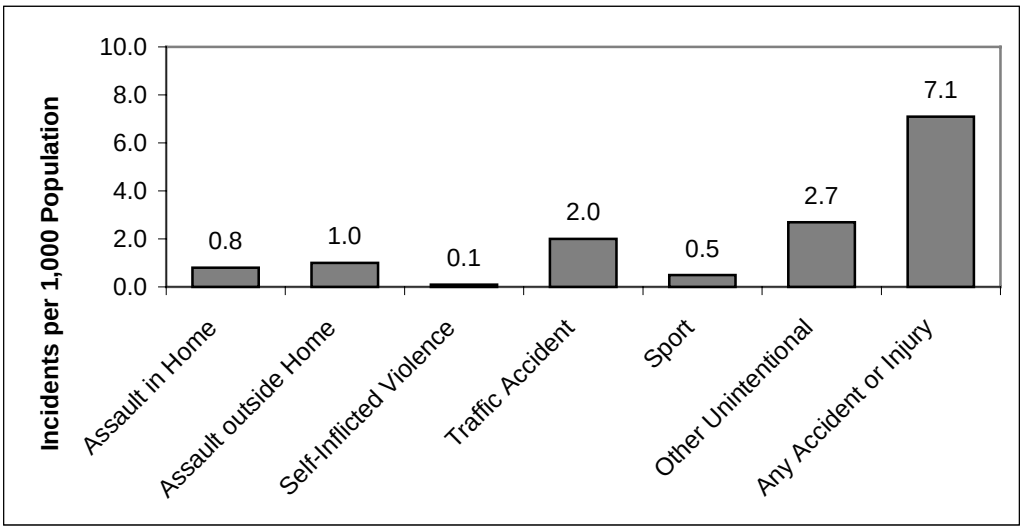
In this sample, just under 1 percent reported an injury in the past 30 days requiring treatment by a doctor or nurse (Figure 2.3). The most common injury was an unintentional accident, followed by traffic accidents. Approximately two traffic accidents and 2.7 other accidents requiring medical assistance were experienced per 1,000 population. Assault – either within the home or outside the home – was experienced by approximately two people per 1,000. While such numbers are too low to make statistically relevant comparisons, such rates would translate into

annual rates of assault of approximately 240 per 10,000 population per year, similar to those reported elsewhere (Schonteich, 2000).

Table 2.4 Parental survivorship and children's living arrangements (by percentage)

Characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing infor-mation on father/ mother	Total %	N
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Only father alive	Only mother alive	Both dead			
Age												
<2	24.0	55.2	3.0	0.9	0.2	14.5	0.2	0.3	0.2	1.6	100.0	583
2-4	23.1	34.9	3.3	1.7	0.1	30.3	0.8	2.9	0.6	2.4	100.0	1,077
5-9	20.9	27.0	5.2	2.6	0.4	34.6	1.3	3.7	0.7	3.5	100.0	2,241
10-14	22.0	21.0	7.6	3.1	0.5	32.8	1.4	5.4	1.8	4.5	100.0	2,443
Sex												
Male	21.6	28.7	5.2	2.9	0.4	31.7	1.0	3.9	0.9	3.7	100.0	3,195
Female	22.3	28.6	6.0	2.1	0.3	30.9	1.3	3.9	1.2	3.4	100.0	3,145
Residence												
Urban	17.6	35.5	5.1	3.7	0.1	38.2	0.9	4.4	0.8	3.9	100.0	2,040
Rural	34.6	25.9	5.6	3.2	0.7	20.6	0.9	2.6	1.7	4.3	100.0	1,570
Former Transkei	18.0	32.6	6.0	1.2	0.4	32.3	1.5	4.3	0.9	2.9	100.0	2,735
Region												
Alfred Nzo	15.9	33.8	3.7	0.8	0.3	37.0	0.4	4.5	0.3	3.3	100.0	580
Amatole	22.4	25.5	5.5	3.4	0.0	31.8	0.6	4.4	1.2	5.3	100.0	963
Chris Hani	16.8	23.4	4.4	3.1	0.4	41.9	1.0	4.3	0.8	3.9	100.0	1,136
Mandela	37.8	26.1	6.2	3.2	0.7	18.0	0.5	2.6	1.8	3.1	100.0	878
O.Tambo	18.6	32.2	6.6	1.4	0.4	31.1	1.8	4.3	1.0	2.7	100.0	2,155
Ukhahlamba	17.1	29.5	6.6	6.8	0.0	31.3	1.2	3.2	0.7	3.6	100.0	381
Western	38.8	29.5	3.7	1.5	0.5	17.3	2.0	0.9	1.9	4.1	100.0	252
Asset Quartile												
Poorest	15.1	30.7	6.4	1.8	0.4	35.1	0.7	5.6	1.1	3.2	100.0	1,906
2nd poorest	20.3	29.4	6.6	2.2	0.2	32.5	1.6	3.6	0.8	2.9	100.0	1,874
2nd wealthiest	19.1	28.3	3.9	2.6	0.2	34.9	1.6	3.6	0.8	5.0	100.0	1,487
Wealthiest	41.0	24.2	4.8	4.2	0.9	17.6	0.5	1.9	1.7	3.2	100.0	1,078
Total	22.0	28.6	5.6	2.5	0.2	31.3	1.1	3.9	1.1	3.5	100.0	6,345

Figure 2.3 Accidents or Injuries Requiring Medical Assistance in Past 30 Days



Housing Characteristics

Vastly different housing and household welfare indicators existed between urban and rural areas and the different district councils (Table A2.1). The majority of urban households had piped water in their residence or in site. This percentage was highest in Mandela Metropole (78.9 percent). Only 9 percent of rural households had piped water in their dwelling or in site. In fact, just under one-third of households in rural areas had a safe supply of drinking water. Most rural households, in contrast, got their water from natural sources – dams, rivers, streams or springs. This proportion was highest in Oliver Tambo (73.7 percent), far eclipsing the next worst area, Alfred Nzo (50.3 percent).

Approximately two-thirds of households in urban areas had flush toilets, either their own (58.5 percent) or shared (7.5 percent). In rural areas, just over half of the households (52.4) had access to a pit latrine. Nearly 44 percent of rural households had no toilet facility. No private flush toilets were reported in Alfred Nzo or in Ukhahlamba districts.

The most common floor material in urban areas was vinyl. In rural areas, the most common material was earth, sand or dung. The dwellings of most households in urban areas had plaster walls. In rural areas, however, nearly two-thirds of households had mud walls and nearly 80 percent had mud or mud and cement walls. Rural households were more likely to have three or more rooms for sleeping (33.7 percent) than were urban households (23.9 percent).

Stark differences existed between urban and rural areas in asset ownership. Overall, 74 percent of households had radios, but only 38 percent of households had electricity. In urban areas, 71.8 percent of households had electricity, as compared with 14.7 percent of rural households. Over

half of urban households had refrigerators, but only 9 percent of rural households had refrigerators. Nearly two-thirds of urban households had televisions, but only 21 percent of rural households did. Just over one-quarter of urban households had cars but only 5 percent of rural households had them.

2.2 Background Characteristics of Women and Men Respondents

Women's Sample

Characteristics of the women in the weighted sample are summarized in Table 2.5 by region and for the province as a whole. The women's sample was predominantly rural – 25 percent in rural non-Transkei areas and 35 percent in the former Transkei. Approximately 45 percent of the sample were in urban non-Transkei areas. Nearly a quarter of the sample were adolescents and about half of the sample was under age 30. Black Africans made up 85 percent of the weighted sample. Only a few women were white or Asian. Nearly half (45.9 percent) of the women had some secondary education (Standard 6 to Standard 9). Oliver Tambo District Council had the largest number of women in the sample at 27.5 percent. Western District and Ukhahlamba District Councils, which are largely rural, had much smaller proportions.

The distribution of women in rural areas – both non-Transkei and former Transkei – was skewed towards younger ages. In non-Transkei rural areas, almost 29 percent of surveyed women were adolescents, as were over one quarter of surveyed women in the former Transkei. In non-Transkei urban areas, only 18 percent of surveyed women were adolescents.

The distribution of women by ethnic group also differed by region. In urban non-Transkei areas, 18 percent of women were colored, as compared to 5.8 percent of women in rural non-Transkei areas and only 0.1 percent of women in the former Transkei. Nearly all women in the former Transkei were black Africans (99.6 percent), but just over two-thirds of women in urban areas were.

As in the household questionnaire, sharp disparities in educational attainment and income were evident across women living in the different regions – urban non-Transkei, rural non-Transkei, and the former Transkei. Few significant differences were apparent in educational attainment between women in the former Transkei and women in rural areas elsewhere. Roughly equal proportions of women in both areas had some secondary education – 46.8 percent in rural non-Transkei and 43.8 percent in the former Transkei. Roughly equal proportions had no education – 6.3 percent in rural non-Transkei and 7.1 percent in the former Transkei. However, big differences were apparent with urban areas. Just over 27 percent of women in urban areas had Standard 10 or Standard 11+ education. In rural non-Transkei and the former Transkei, these proportions were 11 percent and 12.5 percent respectively.

Table 2.5 Distribution of women by background characteristics

	Urban, Non-Transkei		Rural, Non-Transkei		Former Transkei		Eastern Cape Total	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Maternal Age								
15-19	18.2	201	28.6	199	26.1	250	23.6	649
20-24	16.0	176	15.7	109	19.8	189	17.2	475
25-29	13.2	146	13.6	94	13.3	127	13.3	367
30-34	14.2	157	11.1	77	12.7	121	12.9	355
35-39	15.2	168	13.5	94	11.4	109	13.4	370
40-44	13.4	148	10.1	70	10.0	95	11.4	314
45-49	9.8	108	7.6	52	6.8	65	8.2	225
District Council								
Alfred Nzo	NA	NA	NA	NA	20.8	199	7.2	199
Amatola	19.3	213	35.5	247	NA	NA	16.7	460
Chris Hani	13.1	145	34.8	242	NA	NA	14.0	387
Mandela Metropole	51.3	567	7.8	54	NA	NA	22.5	621
Oliver Tambo	NA	NA	NA	NA	79.2	757	27.5	747
Ukhahlamba	5.2	57	16.0	111	NA	NA	6.1	168
Western District	11.1	123	5.9	41	NA	NA	6.0	164
Education Level								
No Education	2.5	28	6.3	44	7.1	68	5.1	140
Sub A- Std. 3	12.2	135	23.4	163	24.4	233	19.3	530
Std. 4 - Std. 5	10.9	120	12.5	87	12.2	117	11.8	324
Std. 6 - Std. 9	47.0	520	46.8	325	43.8	418	45.8	1,263
Std. 10	16.3	180	7.0	49	8.5	81	11.3	310
Std. 11+	11.0	122	4.0	28	4.0	39	6.8	188
Ethnicity								
Black/African	68.4	756	93.1	647	99.6	952	85.4	2,355
Colored	18.3	202	5.8	40	0.1	1	8.8	243
White	11.5	127	0.6	4	0.0	0	4.8	131
Asian/Indian	1.2	13	0.0	0	0.0	0	0.5	13
Missing	0.7	7	0.5	3	0.3		30.5	13
Asset Quartile								
Poorest	3.2	35	25.2	175	39.7	379	21.4	590
2nd poorest	7.1	78	36.2	252	37.3	356	24.9	686
2nd wealthiest	26.0	287	34.2	238	19.0	182	25.7	707
Wealthiest	63.8	705	4.4	31	4.0	38	28.1	773
Total	100.0	1,105	100.0	695	100.0	956	100.0	2,756

Women in rural areas differed in terms of wealth, based on whether they were in the former Transkei. Close to 40 percent of women in the former Transkei were in the lowest asset quartile, as compared with only one-quarter of women in rural non-Transkei areas. Only 4 percent women in the former Transkei were in the highest asset quartile, as compared with 64 percent of women in urban areas.

Adult Sample

The weighted adult sample included 1,333 men and 2,041 women older than age 15 (Table 2.6). The average age for males was 38.9 years; for females 41.7 years. Almost half of the male sample lived in urban non-Transkei areas. In contrast, only 43 percent of the adult females lived in urban non-Transkei areas. The average adult male had been educated to Standard 8. The average female has been educated one fewer year. Roughly equal proportions of males and females are from the different racial categories. Women were nearly equally distributed across asset quartiles, but men were more commonly in upper asset quartiles.

2.3 Women's Work and Autonomy

The SADHS collected information on women's employment, both within the home and outside the home in various types of enterprises. Women's work can impact on health status and the health status of their children in a variety of ways. As with men, more arduous work can have both long- and short-run tolls on women's health status. On the other hand, working women may have a degree of autonomy from their partners that other women do not have. If work involves earning money, then women may have increased power to allocate resources for their own health and for the health of their children.

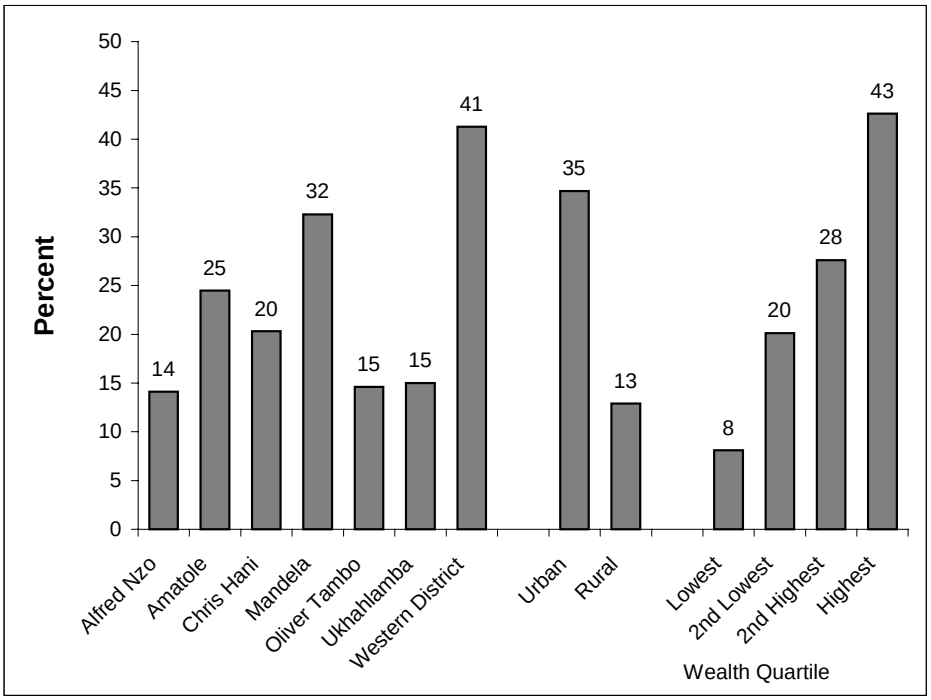
Approximately 23 percent of women in the sample reported that they were working in some capacity, and nearly all of those working reported some amount of monetary earnings. Working women were most common in Western District, where 41 percent of women reported employment outside of the home (Figure 2.4). In contrast, only 14 percent to 15 percent of women in the districts of Alfred Nzo, Oliver Tambo, and Ukhahlamba reported outside employment. The most common occupation was unskilled manual labor. The majority of working women reported that they had control over how this money was spent. Only 6 percent of working women reported that their partner or someone else determined how the money they earned was spent.

Working women may have greater decision-making power within the home. For example, 48 percent of working women report that the type of contraceptive method used is jointly decided with the partner, as compared with only 35 percent of non-working women. A higher percentage of non-working women (20 percent) reported that partners decided on method, compared with 15 percent for working women.

Table 2.6 Weighted adult sample

	Men		Women	
	Weighted Individual	Weighted Percent	Weighted Individual	Weighted Percent
Age				
15-24	407	31.0	521	25.2
25-34	223	17.0	367	17.8
35-44	208	15.9	303	14.7
45-54	157	11.9	272	13.2
55-64	141	10.7	287	13.9
65+	176	13.4	313	15.2
Mean Age	38.9		42	
Residence				
Urban, Non-Transkei	653	49.1	804	39.7
Rural, Non-Transkei	376	28.3	573	28.3
Former Transkei	301	22.6	650	32.1
District Council				
Alfred Nzo	66	5.1	152	7.4
Amatola	274	20.9	363	17.6
Chris Hani	205	15.6	346	16.8
Mandela Metropole	352	26.8	448	21.7
Oliver Tambo	233	17.7	519	25.2
Ukhahlamba	90	6.8	119	5.8
Western District	93	7.1	117	5.7
Education Level				
No Education	167	12.5	332	16.4
Sub A-Std. 3	183	13.8	246	12.2
Std. 4-Std. 5	247	18.6	381	18.8
Std. 6-Std. 9	493	37.1	726	35.9
Std. 10	110	8.3	174	8.6
Std. 11+	129	9.7	165	8.1
Ethnicity				
Black/African	1088	83.0	1763	85.5
Colored	108.	8.3	176	8.5
White	104	7.9	115	5.6
Asian/Indian	11	0.8	9	0.4
Missing				
Ethnicity				
Black Urban	499	52.1	638	43.4
Black Rural	614	47.9	1169	56.6
Asset Quartile				
Poorest	269	20.2	520	25.5
2nd Poorest	260	19.5	475	23.3
2nd Wealthiest	349	26.2	469	23.0
Wealthiest	455	34.2	577	28.3
Total	1,333	100.0	2,041	100.0

Figure 2.4 Percent of Women Working Outside of the Home



CHAPTER 3. FERTILITY

The 1998 SADHS collected information on the complete birth histories of women aged 15 to 49 years of age. This allows us to calculate total fertility rates, mean age at first sex and mean age at first birth, and to examine teenage pregnancies.

Fertility: The total fertility rate for the province was 3.5 live births per woman. This rate varied from a high of 5.0 births per woman in Oliver Tambo to a low of 2.1 births in Western District. Women in rural areas averaged two additional births relative to women in urban areas – 4.3 births versus 2.3 births. Women in the lowest asset quartile also averaged two more births than women in higher asset quartiles. The mean interval between births is 58 months, highest in Western District (86 months) and lowest in Alfred Nzo and Oliver Tambo (both 48 months).

Age at First Sex: Using survival analysis, the average age at first sex as reported by the women in the survey was calculated to be 16.7 years for women currently under the age of 20, 17.5 years for women 20 to 24 years old, and 17.7 years for women currently 25 to 29 years old. These age-specific means for sexual debut indicate that the age at first sex has been declining over the past decade.

Age at First Birth: The median age of first birth was 20 years. By the age of 18, approximately 20 percent of teenage women are pregnant or have given birth.

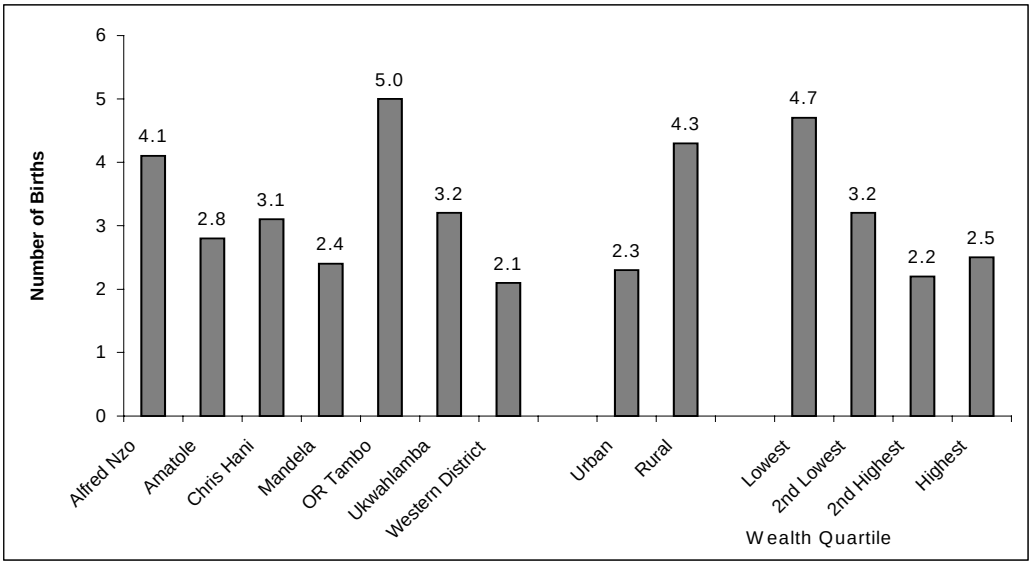
3.1 Fertility Levels

Each woman in the survey was asked about her complete birth history, including the number of living children, pregnancies, child deaths, and pregnancies lost before full term. From the birth histories, total fertility rates were calculated for the 5-year period prior to the survey. Total fertility represents the number of children a woman would have by the end of her reproductive years, if she were to bear children at the currently observed age-specific rates.

For the province as a whole, the total fertility rate was 3.5 births per woman. Total fertility rates were more than twice as high in Alfred Nzo and Oliver Tambo compared with rates in the lowest fertility areas (Figure 3.1). The total fertility rate in Oliver Tambo District was 5.0 births per woman, as compared with only 2.1 births per woman in Western District. The rate in rural areas was twice as high as that in urban areas. Rates were many times higher in lower asset groups than in higher income groups.

For the province as a whole, the mean number of children ever born was about 1.8 children per woman (Table A3.1). Older women (who had the longest exposure) had the highest mean – 3.6 children per woman. The number of children ever born was inversely related to education. Women with no education had three times as many children as women with a Standard 10 education (3.4 children versus 1.1 child). Rural women had approximately .5 children more than urban women. Fertility was highest in Alfred Nzo and Oliver Tambo District Councils.

Figure 3.1 Total Fertility Rates by Selected Characteristics

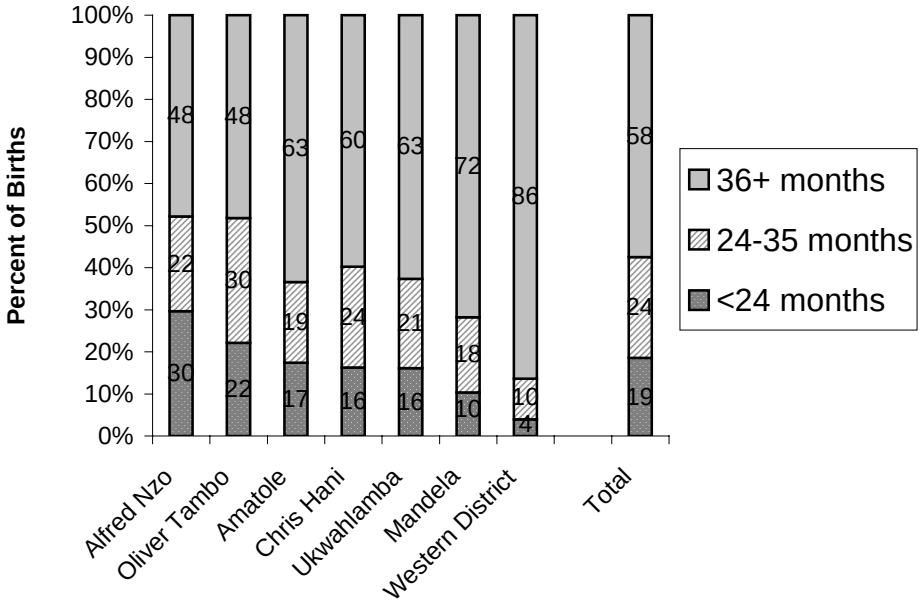


3.2 Birth Intervals

Short birth intervals can adversely affect the health of both mothers and their offspring and increase the likelihood of an infant death. Birth intervals of less than 24 months are considered to be potentially unsafe. For obvious reasons, birth intervals can only be calculated for women with two or more births. The median birth interval for non-first births in the Eastern Cape was 40 months or 3 years and 4 months (Table A3.2). However, nearly one in five non-first births (18.5 percent) occurred after less than 24 months. As higher parity women tended to be less likely to take measures to regulate their fertility, they were also more likely to experience short birth intervals (Figure 3.2). Just over 30 percent of births to parity 7 or more women occurred after less than 24 months as compared with only 16 percent of parity 2-3 women. Women in higher economic groups, who also were more likely to use contraception, also had longer birth intervals. The proportion of short birth intervals was twice as high in women in the lower asset quartile than for women in the highest asset quartile. The two district councils of the former Transkei – where fertility rates were the highest – had the highest proportion of births that were less than 24 months apart. Nearly a third of non-first births in Alfred Nzo and 22 percent of non-first births in

Oliver Tambo were less than 24 months apart. In contrast, only 4 percent of non-first births in Western District – where fertility was the lowest – were within 24 months.

Figure 3.2 Birth Intervals by District Council



3.3 Age at First Sex

In the face of the mounting AIDS crisis, one of the stopgap measures is to delay the onset of sex in young women. Using survival analysis, it is possible to calculate trends in age at first sex for cohorts of women.

In the province as a whole, the age at first sex actually declined rather than increased over the 10 years preceding the survey (Figure 3.3). Women under the age of 20 at the time of the survey had begun having sex a full year earlier than women who had been their age 10 years ago. The median age at first sex for women age 25 to 29 years at the time of the survey was 17.7 years. The median age at first sex for women under the age of 20 was 16.8 years. The declines varied by region of residence. The largest decline was in urban non-Transkei areas where the age at first sex declined by a year and a quarter – from 18.3 to 17.0 years – still higher than the average elsewhere in the province. The decline in the former Transkei was by a full year, from 17.8 to 16.8 years.

Survival curves for the age at first sex (Figure 3.4) indicate that over 85 percent of women under the age of 25 had sex by the age of 20. Twenty to 30 percent of women had sex by the age of 16.

Figure 3.3 Age at First Sex by Age Group and Region of Residence

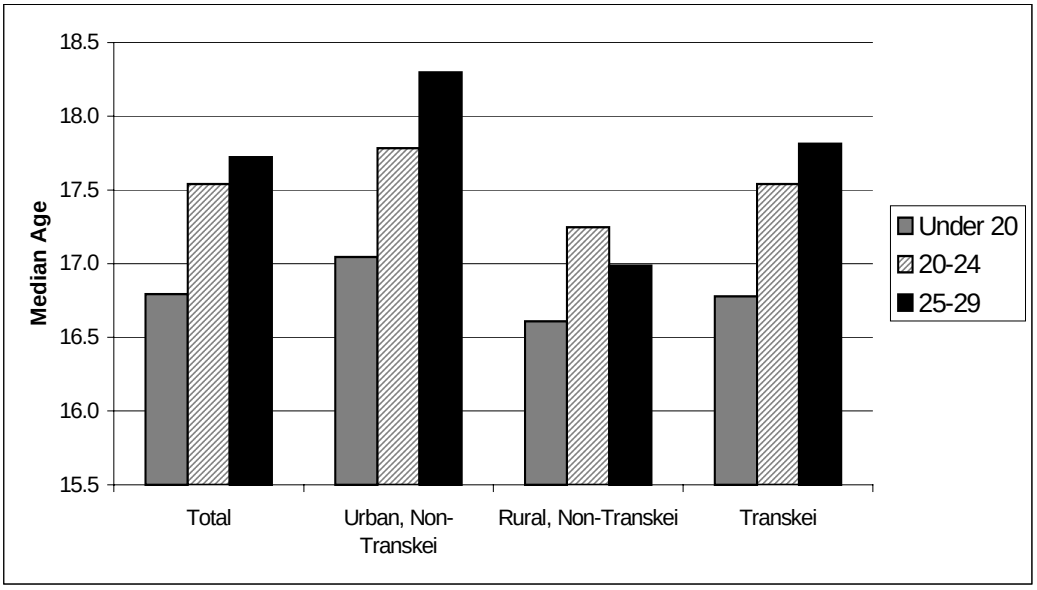
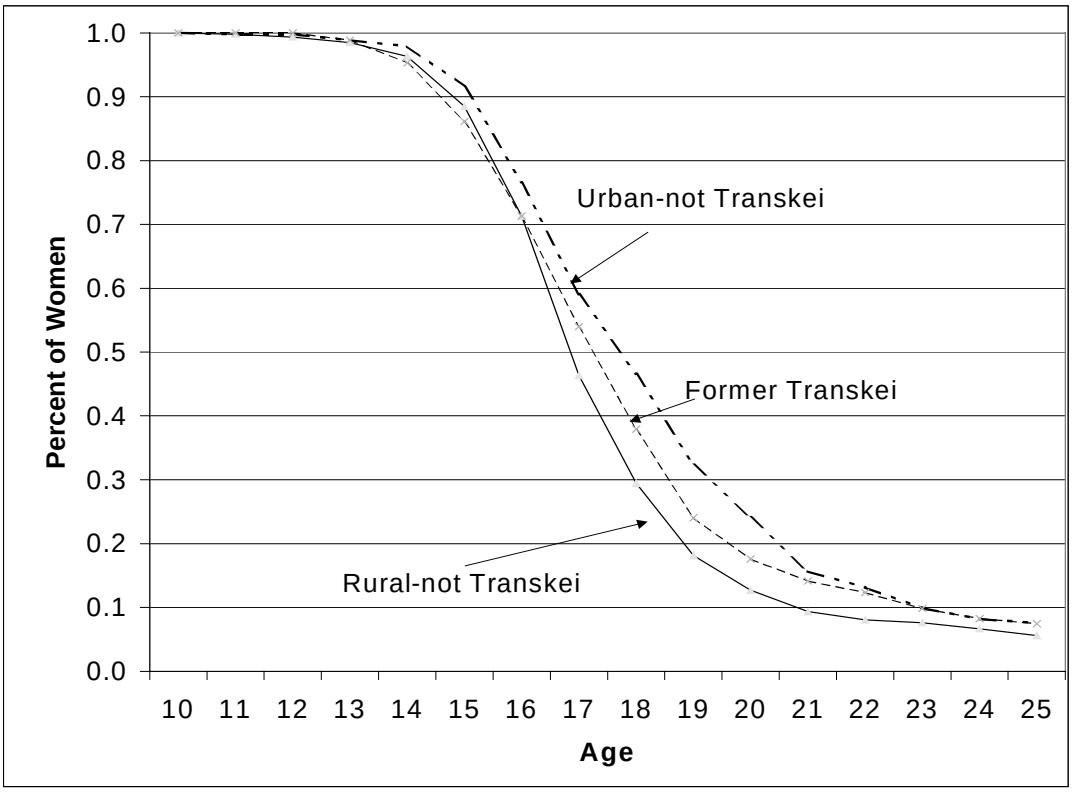


Figure 3.4 Survival Curve for Age at First Sex by Residence, Women under Age 25



3.4 Age at First Birth

The age at which a woman has her first birth has implications for both the health of the woman and the health of her child. Births to women at younger ages are more likely to face complications and more likely to result in adverse birth outcomes. In addition, delaying the initiation of childbearing can reduce the total number of births that a woman has in her lifetime.

In the Eastern Cape, the median age at first birth was 20 years (Table 3.1). Overall, approximately one-third of women had not had a single birth at the time of the survey. For teenagers, women aged 15 to 19 years, over 85 percent had not had a single birth; 14.8 percent of teenagers had. Just under 1 percent of teenagers had a live birth before the age of 15. This was significantly lower than women in older cohorts. In fact it was less than half the rate of women in the next highest cohort, indicating that there may have been some level of behavior change in the 5 years preceding the survey. Fewer births may mean that younger women were using more effective contraceptive methods, even though, as previously mentioned, they appeared to be initiating sex at younger ages. For women aged 20 to 24 years, 2 percent had a birth before the age of 15.

Table 3.1 Percent distribution of age at first birth by age group

Current Age	No Births	Age at First Birth						Total Percent	N	Median Age at First Birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	85.2	0.9	10.0	3.9	n.a.*	n.a.*	n.a.*	100	649	n.a.*
20-24	45.3	2.1	17.2	19.2	12.1	4.2	n.a.*	100	475	18
25-29	16.7	2.7	17.8	21.4	15.9	16.0	9.6	100	367	19
30-34	5.4	1.4	17.4	25.8	20.4	18.7	10.9	100	355	20
35-39	4.8	1.9	16.4	20.6	21.8	19.2	15.4	100	370	20
40-44	5.9	1.4	11.8	23.6	18.7	19.7	18.7	100	314	21
45-49	4.6	4.2	11.4	17.6	18.0	21.5	22.8	100	225	21
All	32.5	1.9	14.4	17.3	13.4	11.8	8.7	100	2756	20

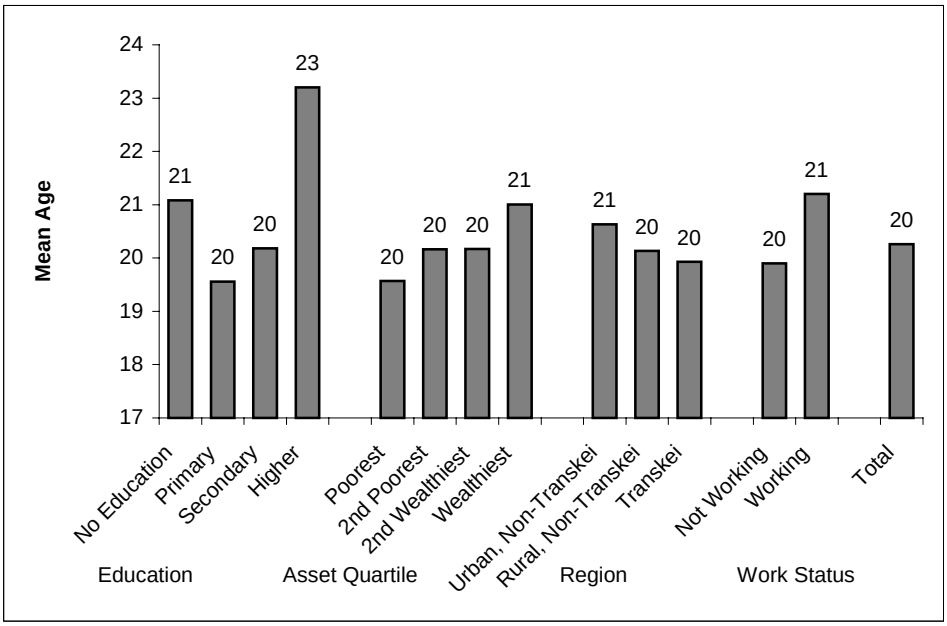
* N.a. (not applicable) indicates fewer than 50 women in the cell.

The mean age at first birth varied by characteristics of the woman (Figure 3.5).[2] Among women who had given birth, women who were working for cash started child-bearing at least one year later than women who were not working. Women with higher than secondary education started child-bearing on average almost 4 years later than women with only a primary school education. Oddly, women with no education started child-bearing on average a full year later than women

[2] Cox proportional hazards models were estimated for factors associated with age at first birth. Few factors were statistically associated with a greater hazard of early age at birth and the results are not presented here.

with secondary education and 1.5 years later than those with primary education. The results for women with higher education were unsurprising as the opportunity cost to them of having children earlier is likely to be higher than for women with lower levels of education.

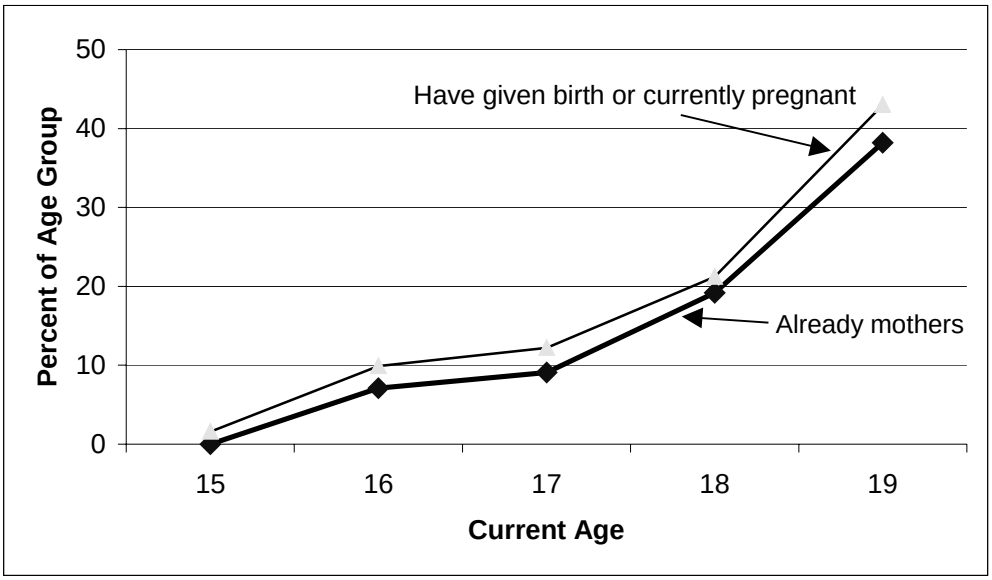
Figure 3.5 Mean Age at First Birth by Education, Assets, Region, and Work Status



3.5 Teenage Pregnancy and Motherhood

Women who begin sexual relations early can increase their exposure to both sexually transmitted infections and risk experiencing early child-bearing and subsequently higher fertility. Figure 3.6 shows the proportion of adolescents by age in completed years who were already mothers or who had given birth or were currently pregnant. Overall, 13.4 percent of teenagers were mothers. At age 15, virtually none of the adolescents in the sample were mothers but a few were currently pregnant. Not surprisingly, the percentage rose with each additional teenage year. By age 16, approximately 10 percent of adolescents had begun child bearing. A sharp increase in child bearing occurred at age 18. By age 19, nearly 40 percent of adolescent women were mothers.

Figure 3.6 Childbearing and Teens



Adolescent childbearing varied by background characteristic (Table A3.3). Rural teens were twice as likely to become mothers as urban women. Small numbers of teen mothers, however, made conclusive comparisons across different groups difficult. Black and colored women were equally likely to be mothers and twice as likely as white teens, but there were only 19 white teens in the sample. Women with Standard 10 education were more likely to be mothers than any other education group but there were only 36 women with Standard 10 education in the teen sample. Women in Western District were the most likely to be mothers, but there were only 26 teens in Western District. Teens in the highest asset quartile were the least likely to become mothers. Only 7.7 percent of these teens had begun child-bearing as compared with 23.0 percent of teens in the lowest asset quartile. This difference was certainly a reflection of several factors, including education, exposure to fertility regulation messages, the different career opportunities available to higher income teens, and the higher opportunity cost of having children.

CHAPTER 4. FERTILITY REGULATION

Nearly all women have heard of some form of contraception, and most have, at some point in time, used some form of contraception. Among sexually active women, approximately 60 percent are using a modern method of contraception, most commonly injectables (37 percent). The main providers are government facilities, which provide over 92 percent of modern contraception. Proximity is the main reason for choosing a particular provider. Use of condoms as a form of contraception was extremely low. Less than 2 percent of sexually active women used condoms as their regular source of contraception, but ever use of condoms and use of condoms during last sex were somewhat higher – 15 percent and 8 percent respectively.

The unmet need for family planning – the proportion of fecund women who are not currently using contraception and who say that they want no more children (limiting) or want to wait two or more years to have the next child (spacing) – was approximately 21 percent. Most of this need (16.7 percent) was for limiting additional births. Unmet need was highest in the former Transkei (28 percent) and lowest in urban areas.

Modern contraception allows women to delay the initiation of child-bearing, to time births in order to achieve proper spacing, and to avoid additional births once fertility goals have been met. While most women in the Eastern Cape have heard of some form of modern contraception, many women, including those who do not want any more children, do not use any form of contraception. While this would indicate that there is an "unmet" need for modern contraception, factors such as lack of accessibility to family planning services should be measured relative to individual and household factors. As will be shown in Chapter 8, many women will not use modern contraception even if it is readily accessible, affordable, and of high quality.

4.1 Knowledge of, Ever Use, and Current Use of Contraception

In the 1998 Eastern Cape DHS, knowledge of modern contraception was almost universal (Table A4.1).[3] Over 97 percent of all women, 98 percent of married women, and 99 percent of sexually active women knew of at least one modern contraceptive method (Figure 4.1). Knowledge was highest for injections, followed closely by the pill. Knowledge of condoms was somewhat lower. Approximately two-thirds of women had heard of female sterilization, but less than a third had heard of male sterilization.

[3] Modern contraception is defined here as the pill, IUDs, injections, condoms, female sterilization, or male sterilization.

Relatively high rates of ever use of modern contraception were apparent in the Eastern Cape. Ever use of any method of modern contraception was 70 percent for all women, 76 percent for married women, and 84 percent for sexually active women (Figure 4.2). Injections were the most common method of modern contraception that women had used (Table A4.1). Nearly 60 percent of all women and married women had used injections; 69 percent of sexually active women had also used injections. The next most common method was the Pill, tried by over one-third of women.

Overall the prevalence of modern contraception was approximately 60 percent of sexually active women, 47 percent of married women, and 45 percent of all women aged 15-49 (Figure 4.3). Injections were the most common currently used method – 37 percent of sexually active women, 23 percent of currently married women, and 31 percent of all women (Table A4.1). While knowledge and ever use of the pill was relatively high, only a few women were currently using it. Just over 12 percent of married women had been sterilized.

Use of condoms as the principal contraceptive method was quite low. Only 1.4 percent of sexually active women reported using condoms. That amounted to only 16 women out of the 1,182 sexually active women in the sample. Among sexually active women, the principal forms of contraception were oral and injectable contraceptives.

Figure 4.1 Knowledge of Modern Contraception by All Women, Currently Married Women, and Sexually Active Women

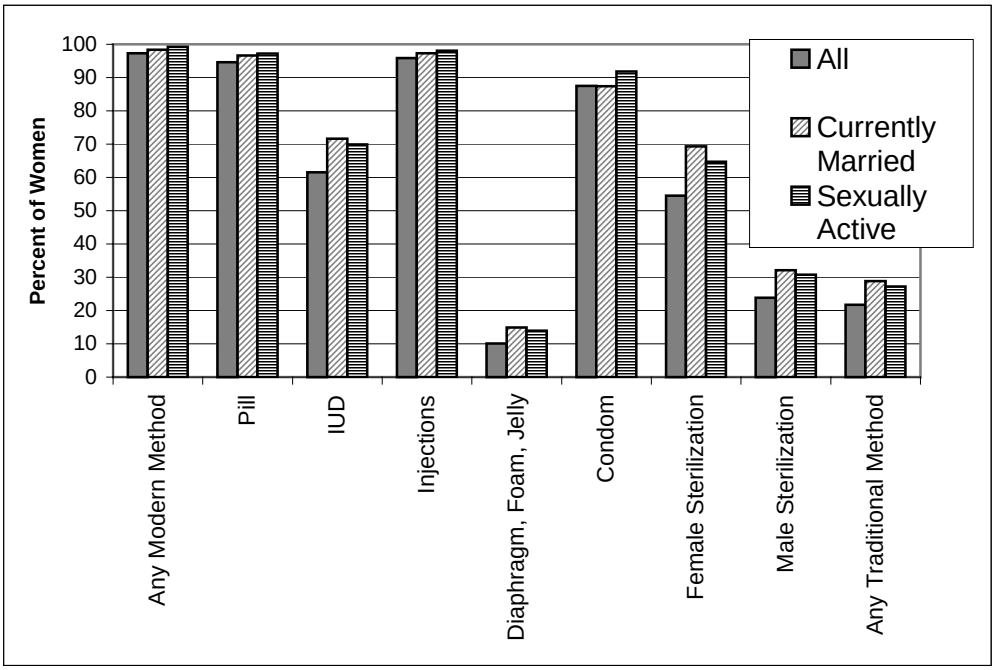


Figure 4.2 Ever Use of Contraceptive Methods by All Women, Married Women, and Sexually Active Women

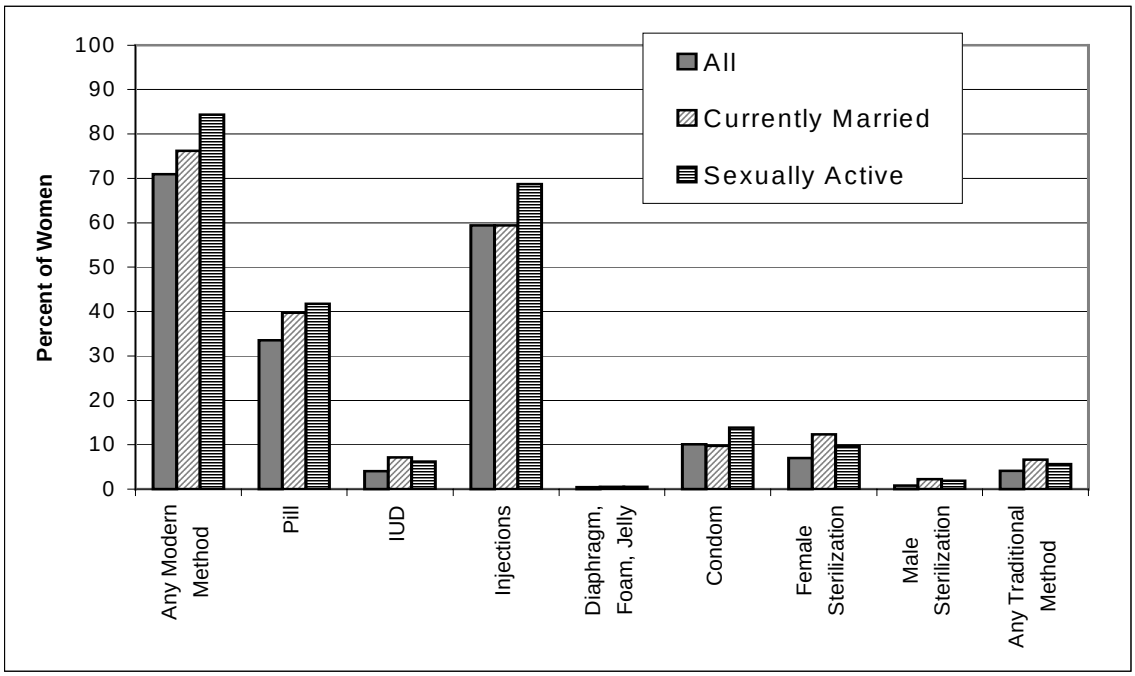
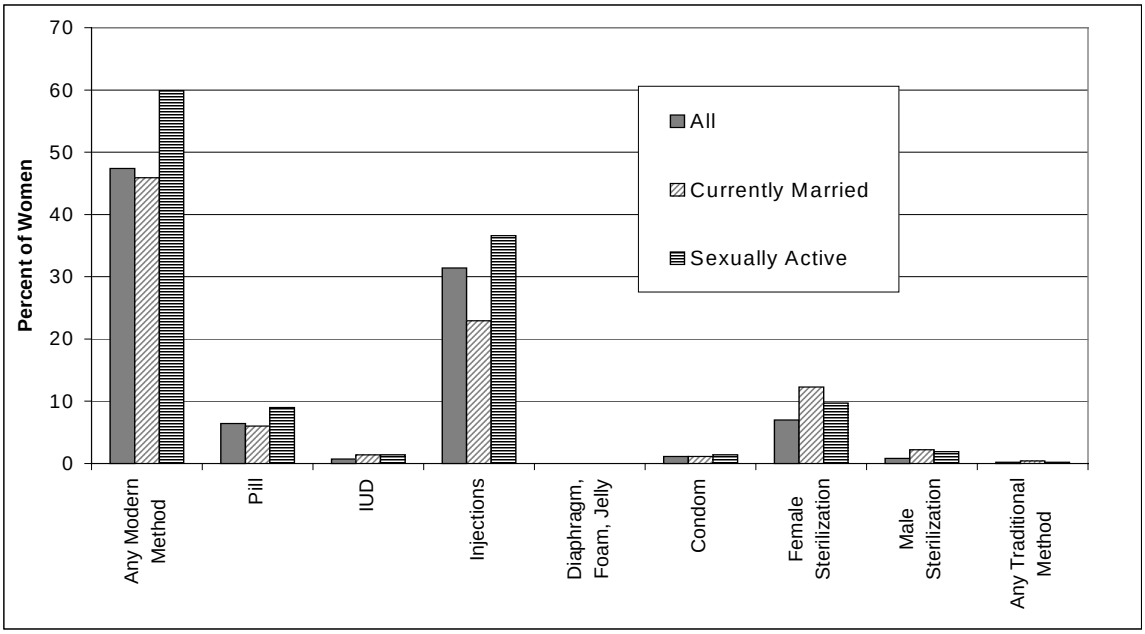


Figure 4.3 Current Use of Contraceptive Methods by All Women, Married Women, and Sexually Active Women



4.2 Correlates of Current Contraceptive Use

Contraceptive use varied by region, race, education, income and marital status (Table A4.2). Chapter 8 presents multilevel analyses of contraceptive use as a function of both individual characteristics and characteristics of the government facilities that serve the areas in which they live. Among sexually active women, use of modern contraceptive methods was as high as 84 percent in Western District Council but less than a third of that in Alfred Nzo. In the former Transkei, only 35.7 percent of sexually active women were using modern contraception, half the rate in urban areas and 60 percent of the rate in other rural areas. Use of modern contraception was lower among black women relative to other racial groups, among less educated women, in rural areas, and in lower income groups.

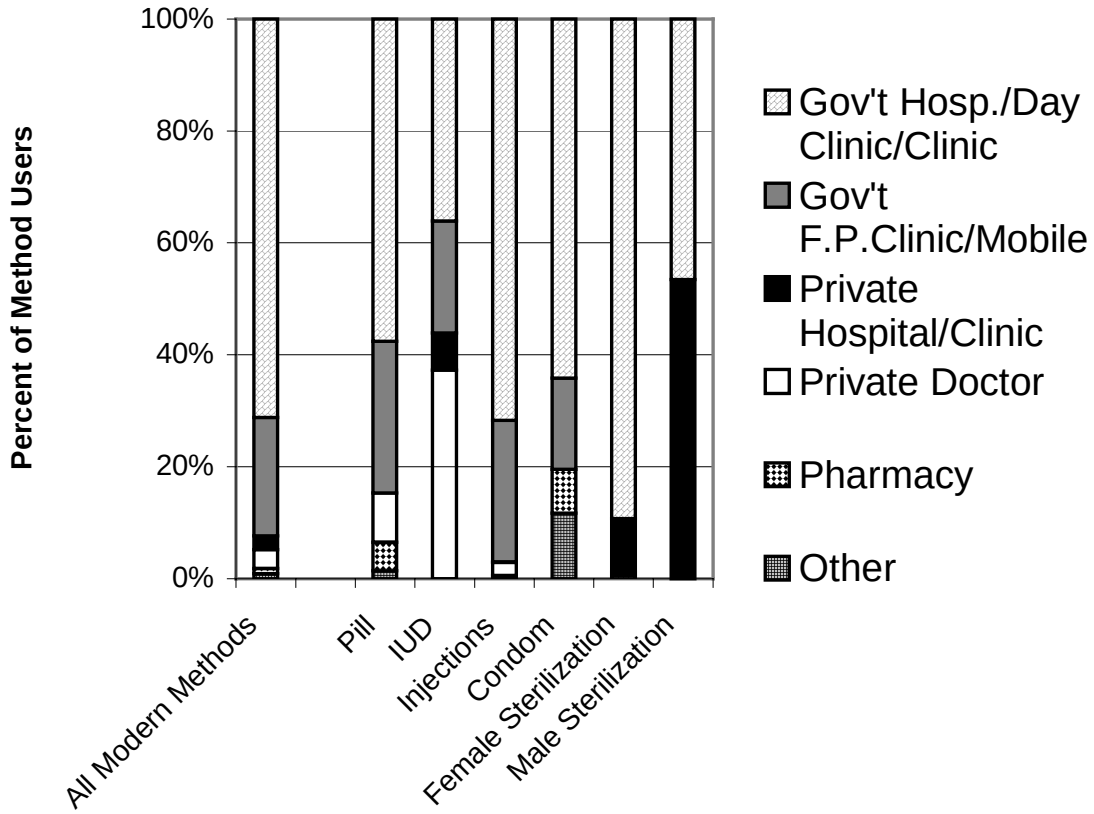
Table A4.3 presents correlates of use of specific contraceptive methods. Women in the former Transkei were less likely to use most modern methods except for condoms, which were used by 1.7 percent of sexually active women as compared with 0.9 percent of sexually active women in other rural areas. Around 1 percent of sexually active women reported using traditional methods in the former Transkei but no women in other rural areas did.

Older women were more likely to choose permanent methods such as male or female sterilization. Use of injections was higher in Amatole, Ukhahlamba, and Western District. More educated women were more likely to use the pill than injections, as were white women. Use of traditional methods was nearly zero in all subgroups. Working women were also more likely to use the pill or to choose permanent methods.

4.3 Source of Modern Contraception

At the time of the survey, the government was the principal provider of modern contraception (Figure 4.4, Table A4.4), providing over 92 percent of modern methods in hospitals, day clinics, clinics, family planning clinics and mobile clinics. The private medical sector, while providing only 6.8 percent of modern contraception, was providing over 44 percent of IUDs, although only a tiny fraction of women were using IUDs. Male sterilization, again a relatively minor source of contraception, was predominantly provided by the private sector. The government provided 85 percent of pills, 89 percent of female sterilizations, and 97 percent of injections.

Figure 4.4 Source of Modern Contraception



Questions were asked as to the principal reason for choosing a particular provider of family planning. Responses, however, should be taken with caution, as the choice of contraceptive provider is likely to be based on a myriad of factors, some of which the respondent may not overtly recognize when responding. As mentioned in Chapter 1, other methods such as multilevel analysis may be better suited to measuring the effects the various factors on peoples' intentions and choices but will be addressed in Chapter 8.

Ease of access was the most common reason cited by women (Table 4.1). Among current contraceptive users, nearly three-quarters chose a provider because it was close to home, work, or markets or for transportation reasons. Characteristics of the service quality, particularly staff competence and attitude, accounted for the remaining reasons. Price did not appear to be a barrier to use, as it was cited by only 1 percent of women as the reason for choosing a provider.

Table 4.1 Reasons for choosing provider

Reason	Percent
Closer to home	74.2
Closer to market, work	5.7
Staff competent, friendly	5.6
Offers more privacy	1.7
Transport	1.6
Shorter waiting time	1.4
Use other services	1.1
Lower cost, cheaper	1.0
Cleaner facility	0.7
Missing	0.6
Long hours of operation	0.1
Other	6.4
Did not know	0.1
Total	100.0

4.4 Number of Children at First Use

Women were asked about the number of children that they had when they began using contraception. Earlier initiation of contraception allows for greater control in limiting and spacing births and therefore greater control in achieving fertility goals. Overall, 62 percent of women began using modern contraception when they had fewer than three children (Table A4.5). Over a third began using contraception before having their first child. Cohort analysis indicates that younger women started using contraception at a younger age than older women. For example, 45 percent of women aged 20 to 24 years initiated contraceptive use before having their first child, compared with only 29 percent of women currently 30 to 34 years.

4.5 Sterilization

As noted earlier, approximately 12 percent of married women and 10 percent of sexually active women had chosen female sterilization. The most common age at which women were sterilized was between 30 and 34 years old (Figure 4.5). Sterilization occurred for over 90 percent of women between the ages of 25 and 39. Nearly a fifth of women reported being sterilized while single, but only 1 percent reported being sterilized without having a child and only 5 percent reported being sterilized after only one child. The distribution for the parity at which women were sterilized differed by urban-rural location (Figure 4.6). Parity 3 women were those who most commonly get sterilized in urban areas, although this was only 30 percent of the urban sterilized women. In rural areas, 60 percent of women who were sterilized had five or more children already.

Of the 197 women who were sterilized, 93 percent did not regret the operation. Of the remainder, 10 wanted another child and one reported side effects.

Figure 4.5 Percent Distribution by Age at Sterilization

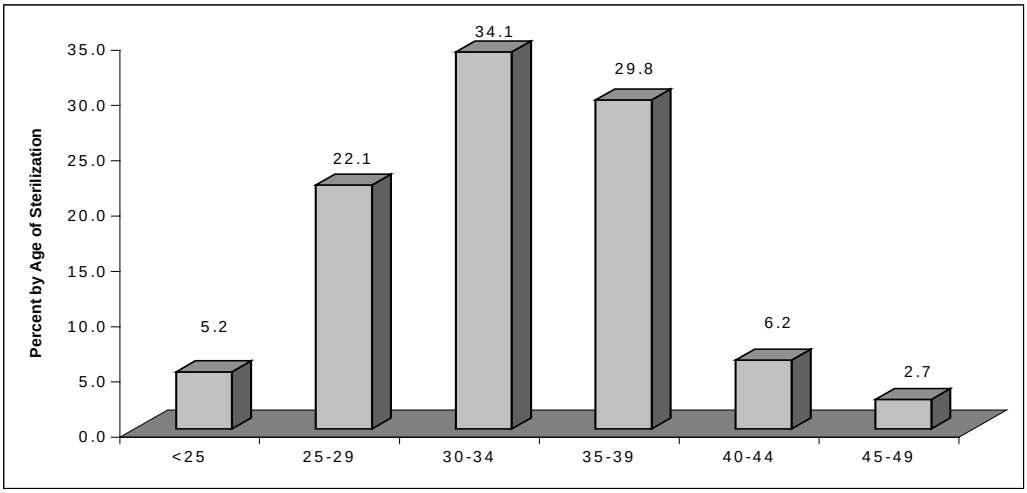
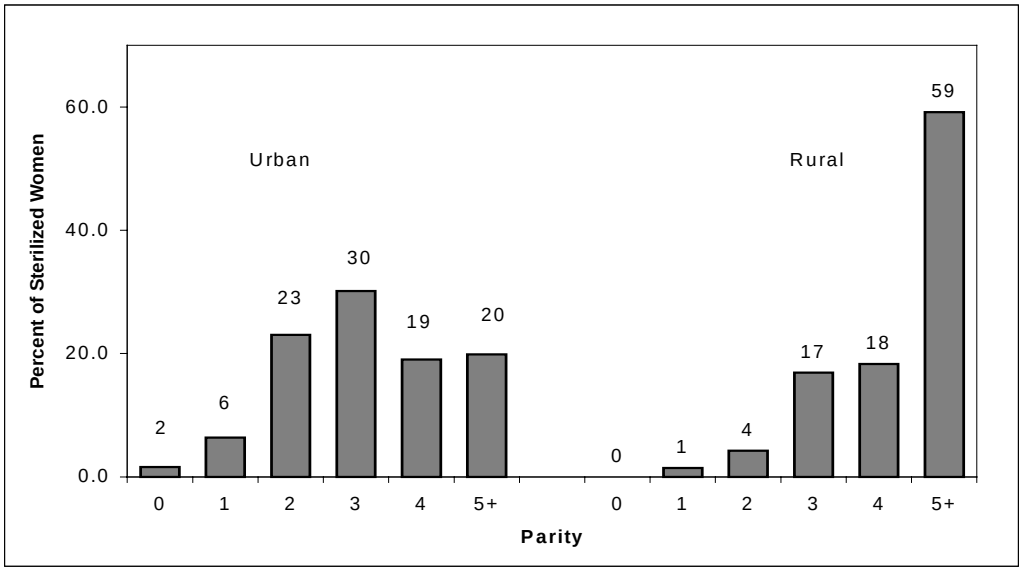


Figure 4.6 Percent Distribution of Parity at Sterilization, Urban and Rural Women



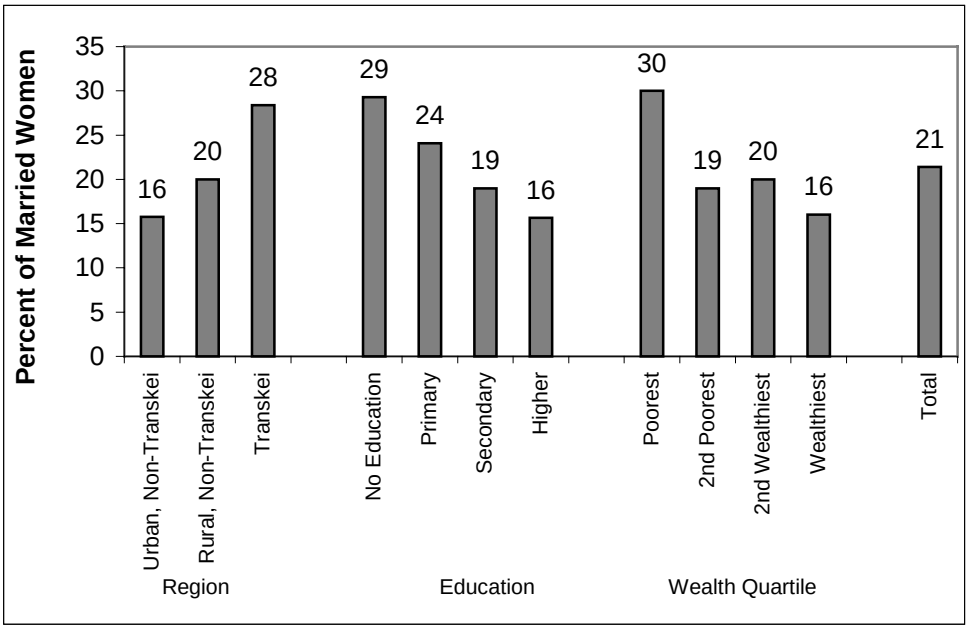
4.6 Unmet Need for Family Planning

Unmet need for family planning refers to fecund women who are not currently using contraception and who say that they want no more children (limiting) or want to wait 2 or more years to have the next child (spacing). Excluded from this group are women who are infecund/post menopausal or women who have never had sex or who are not having sex.

Overall, in the Eastern Cape, 21.4 percent of married women had an unmet need for family planning. The unmet need for spacing was only 4.7 percent; unmet need for limiting was 16.7 percent (Table A4.6). For 46 percent of women, their need for family planning services was being met; 9 percent were using contraception for spacing, while 37 percent were using contraception to limit further births. Approximately 18 percent of married women wished to have another birth in the next 2 years and 14 percent were infecund or menopausal.

Unmet need was higher among less educated women (29.3 percent), among women in the former Transkei (28 percent), and among women in the lowest asset quartile (30.0 percent) (Figure 4.7). Conversely, met need was higher in urban areas (65.8 percent), among women with at least a Standard 6 education (48.5 percent), among white and colored women (83.6 and 62.6 percent respectively), in Mandela, Ukhahlamba, and Western District (61.4, 60.3 and 76.9 percent respectively) and among women in the highest asset quartile (68.2 percent) (Table A4.6).

Figure 4.7 Unmet Need for Family Planning among Married Women



CHAPTER 5. MATERNAL AND CHILD HEALTH

The same birth histories that allow us to calculate fertility rates also permit calculations of infant and early childhood mortality rates. Further information on recent pregnancies and children's health histories allow us to examine use of antenatal care, childhood vaccinations, and recent children's illnesses.

Mortality: For the province as a whole, the infant (less than 1 year) and under 5 mortality rates were 61 and 80 deaths per 1,000 live births. The infant mortality rate in the former Transkei (83 deaths per 1,000 live births) was more than twice that of urban areas (35 deaths per 1,000 live births) and 60 percent higher than other rural areas (51 deaths per 1,000 live births). There was some evidence of a decline in mortality rates over the period 1989-1998, though much of this decline was in the early years and there was some evidence of an increase in mortality over the period 1994-1998. Mortality was clearly associated with socioeconomic status, age of the mother, parity and household amenities.

Antenatal and Delivery Care: Antenatal care was used by 95 percent of pregnant women. The majority of women received their antenatal care from a trained nurse or midwife (83 percent); most of the remainder received antenatal care from a doctor (12 percent). Approximately 70 percent of women giving birth in the 5 years preceding the survey delivered in modern medical facilities. A much higher percentage of women in the former Transkei (37 percent) delivered at home than in other rural areas (26 percent) and in urban areas (4 percent). Fully 9 percent of newborns were considered to be underweight. This rate was highest among the poor, in which 17 percent of newborns were considered to be underweight. Only 1 percent of newborns of wealthy households were considered to be underweight.

Child Health: Overall, the prevalence of diarrhea in the 2 weeks prior to the survey was 12.7 percent. Approximately 60 percent were treated with oral rehydration salts (ORS) or suitable alternatives. The prevalence of ARI was 14.6 percent of children under age 5. Children's health outcomes – diarrhea prevalence, acute-respiratory infection prevalence, immunization coverage – were considerably worse in Alfred Nzo and Oliver Tambo District Councils than elsewhere. Over half of all children were not receiving the recommended childhood vaccinations. Only 51 percent of children aged 12 to 23 months had received the full set of DPT3, Polio, BCG, measles, and hepatitis vaccinations. Dropout rates were high. Approximately one fifth of children 12 to 23 months started the sequence of DPT3 vaccinations, but did not finish them. Nearly one quarter started the sequence of polio vaccinations, but did not finish.

Breastfeeding: Exclusive breastfeeding was almost non-existent in the Eastern Cape. From birth, most children were given a diet that included water and other liquids. The median duration of breastfeeding duration was over 9 months, but varied by region. Children in urban areas were breastfed only 5 months on average. Breastfeeding duration was longer among poorer households with less hygienic water supplies.

5.1 Infant and Child Mortality

Within the Eastern Cape, a variety of communicable and non-communicable diseases contribute to early childhood mortality. Using the birth histories collected in the women's questionnaire, it was possible to estimate neonatal, post-neonatal, infant, child and under 5 mortality in the recent past.

During the period 1989 to 1998, the Eastern Cape's infant mortality rate – the rate for children under age 1 year – was 61 deaths per 1,000 live births (Figure 5.1). The under 5 mortality rate was 80 deaths per 1,000 live births. Neo-natal mortality – deaths to children under 1 month – and post-neonatal mortality – deaths to children from 1 month to 1 year of age – were 25 and 36 deaths per 1,000 live births respectively.

Even though mortality rates in the Eastern Cape are high relative to other parts of South Africa and to other countries, death is still such a sufficiently rare occurrence that only a few statistically valid comparisons can be made across different groups. For those comparisons that can be made, the differences are dramatic. For example, in the former Transkei, infant mortality rates during the period 1989 to 1998 were 83 deaths per 1,000 live births, more than double that in non-Transkei urban areas (35 deaths per 1,000 live births) and 60 percent higher than non-Transkei rural areas (51 deaths per 1,000 live births) (Figure 5.2). A similar sized difference was apparent by education levels. Children of mothers with no education had infant mortality rates of 95 deaths per 1,000 live births, as compared with 76 deaths for children of women with primary school education and 46 deaths for children of women with secondary or higher education. There were also 13 more deaths per 1,000 live births for boys than for girls.

Not surprisingly, under 5 mortality rates were highest in the two poorest asset quartiles (Figure 5.3). Under 5 mortality rates in the lower half of the asset quartiles were nearly identical, and more than 2.5 times that in the highest asset quartile.

Because birth histories were taken over the entire reproductive life of the women in the sample, it is possible to obtain period mortality rates. Specifically, it is possible to go back to 1983 – 15 years prior to the survey – to monitor period specific mortality rates. Trends must however be interpreted cautiously as they may be seriously affected by recall bias. Under 5 mortality declined from 105 in 1983-88 to 83 in 1988-93, and to 78 in 1993-98. The decline in the most recent 5-year period was due to a decline in child mortality at ages 1 to 4 years. Infant mortality also declined during the late 1980s, but little change was observed during the 1990s (59 and 63 per 1000 live births in 1988-93 and 1993-98, respectively). Most of the decline in infant mortality occurred in the post-neonatal period, as neo-natal mortality changed very little – and actually increased slightly – during the study period.

Mortality trends were also calculated by region – urban non-Transkei, rural non-Transkei, and former Transkei. However, disaggregating the available data into 5-year periods and regions

significantly reduced the numbers of deaths and exposure to risk by category. As a result, sampling errors were large and valid comparisons were difficult to make. Even so, there was little indication in the data that a closing of the mortality differentials between the former Transkei and elsewhere had been occurring in the 5, 10, or 15 years preceding the survey.

Figure 5.1 Early Childhood Mortality Rates, 1989-1998

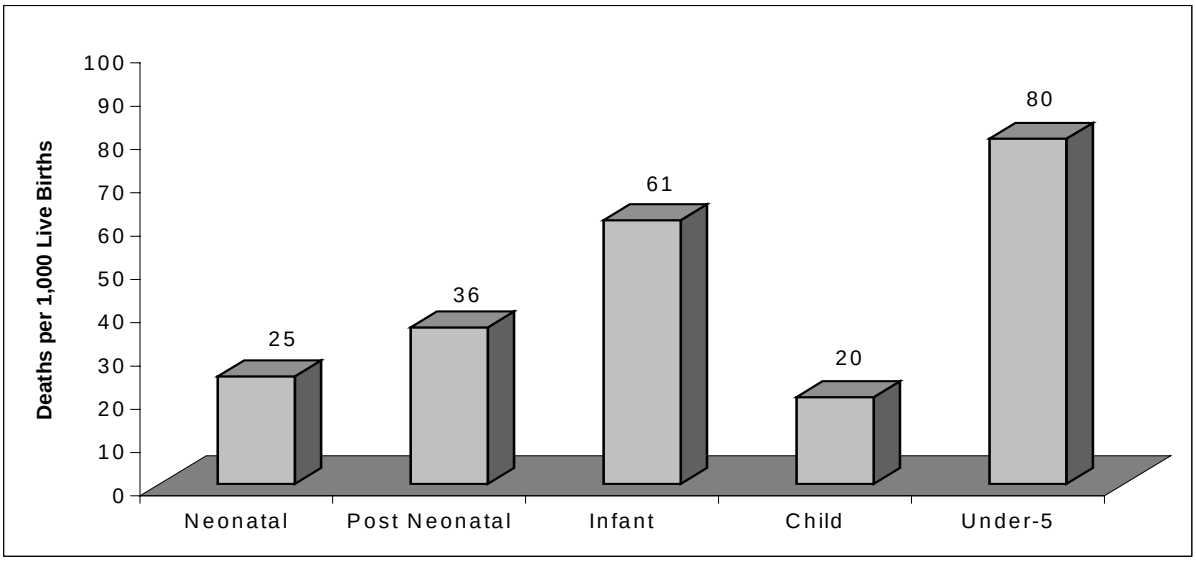


Figure 5.2 Infant Mortality Rates by Group, 1989-1998

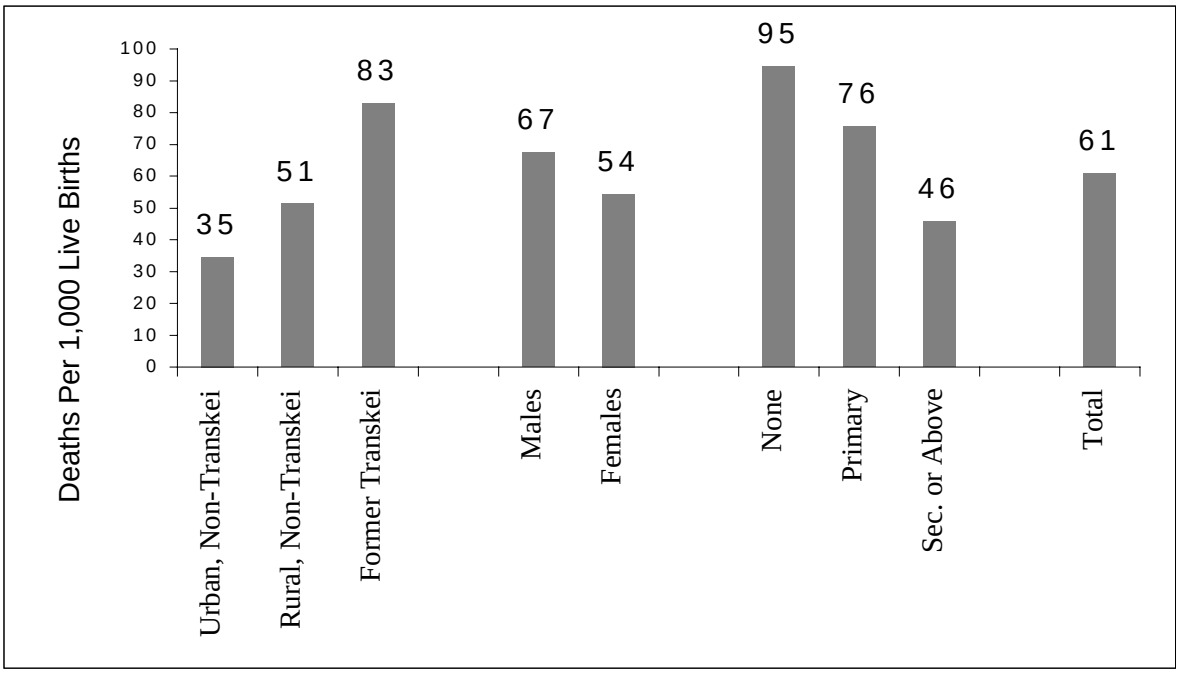


Figure 5.3 Under 5 Mortality Rates by Wealth Quartile, 1989-1998

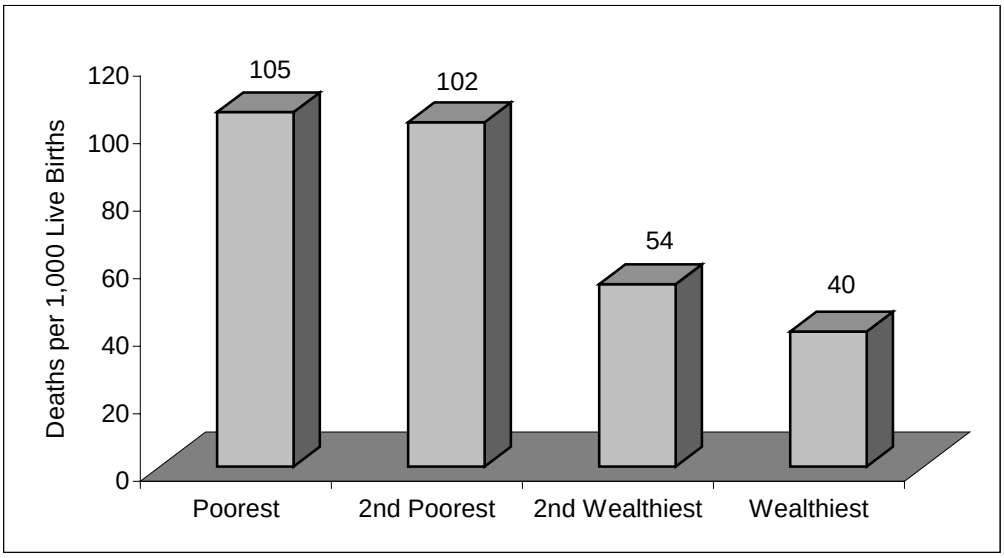
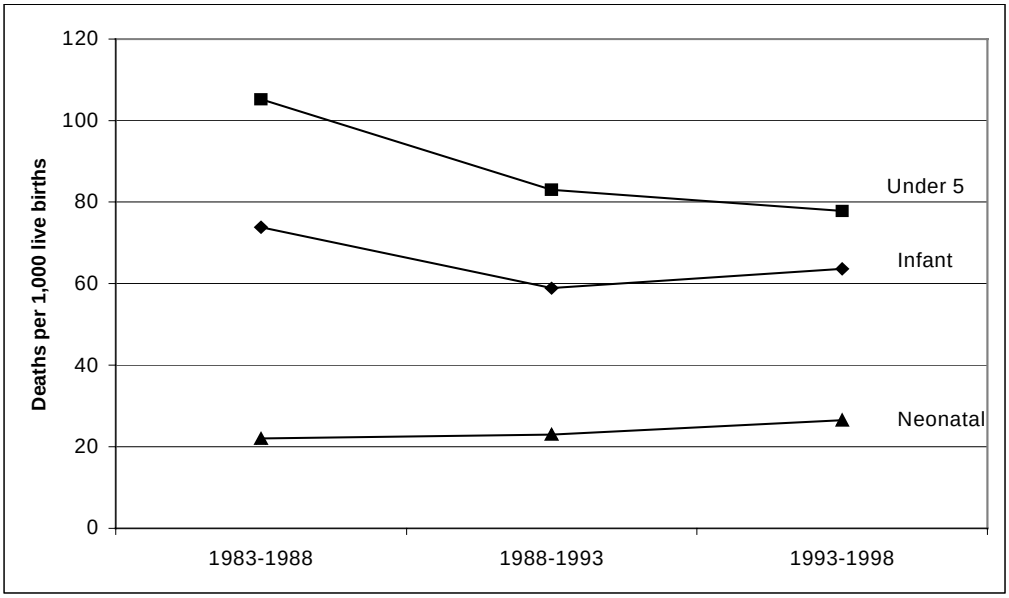
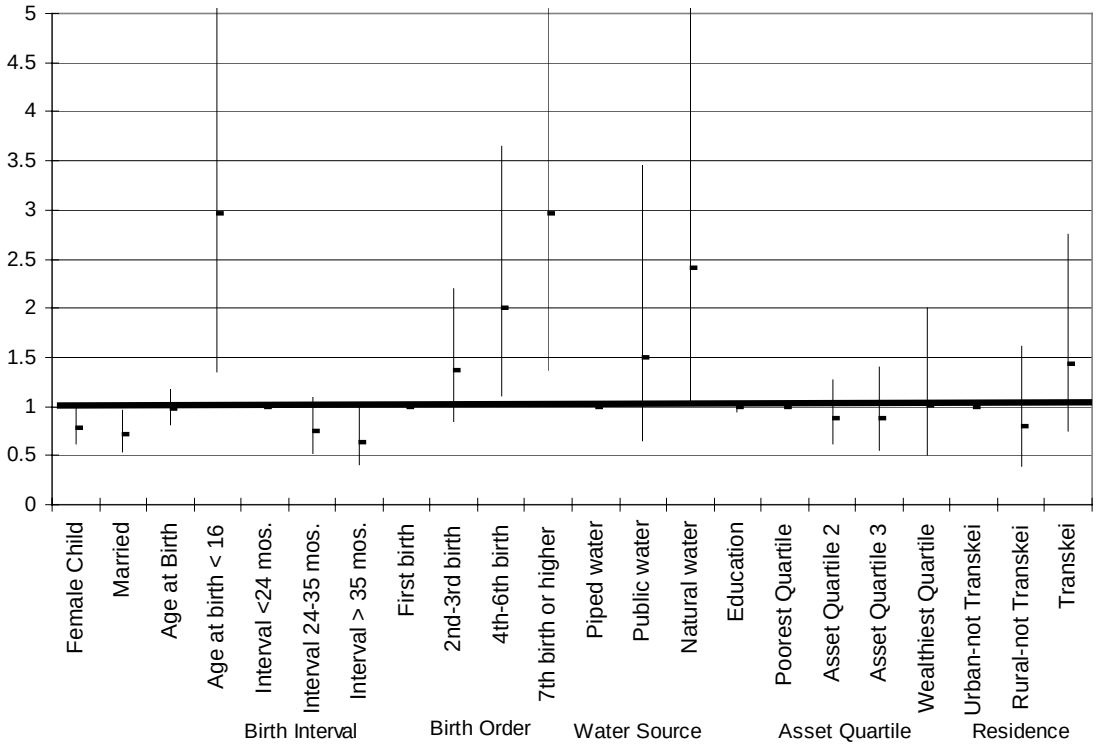


Figure 5.4 Trends in Childhood Mortality, 1983-1998



To provide a better picture of the statistical associations between mortality and various socio-economic and socio-demographic variables, maximum likelihood Cox proportional hazard estimations for survival data were undertaken. Figure 5.5 presents the hazard ratios or relative hazards of mortality from being in one group relative to another (complete results are in Table A5.1). Dramatic differences were apparent for both the groups presented above and other groups. For example, the relative risk of mortality for children in the former Transkei was approximately 50 percent higher than for children in urban non-Transkei areas. This effect was apparent even when we took into account differences in education, income levels and other socio-economic and socio-demographic variables. The significance of such a result is that it indicates that there were differences in mortality between the former Transkei and elsewhere that were not explained by factors – income, education, etc. – which we might expect to explain differences. Other factors, not controlled for here, such as access to and quality of health services, or even use or non-use of available services, may provide possible explanations for mortality differentials.

Figure 5.5 Hazard Ratios of Child Mortality by Demographic and Socio-economic Variables during 10 Years Prior to Survey, Cox Proportional Hazard (95 Percent Confidence Intervals)

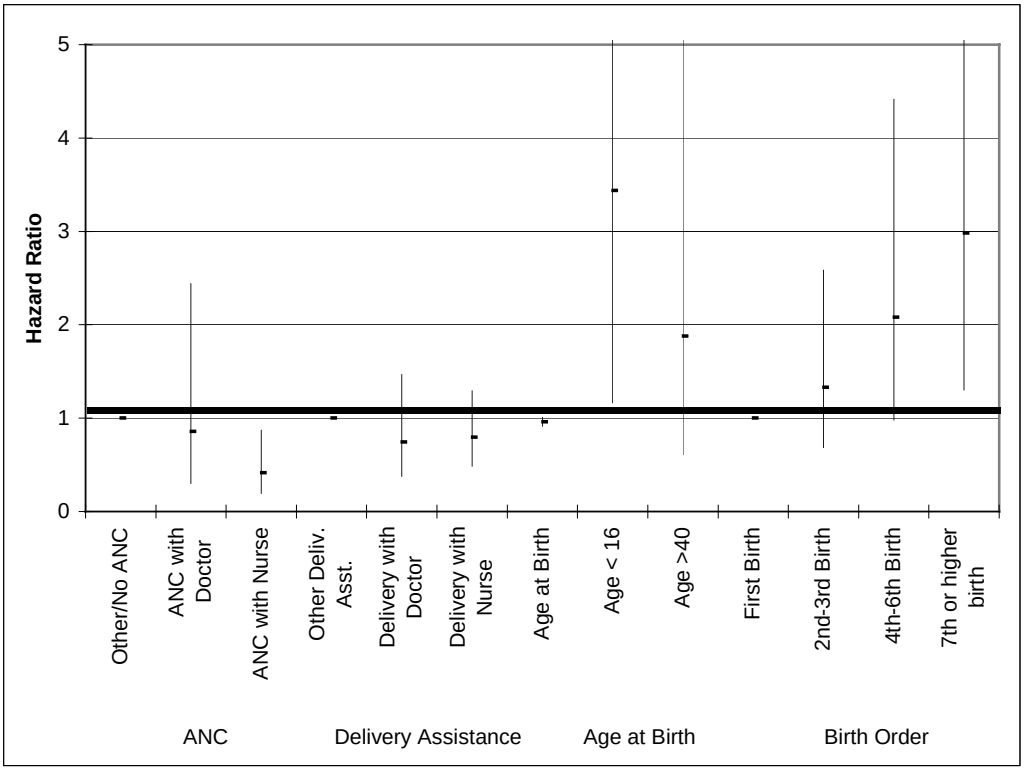


Other factors had varying impacts on mortality. There did not appear to be a significantly greater or lesser risk of mortality by asset quartile. Education too played a small and statistically insignificant role. Other factors, on the other hand, were important risk factors. The relative risk of child mortality was nearly three times higher if the birth occurred to a mother under age 16 at the time of birth or if the birth was seventh order or higher. Children in households relying upon river, stream, or lake water for drinking were at a nearly 2.5 times greater risk of mortality than children with piped water in the dwelling. Longer birth intervals reduced the risk of mortality, as did whether the mother is married. Female children had a lower mortality risk than males, an unanticipated finding that does not have an obvious explanation.

For births in the 5-year period prior to the survey, information was collected on prenatal care, delivery assistance, and birth weight. Figure 5.6 presents the hazard ratios for a subset of covariates from a Cox proportional hazards estimation (complete results are shown in Table A5.2). The variables included in the model all potentially have direct effects on child health – the proximate determinants in terms used by Mosley and Chen (1984). In other words, these variables are related to health practices that may be influenced by socio-economic and other variables.

Because the sample size was smaller for the 5-year period than for the 10-year period, the confidence intervals on the parameter estimates were higher. Even so, many statistically significant relationships were still apparent. In particular, antenatal care with a nurse – relative to no antenatal care – was associated with a 50 percent lower risk of mortality. However, assistance at delivery – either by a doctor or a nurse – had no significant impact on the risk of mortality. Higher order births were also at a significantly higher risk of mortality, perhaps due to improper birth spacing and therefore poorer maternal health status. Mother's age at birth, either less than age 16 or greater than age 40, was associated with considerably higher risk of child mortality. Factors such as duration of breastfeeding and immunizations were excluded from the analysis since many children would not have lived long enough to receive these, and hence their beneficial effects would likely be over-stated.

Figure 5.6 Hazard Ratios of Child Mortality by Demographic and Pregnancy Characteristic Variables during 5 Years Prior to Survey, Cox Proportional Hazard (95 Percent Confidence Intervals)



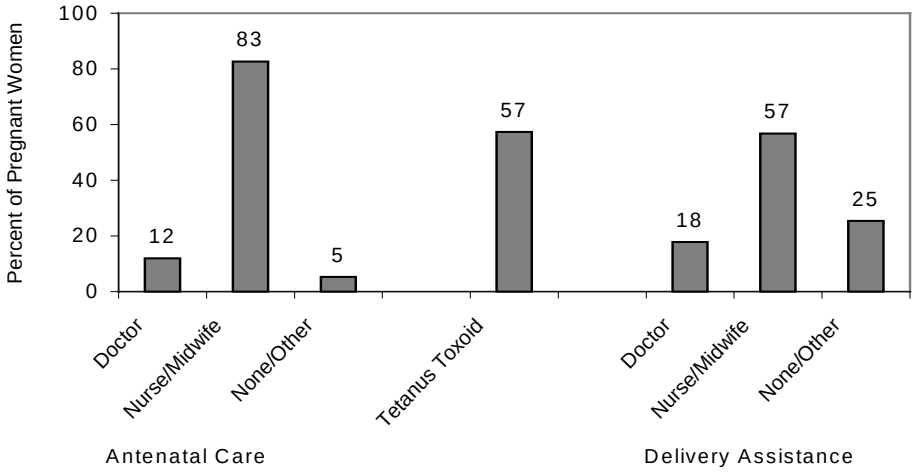
5.2 Antenatal and Delivery Care

Antenatal care provides an opportunity to identify potential problems during pregnancy, to vaccinate women against tetanus, and to provide health information to women regarding their pregnancies. For births in the 5 years preceding the survey, most women used a nurse or midwife during pregnancy (83 percent) (Figure 5.7). More than half also got a tetanus toxoid vaccination (57 percent). Overall, 95 percent of women received antenatal care from a doctor or nurse during their pregnancy. For delivery assistance, the percentage was considerably smaller; only 75 percent used a doctor or nurse/midwife. Approximately one quarter of women in the Eastern Cape delivered at home.

Use of a doctor for prenatal care and delivery assistance was positively associated with income and education, while use of a nurse or midwife for either was negatively associated with income and education (Table A5.3). Use of a doctor for prenatal care and delivery assistance was highest in Mandela Metropole – approximately 40 percent of women – but less than 10 percent of

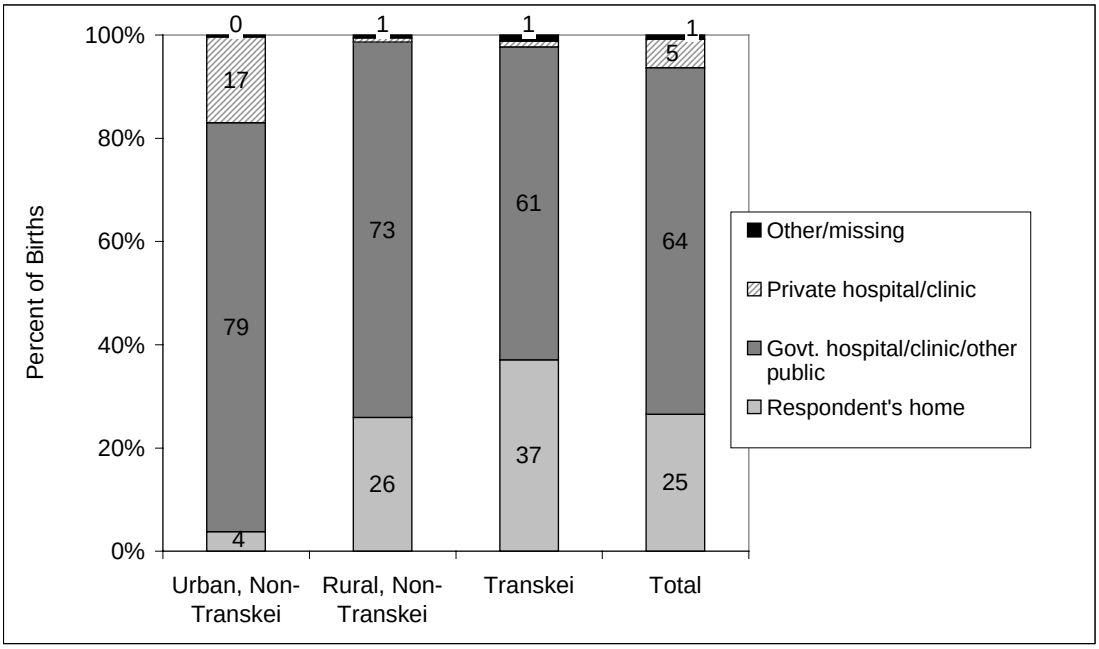
women in Oliver Tambo and Ukhahlamba used a doctor for delivery. In fact, over 97 percent of whites reported using a doctor for delivery assistance as compared with only 13 percent of black Africans. The percentage of women who received a tetanus toxoid vaccination was lower for Mandela Metropole (46.1 percent) than all other regions including Alfred Nzo (55.8 percent) and Oliver Tambo (56.6 percent). Similarly, women in the highest income quartile (45.6 percent) and the highest level of education (38.8) percent actually reported a lesser likelihood of receiving a tetanus toxoid vaccination than women in the lowest income quartile (55.9 percent) and with no education (46.7 percent).

Figure 5.7 Percent of Pregnant Women Receiving Antenatal Care, Tetanus Toxoid Injection and Assistance at Delivery



Nearly two-thirds of women in the Eastern Cape delivered in government facilities (Figure 5.8). This figure was lowest in the former Transkei, primarily because such a high proportion (37 percent) of women delivered at home. This was in stark contrast to urban areas, where only 4 percent delivered at home and 17 percent delivered in private hospitals or clinics, and rural non-Transkei areas where 26 percent delivered at home. Factors associated with delivery location are addressed in Chapter 8.

Figure 5.8 Delivery Location



5.3 Birth Weight

Low birth weight is associated with premature births and consequently greater risk of succumbing to a variety of ailments. Approximately 60 percent of the sample of children born in the past 5 years were weighed at birth. For the survey, information about birth weight was obtained either from the child's health card, recall, or another method. Health cards were used for 54 percent of the weighed sample, while 24 percent and 20 percent of the information came from recall and other methods respectively.

The proportion of infants who were weighed was higher among children whose mothers were younger, more educated, lived in urban areas, and lived in Mandela or Western District (Table A5.4). Among those infants who were weighed, the proportion who were of low birth weight (less than 2,500 grams) was higher among children whose mothers lived in urban areas, were black African or colored women, and lived in Alfred Nzo, Amatole, or Western District. However, these proportions reflect a sample of children that may be different from the sample of children who were not weighed.

A Heckman selection model was used to estimate the birth weights and the effects of socio-economic and socio-demographic determinants of birth weight. Heckman selection models estimate linear regression models in cases in which outcomes for a portion of the sample – in this case birth weights – are not observed. The selection model assumes that there is an underlying

distribution for birth weights for the full sample of infants. Running a linear regression on only the sample of children with observed birth weights is likely to be incorrect if the sample of children for whom birth weights are recorded is different from the sample of children for whom birth weights are not recorded. In the Eastern Cape, children for whom birth weights were recorded were more likely to be delivered in a health facility and more likely to have had mothers who were more highly educated, from higher income groups, or located closer to health facilities. Using only this sample of children to estimate the effects of individual, household and facility characteristics might underestimate or overestimate the true effects of these characteristics. In order to address this potential selection bias, Heckman selection models, therefore, estimate two simultaneous equations: (1) a dichotomous 0/1 variable for whether a child's birth weight is observed; and (2) a continuous variable for birth weight controlling for the distribution reflecting whose birth weights are observed.

Using the full sample of births in the past 5 years, approximately 9 percent of children are estimated to have been born underweight (weighing less than 2,400 grams) (Figure 5.9). Large differences were apparent between urban and rural areas, but only a small difference was apparent between the former Transkei and all other rural areas. Large differences were also apparent by wealth quartile. Approximately one in six births to women in the lowest asset quartile were underweight births. In contrast, only 1 percent of births to women in the highest asset quartile were underweight. In the 5-year pre-survey period, all births to women with no education were underweight births, but no births to women with secondary or higher education were underweight (not shown).

On a positive note, the Heckman results also indicate that average birth weights have increased slightly over time (Figure 5.10). Looking specifically at the proportion of underweight births for the full sample of children (uncensored), the estimated mean birth weight was 2,588 grams in 1993. In 1998, the estimated mean birth weight was 2,773 grams, an increase of 186 grams.

Figure 5.9 Proportion of Births that Were Underweight

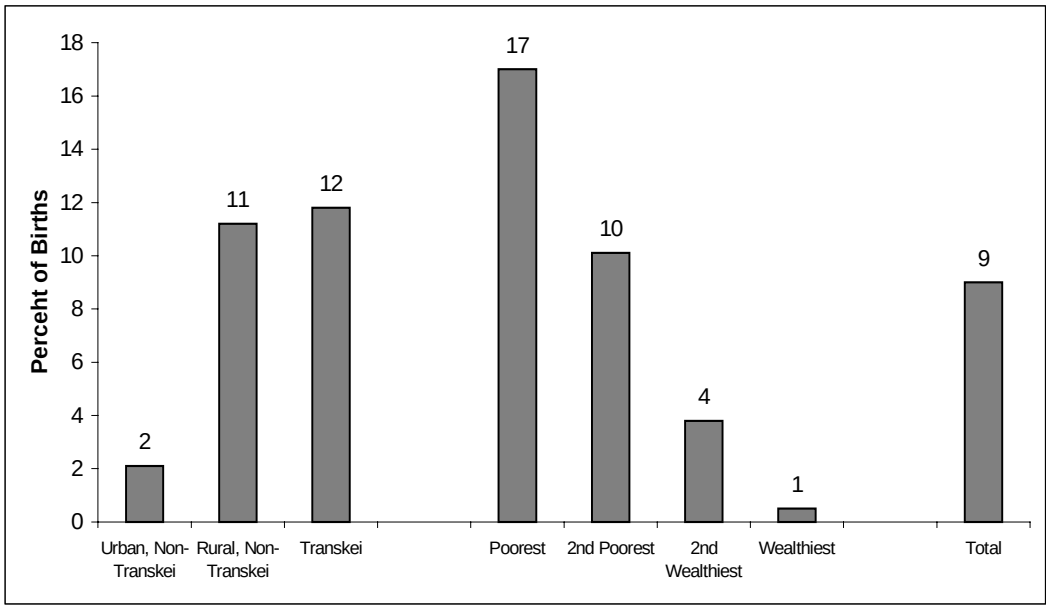
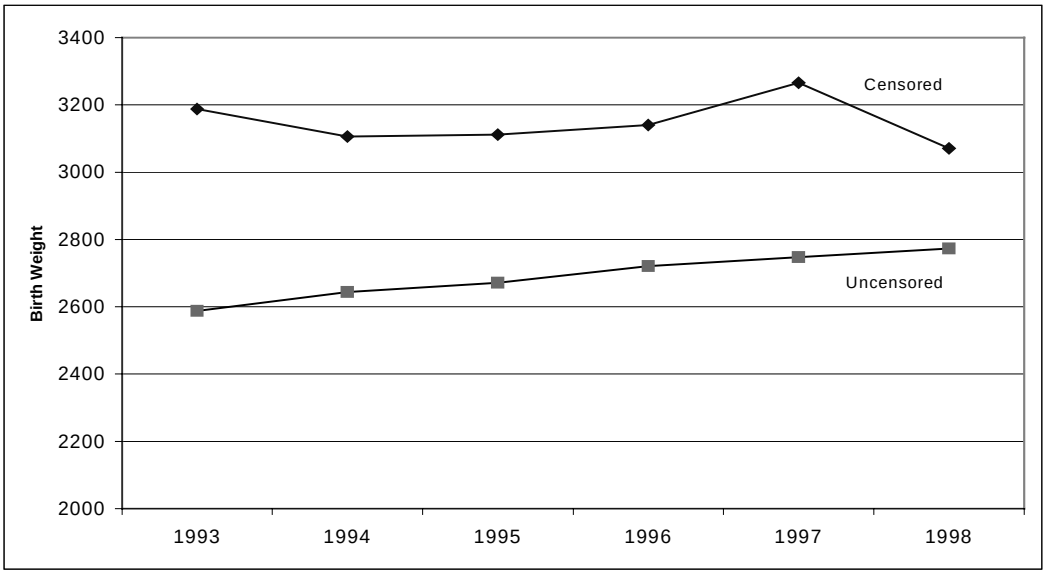


Figure 5.10 Mean Birth Weights for Censored and Uncensored Birth Weights, 1993-1998



Note: The censored line represents mean birth weights only for the sample for which birth weights were actually observed. The uncensored line represents estimated mean birth weights for the entire sample of children – both those with observed birth weights and those without. That the censored birth weight line is above the uncensored birth weight line would indicate that the observed sample of births was likely higher weight births than the unobserved sample. Children whose birth weights were omitted tended to be more similar to low-birth-weight children in the sample of observed birth weights. Adding these children to the sample therefore lowers the mean birth weight.

5.4 Breastfeeding

Breastfeeding is promoted throughout the developing world for the many health benefits that it provides to children – natural immunity to basic diarrheal and respiratory diseases, vital nutrients for development, and a variety of other benefits. Breastfeeding also benefits mothers by providing a period of pastpartum infertility, reducing the risk of pregnancy and short birth intervals. In recent years, however, breastfeeding has also been linked to transmission of HIV from mothers to babies.

Ever Breastfeeding and Initiation of Breastfeeding

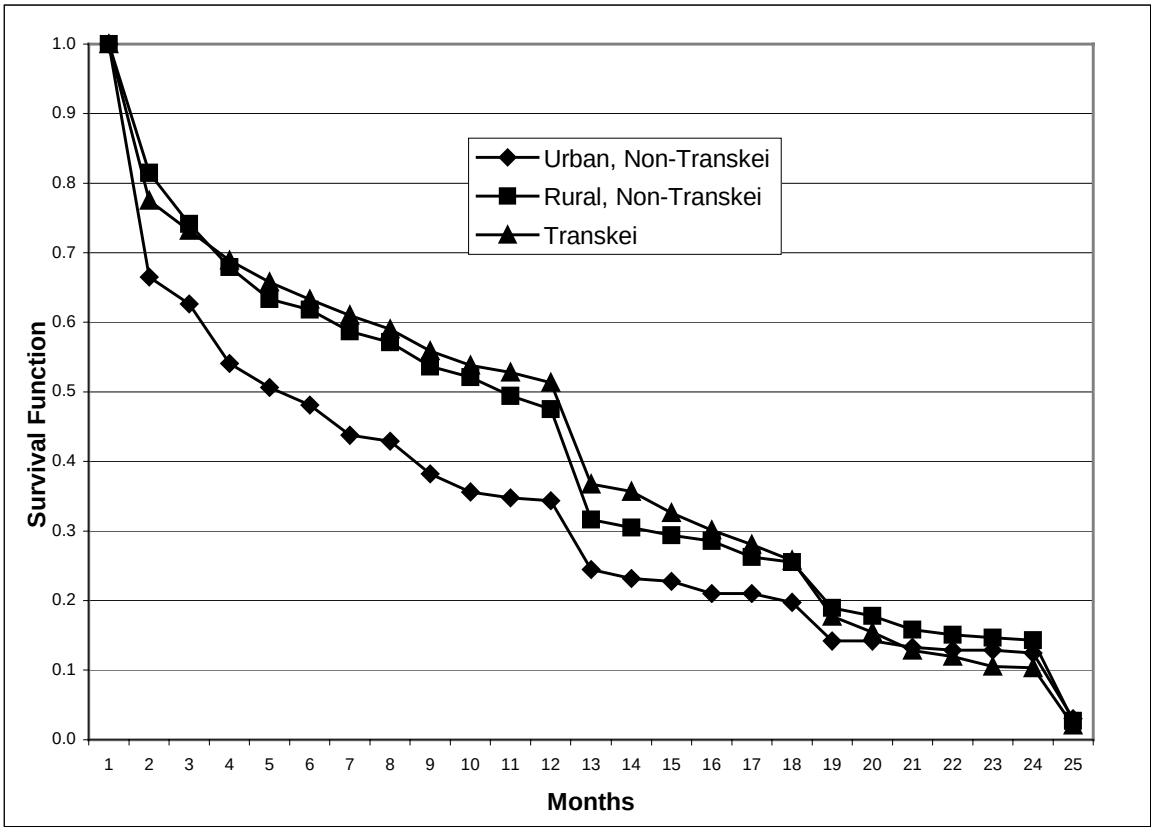
In Eastern Cape, 88 percent of children born within the past five years have been breastfed, including virtually identical proportions of boys and girls (Table A5.5). Children in rural areas were slightly more likely to be breastfed than children in urban areas, perhaps due to the slightly lesser access to alternatives to breastfeeding in rural areas. Breastfeeding rates were higher in Alfred Nzo, Chris Hani, Oliver Tambo and Western District. Breastfeeding was slightly lower among children of women with at least a Standard 10 education, among white children, and among children in the upper two asset quartiles.

Breastfeeding and Infant Feeding Practices

Current World Health Organization guidelines recommend exclusive breastfeeding for children up to age 6 months and partial breastfeeding with complementary foods children beyond 6 months of age. Almost no children in the Eastern Cape were exclusively breastfed even before 4 months of age. Breastfeeding prevalence was over 80 percent for children 3 months of age and younger, declining to 67 percent for children age 6 to 9 months (Table A5.6). Among children 3 months or younger, 72 percent were receiving baby formula in addition to breastfeeding, while an additional 43 percent were receiving plain water.

Breastfeeding duration varied substantially by region of residence. In urban non-Transkei, the median duration of breastfeeding was only 5 months. In rural non-Transkei areas and the former Transkei, the median breastfeeding duration was significantly longer – 10 and 12 months respectively. The survival curve shown below for breastfeeding duration indicates that at 3 months, only 54 percent of urban non-Transkei children were being breastfed as compared with around 70 percent of children in rural and former Transkei areas.

Figure 5.11 Survival Function for Breastfeeding Duration



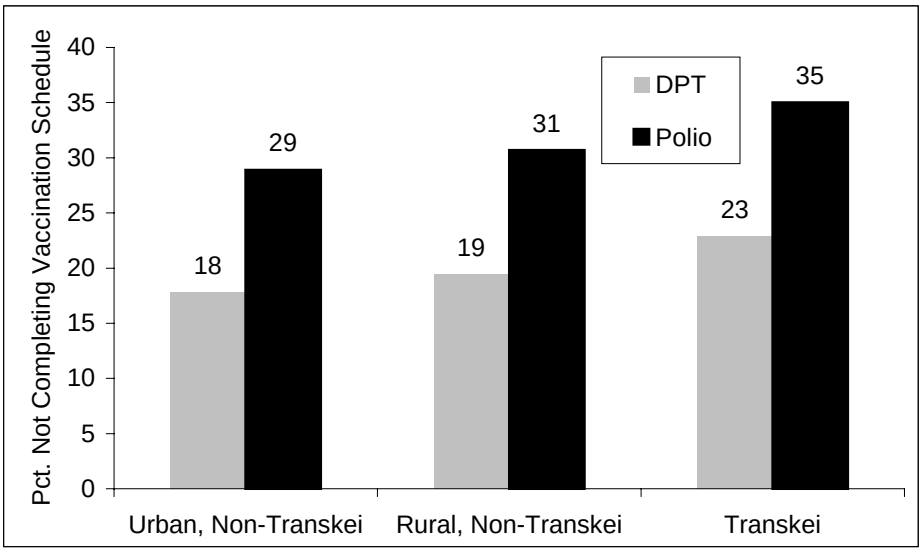
5.5 Childhood Immunizations

The basic childhood immunizations include one BCG vaccination against tuberculosis at birth; three doses of the DPT3 vaccine at 6 weeks, 10 weeks, and 14 weeks to prevent diptheria, pertussis, and tetanus; three doses of polio vaccine simultaneous with DPT3; and a measles vaccine at 9 months. South Africa also provides immunization coverage for Hepatitis. Immunization coverage for children born in the past 5 years was collected in the SADHS either by presentation of a vaccination card or responses provided by mothers.

Overall, approximately half of children aged 12 to 23 months – 50.7 percent – had been fully vaccinated against the basic childhood illnesses (Table A5.7). The proportion of fully vaccinated children was nearly two-thirds higher in Western District (74.7 percent) than in Alfred Nzo (46.8 percent) and Oliver Tambo (46.9 percent). The proportions were also higher among children of more educated mothers, in urban areas, and in higher income quartiles. Overall, 96 percent of children had received the BCG vaccination, 68 percent had received DPT3, 61 percent had received polio 3, 75 percent had received a measles vaccination, and 60 percent had received hepatitis B3. However, considerable dropout rates were observed. Almost 87 percent of children got their first polio but only 61 percent completed the series. Over 90 percent received their first

DPT3 but only 68 percent got all three. Eighty percent received their first hepatitis B but only 60 percent got their third.

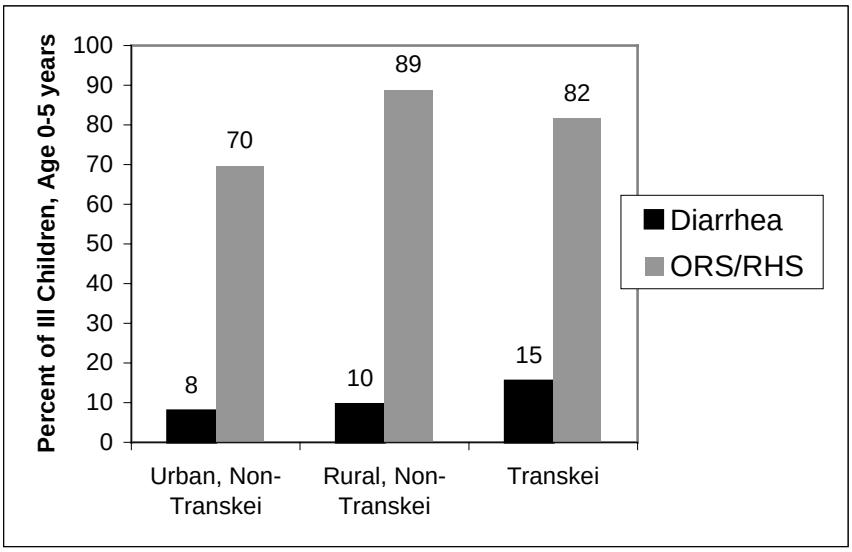
Figure 5.12 Dropout Rates for DPT3 and Polio by Residence



5.6 Diarrheal Diseases and Acute Respiratory Infections

Childhood diarrhea is a frequent cause of morbidity and mortality among children. It is readily addressed by giving children low-cost oral rehydration solutions. In Eastern Cape, approximately 12.7 percent of children under age 5 were reported to have experienced diarrhea in the two weeks prior to the survey (Table A5.8). This was similar to the national average of 13.2 percent of children. Diarrhea prevalence was highest in the former black homelands in the district councils of Ukhahlamba (23.1 percent), Alfred Nzo (21.1 percent), and Oliver Tambo (14.0 percent). Boys were more likely to have diarrhea than girls. Boys were also more likely to receive either ORS packets or home solution. Overall, nearly 60 percent of children received either ORS packets or a recommended home solution. In general, except for children of women with no education, children of mothers with more education were less likely to have diarrhea and more likely to receive some form of oral rehydration therapy. While diarrhea prevalence was higher in the former Transkei than elsewhere, treatment with ORS or recommended home solutions was also higher than elsewhere (Figure 5.13). In urban areas, many children were taken instead to medical providers who provided alternative medical treatments, such as injections or pills.

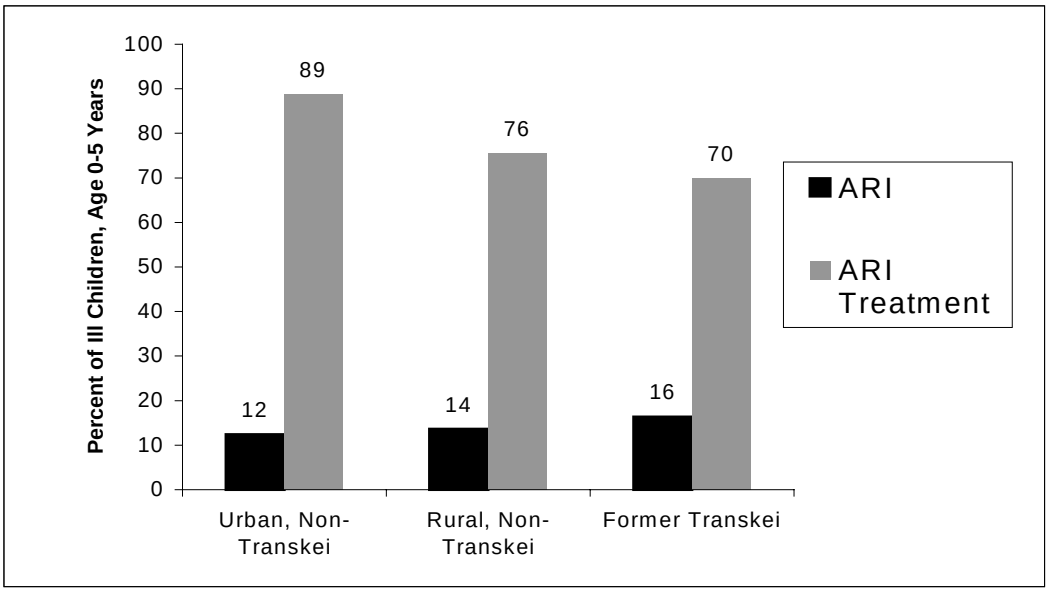
Figure 5.13 Diarrhea Prevalence and Treatment with Oral Rehydration Salts (ORS) or Recommended Home Solutions (RHS)



ARI prevalence in the past month among children under age 5 was approximately 15 percent (Table A5.9). The differences in prevalence among urban, rural, and former Transkei areas were slight (Figure 5.14). Very few differences were also noted between boys and girls. ARI prevalence was highest in Alfred Nzo and lowest in Ukhahlamba. Prevalence was slightly lower in higher wealth groups and among children whose mothers were working.

Treatment at modern medical providers – either government or private medical – was higher by 19 percentage points in urban areas than in the former Transkei. Working mothers were more likely to take their children for modern medical care, particularly to private medical care (47.6 percent versus 19.3 percent). Overall, 76 percent of children were taken to modern medical facilities for care. The majority went to a government clinic or hospital, but 25 percent went to a private clinic, hospital, or doctor. Children in higher income quartiles were four times as likely to go to a private facility as a child in the lowest income quartile.

Figure 5.14 Prevalence of Acute Respiratory Infections and Percent of Ill Children Taken for Medical Care



CHAPTER 6. ADULT HEALTH

The adult questionnaire collected information on a variety of adult health problems and behaviors. Specifically, information was collected on use of health services, family medical histories, chronic ailments, dental health, occupational health, medications, and habits and lifestyle. In addition, anthropometric data were collected on an interviewed person's height, weight, blood pressure, peak expiratory flow rate (PEFR) and pulse. Combining this information, it was possible to link a variety of clinically measured data with socio-economic and socio-demographic information. The result is a unique epidemiological situation of a society simultaneously experiencing morbidity from both communicable diseases and chronic diseases generally evident further along in the epidemiological transition.

Obesity and Hypertension: Nearly half of the Eastern Cape population was classified as overweight (24.2 percent) or obese (21.1 percent). The prevalence of obesity was considerably higher among women, individuals who were wealthier, and adults who lived in urban non-Transkei areas. Nearly one fifth of the adult population was classified – either by measurement or because they were taking medication – as having hypertension. In multivariate logistic estimations, hypertension was associated with older adults, higher levels of education, or with being white or Asian and being in urban areas (relative to being in the former Transkei). Diabetes was reported by approximately 3 percent of men and 4 percent of women.

STD Symptoms: Approximately 14 percent of men aged 15+ reported symptoms of a genital discharge syndrome (GDS); 4 percent reported symptoms of genital ulcer syndrome (GUS). The odds of GDS were higher among older men and men with a Sub A- Standard 3 education and men who smoked or drank, but were lower among men in the former Transkei.

Tuberculosis: Approximately 4 percent of women and 6 percent of men reported having ever had at least one episode of TB confirmed by clinic personnel, and 22 percent of those occurred in the past year. Reporting of TB was higher among poor and less educated adults.

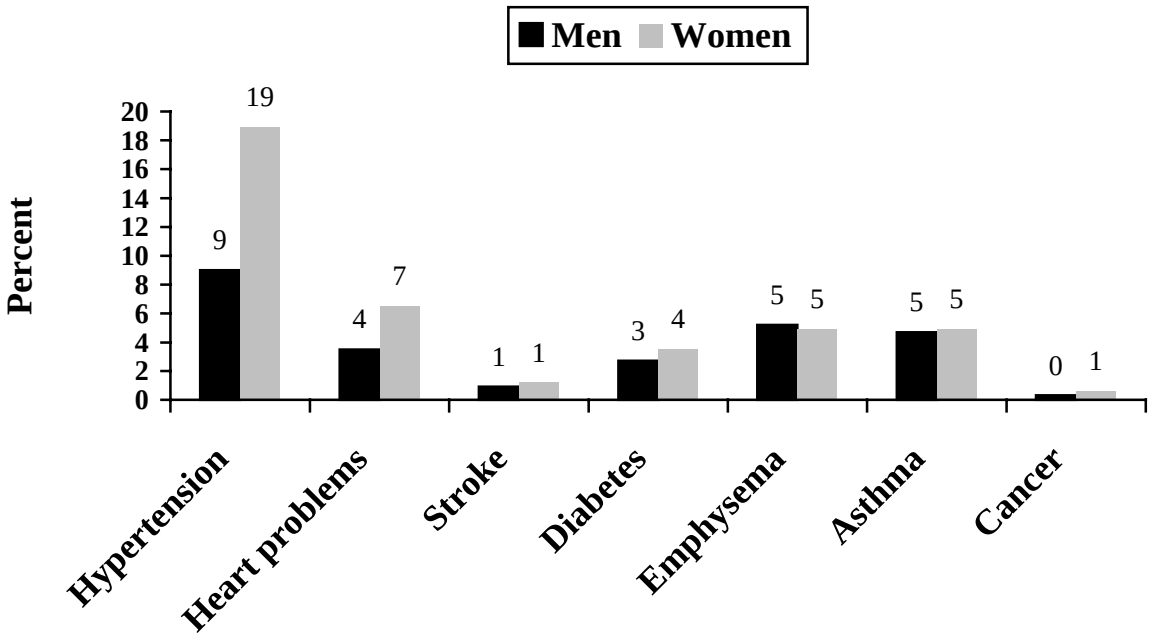
Adult Curative Care: A significant proportion of adults (18 percent) reported having used a government hospital or clinic in the past month, but a significant proportion also reported having used a private doctor, hospital, or clinic (12 percent). Satisfaction was higher with private providers. Use of private care was positively correlated with income.

Lifestyle: Close to 40 percent of men and 10 percent of women reported that they smoke. Sixty percent of men and one-fifth of women reported that the drink either daily or on weekends. Smoking rates were lower in the former Transkei than elsewhere, but drinking rates were higher.

6.1 Chronic Disease: Self Reports

All respondents were asked whether they had been told by a health worker that they had one of the following conditions: high blood pressure; heart attack or angina; stroke, high blood cholesterol, or fats; diabetes or blood sugar; emphysema or bronchitis; asthma; or cancer. The most commonly reported conditions were high blood pressure (15 percent), heart attack/angina (5 percent), emphysema/bronchitis (5 percent), asthma (5 percent), and diabetes (3 percent). Figure 6.1 shows the prevalence of main conditions by sex. Overall, women more frequently reported chronic conditions than men (27.0 percent and 18.2 percent respectively reporting at least one chronic condition). As expected, the burden of chronic diseases had a strong relationship with age: 42.6 percent and 46.9 percent of respondents 50-59 years and 60 years and over respectively had at least one chronic condition.

Figure 6.1 Prevalence of Self-reported Chronic Conditions by Sex



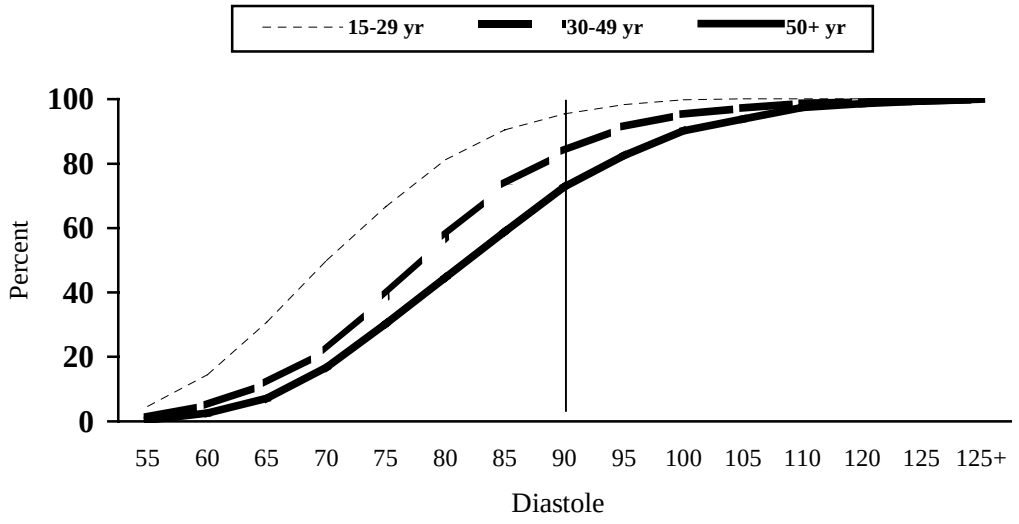
Apart from age, most socio-economic and socio-demographic variables did not have significant association with the prevalence of self-reported chronic conditions. Only two variables were significant in a multivariate analysis with reporting of any chronic conditions as the dependent variable: white men and urban men have significantly higher risks of chronic diseases.

6.2 Chronic Disease: Hypertension Measurements

Following the interview on issues related to adult health, blood pressure of men and women aged 15 years and over was measured. Each individual was measured three times, and the average of the three measurements was used as the final measure of blood pressure.

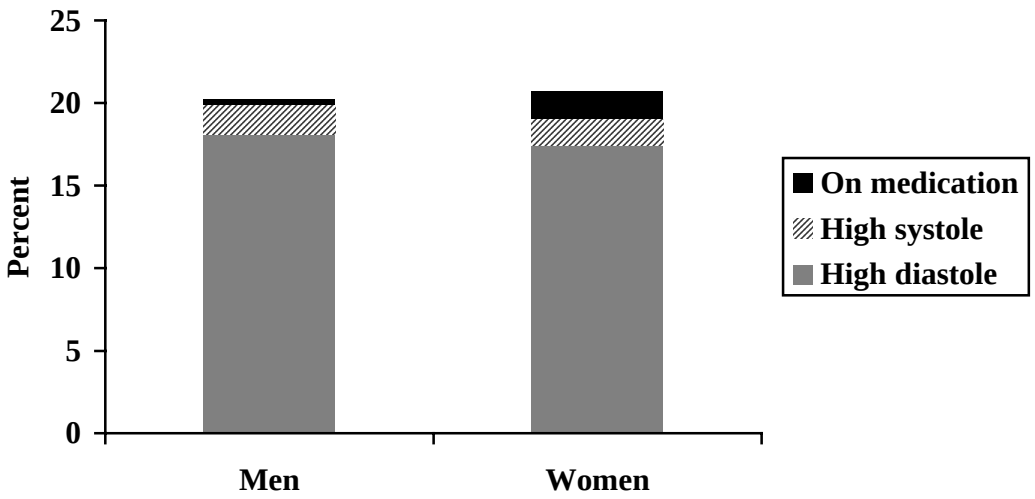
Figure 6.2 presents distributions of diastolic blood pressure by age (15-29, 30-49 and 50 years and over) for men and women. High blood pressure was much more common in men and women 30-49 years than in those under 30 years. Respondents 50+ years had even higher blood pressure than those aged 30-49 years.

Figure 6.2 Cumulative Distribution of Diastolic Blood Pressure by Age among Men and Women



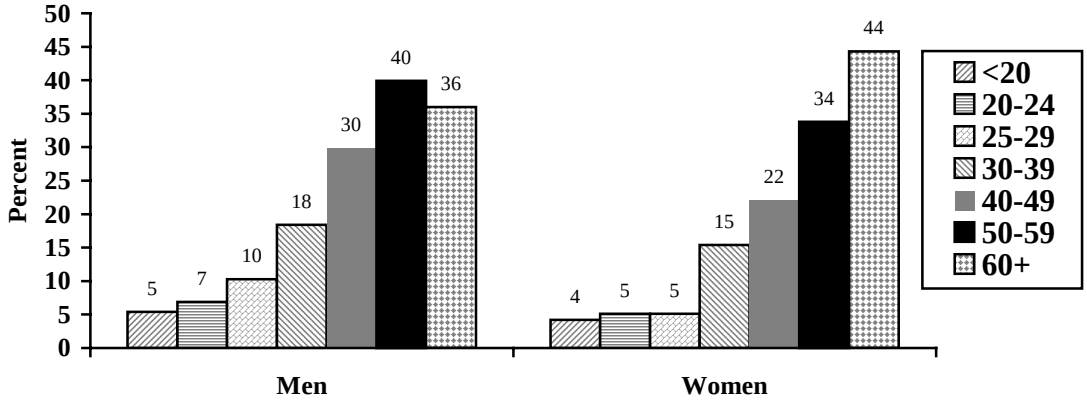
In this analysis, hypertension is defined as having a diastolic pressure of at least 90mm Hg or having a systolic pressure of at least 160mm Hg. The latter is referred to as isolated systolic hypertension if accompanied by normal diastolic blood pressure. Furthermore, respondents who said they were on anti-hypertensive medication were considered to have hypertension, even if they had normal blood pressure during the survey. Figure 6.3 presents the percent distribution of the three measures of hypertension. Among men, 20.2 percent had hypertension, including 18.1 percent with high diastolic blood pressure, 1.8 percent with isolated systolic hypertension and 0.3 percent on anti-hypertensive drugs but who did not report hypertension. The corresponding figures for women were very similar: 20.6 percent have hypertension, including 17.4 percent with diastolic hypertension, 1.6 percent with systolic hypertension and 1.7 percent on medication.

Figure 6.3 Prevalence of High Blood Pressure among Men and Women



In the analysis of the determinants of high blood pressure, the three types of hypertension were combined. The complete tables for hypertension in men and women can be found in Table A6.1 and A6.2. Figure 6.4 shows a rapid increase in the prevalence of hypertension by age for both sexes, starting at about 30 years of age.

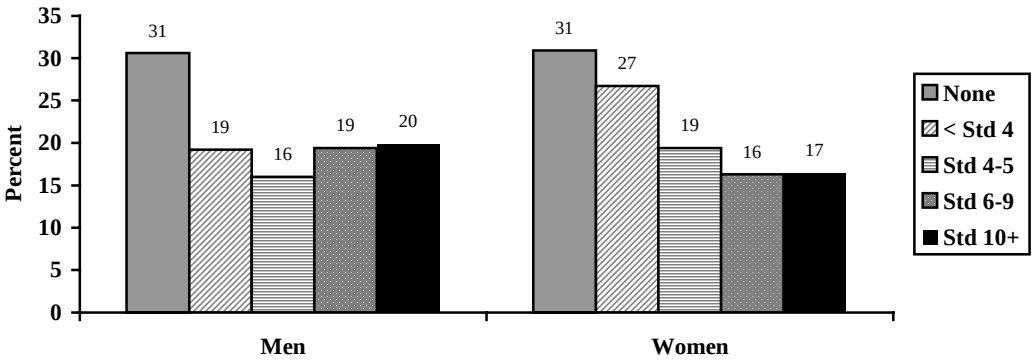
Figure 6.4 Prevalence of High Blood Pressure among Men and Women by Age Group



Among men, the highest prevalence was observed at 50-59 years, when 40 percent of men have hypertension. Among women, a peak was reached in the oldest age group (44 percent among 60 years and over).

There was also an association between level of education and hypertension, which was more common among men and women with no education than among those with education (Figure 6.5). Such an association was not observed with economic status based on household assets.

Figure 6.5 Prevalence of High Blood Pressure among Men and Women by Level of Education

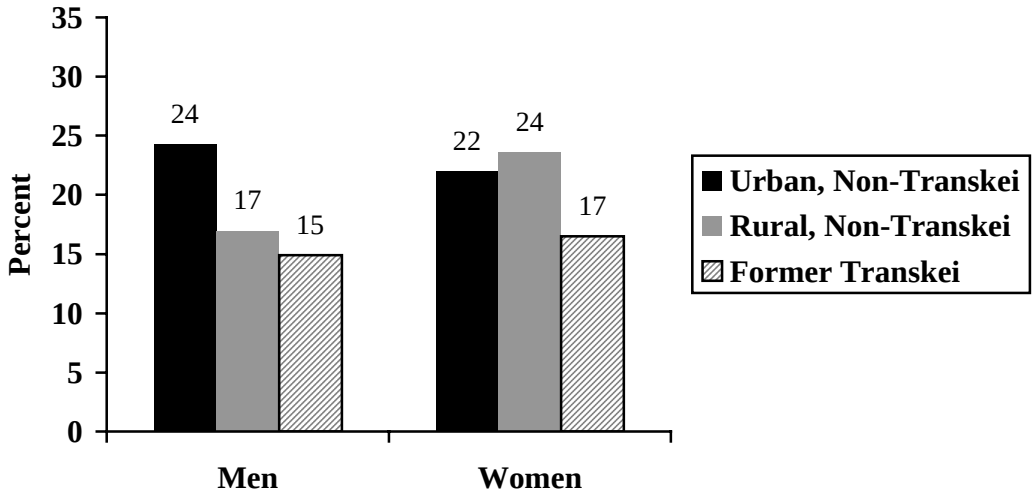


Women and men in the poorest wealth quartile did not have higher levels of hypertension than those in the highest quartile.

Hypertension was less common among adults in the former Transkei area than among adults elsewhere in the province (Figure 6.6). Rates of hypertension were, therefore, lower in Transkei's district councils Alfred Nzo and Oliver Tambo. Urban men had markedly higher levels of hypertension than their rural counterparts. Among women, no such difference was observed.

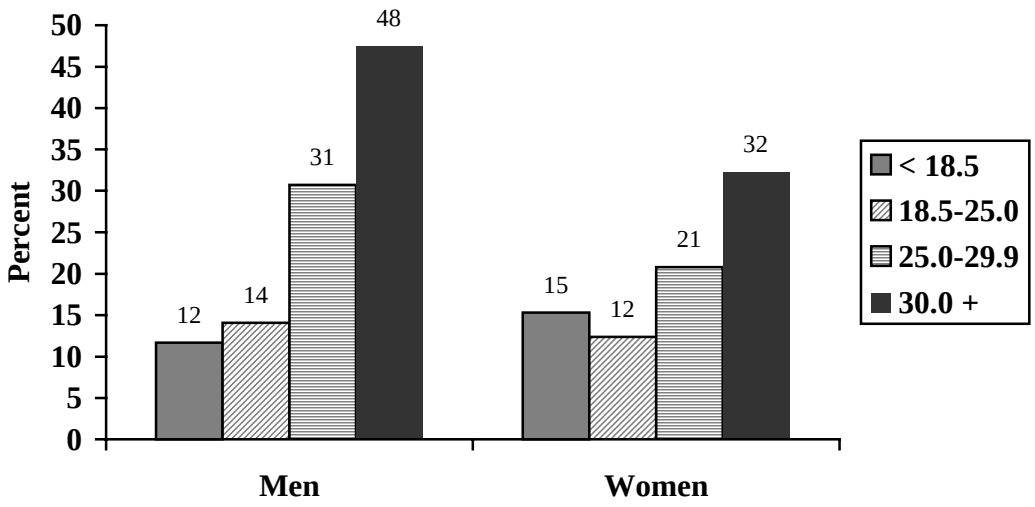
The prevalence of hypertension among black men and women was 18.0 percent and 20.5 percent respectively. Colored, and especially, white men had higher levels of hypertension, but numbers were small. There were few differences among women of different races.

Figure 6.6 Prevalence of High Blood Pressure among Men and Women by Residence



The co-occurrence of hypertension and selected risk behaviors was examined. In general, men and women who smoked, drank alcohol, or ate very salty food did not have higher levels of hypertension. There was, however, a strong association between body mass index (BMI) and hypertension, shown in Figure 6.7. Men and women who were underweight had the lowest prevalence of hypertension, while hypertension rapidly increased among men and women who were overweight and obese.

Figure 6.7 Prevalence of High Blood Pressure among Men and Women by BMI



To assess the most important underlying socio-economic and socio-demographic variables affecting the risk of hypertension age, education, residence, wealth status, and race were included in a multivariate logistic regression with hypertension as the dependent variable (Tables A6.1 and A6.2). Age, residence, and race had significant effects among men (Figure 6.8). The largest odds ratios were observed for age with rapidly increasing risk over age 30. Men living in urban areas had higher risks of hypertension than men living elsewhere, and colored men had significantly higher risk than blacks. Adding obesity to the model for males did not change the effects of age and race of the odds of hypertension, but made the effect of urban residence stronger (results not shown). Among women, the effect of age on hypertension was also strong, with rapidly increasing odds ratios at ages 30 and over (Figure 6.9). The only other significant effect concerned education, with more educated women having higher odds of hypertension than women with less education. This effect became non-significant when obesity was introduced in the model (data not shown). This may suggest that more educated women had higher risks of hypertension because they were more obese, but a third factor associated with education affecting obesity and hypertension might also have played a role.

Figure 6.8 Odds Ratio of Hypertension by Socio-economic and Socio-demographic Variables, Men (with 95% Confidence Limits), Multivariate Logistic Regression

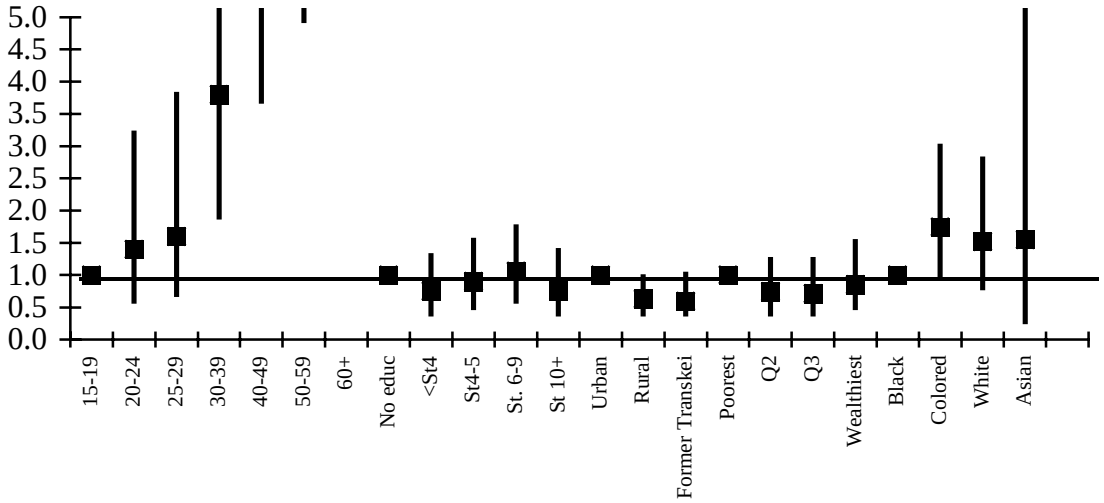
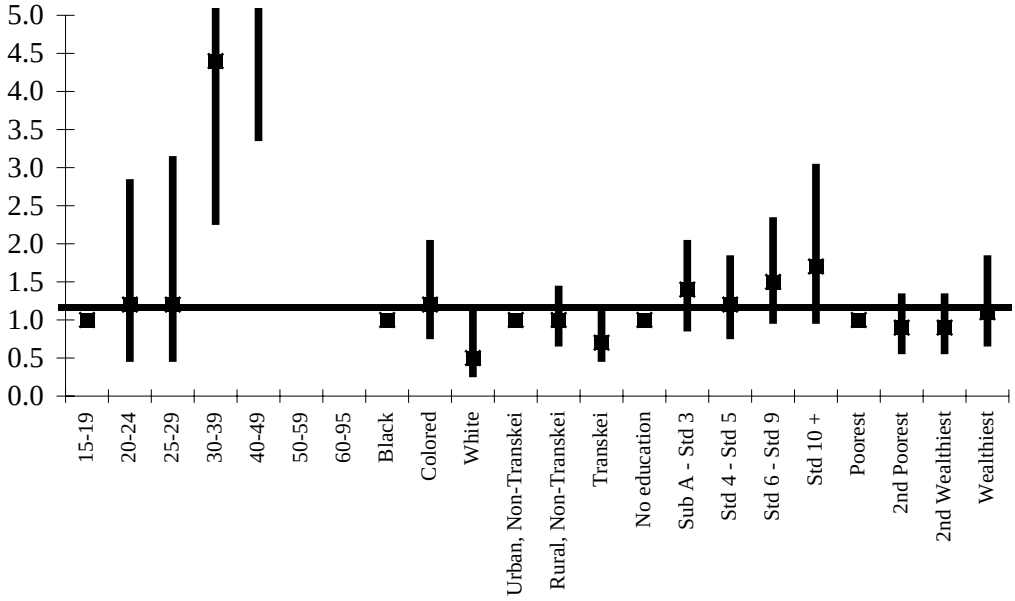


Figure 6.9 Odds Ratio of Hypertension by Socio-economic and Socio-demographic Variables, Women (with 95% Confidence Limits), Multivariate Logistic Regression



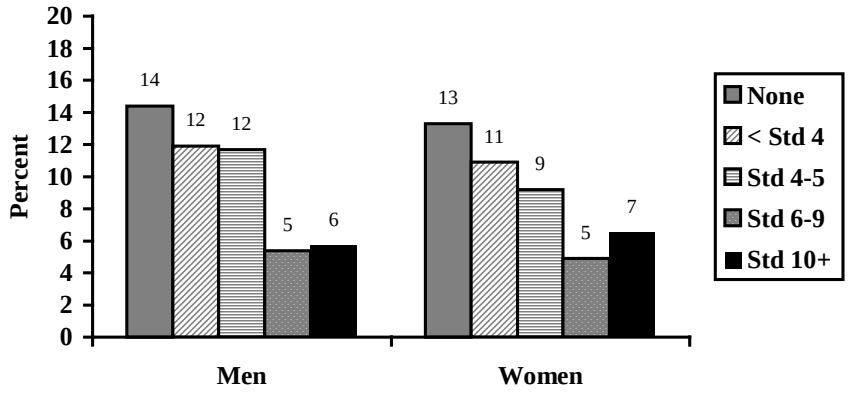
The prevalence of hypertension according to self-reports underestimates the prevalence of hypertension according to measurement at the time of the survey. Nine percent of men and 18.9 percent of women reported that they had high blood pressure, while the measurement indicated that about 20 percent of men and women were hypertensive. A large proportion of those measured as hypertensive at the time of the survey did not report hypertension: 73.2 percent of men and 52.2 percent of women. Among those who were measured as hypertensive, only 3.9 percent of men and 15.7 percent of women were on anti-hypertensive medication, and only 2.2 percent and 8.4 percent had normal blood pressure. Finally, among those who were using anti-hypertensive drugs, 44 percent of men and 50 percent of women had normal blood pressure at the time of the survey.

6.3 Chronic Obstructive Pulmonary Disease

The occurrence of chronic obstructive pulmonary disease was assessed in two ways. Respondents were asked if they had emphysema/bronchitis and asthma, and the peak expiratory flow rate (PEFR) was measured at the end of the interview. The PEFR measures the fastest rate at which air can move through the airways during a forced expiration. In the case of obstructive lung disease, the PEFR is reduced.

The responses on the presence of emphysema/bronchitis and asthma were combined into one variable. Appendix Tables A6.3 and A6.4 summarize the prevalence of chronic obstructive pulmonary disease by socio-economic and socio-demographic variables for men and women. As expected the prevalence of disease increased with age. Figure 6.10 shows that less education was associated with higher reported rates of chronic lung disease.

Figure 6.10 Prevalence of Chronic Obstructive Pulmonary Disease among Men and Women by Level of Education



After controlling for all other socio-economic and demographic variables, education only had a significant effect on the risk of chronic obstructive lung disease in women (results not shown). Men and women in the former Transkei did not have significantly higher rates of pulmonary disease.

The PEFR for the Eastern Cape was considerably lower than would be expected on the basis of standard values. The mean PEFR for men (on average 39 years old with a height of 166 cm) was 347 l/min, which was considerably lower than the expected value of about 500. Among women (average age 42 years, mean height 157 cm) the mean PEFR was 292 l/min, compared with a reference value of about 365. It is not clear why Eastern Cape men and women have lower PEFR than the reference population.

6.4 Obesity

To assess the nutritional status of the population, a BMI was calculated for each respondent by dividing weight in kilograms by height in kilometers squared. The range of BMI values are classified as follows: lower than 18.5 is underweight, 18.5 to 24 is normal, 25 to 29 is overweight and 30 and greater is obese.

Paradoxically, a significant proportion was overweight or obese (about 45 percent) in the Eastern Cape, while some remained underweight (about 8 percent). Table 6.1 and Figure 6.11 illustrate that women were considerably more likely than men to be obese (28.8 percent and 9.4 percent, respectively), while a sizeable proportion of both women and men were overweight (26.3 and 21.0 percent, respectively). In contrast, men were about twice as likely as women to be underweight.

Table 6.1 Percent distribution of men and women by BMI

	Body Mass Index (BMI)					
	<18.5 (Underweight)	18.5-24 (Normal)	25-29 (Overweight)	30+ (Obese)	Total%	N
Men	11.6	58.0	21.0	9.4	100.0	1,310
Women	5.9	39.0	26.3	28.8	100.0	1,978
All	8.2	46.6	24.2	21.1	100.0	3,288

The distribution of weight classification for men and women according to selected background characteristics appears in Appendix Tables 6.5 and 6.6. Age was a strong predictor of being overweight and obese for both sexes, though high BMI affected a larger proportion of women than men in each age category (see Figure 6.12). About one-third of women in the youngest age group were either overweight or obese, and this percentage climbed with age, peaking at about 70 percent of women in their 50s. Amongst women 30 to 60 years old, about 40 percent of

women were classified as obese with an additional 30 percent of women classified as overweight. The pattern in men followed that in women, though it was less severe. High BMI peaked in the 50s for men, with 26.1 percent overweight and 20.0 percent obese. In contrast to women, men were more likely to be overweight than obese.

Figure 6.11 Percent of Men and Women in Each Weight Classification

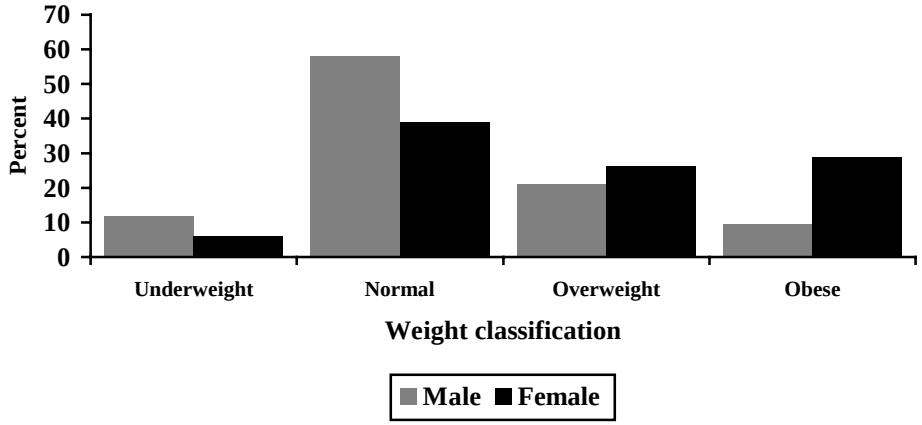
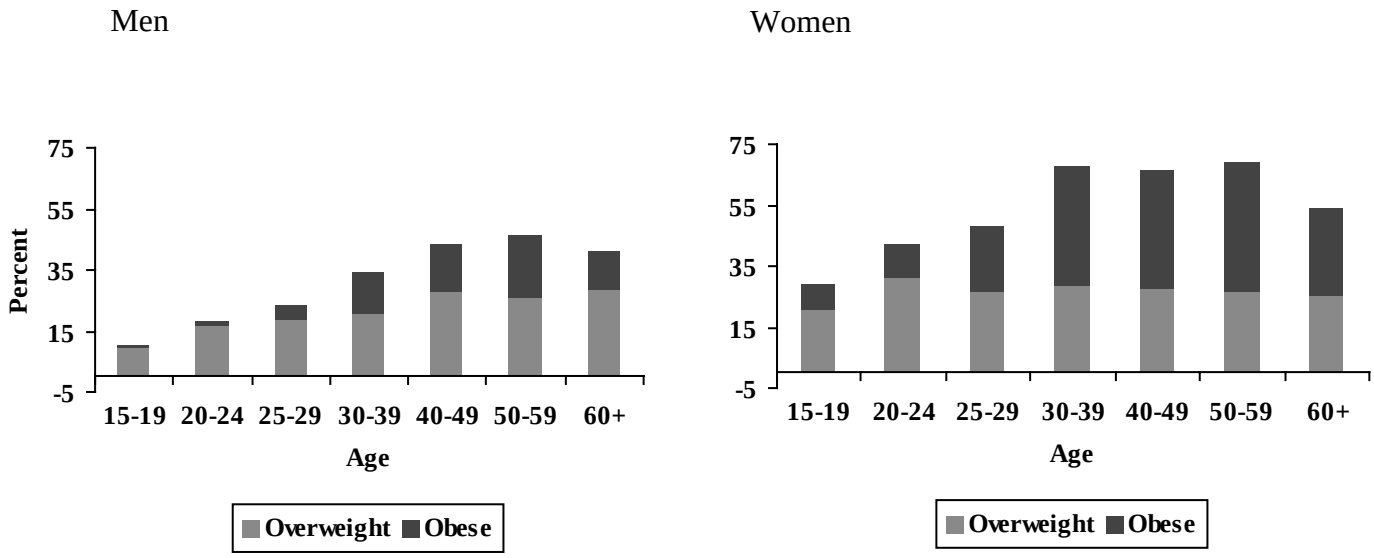
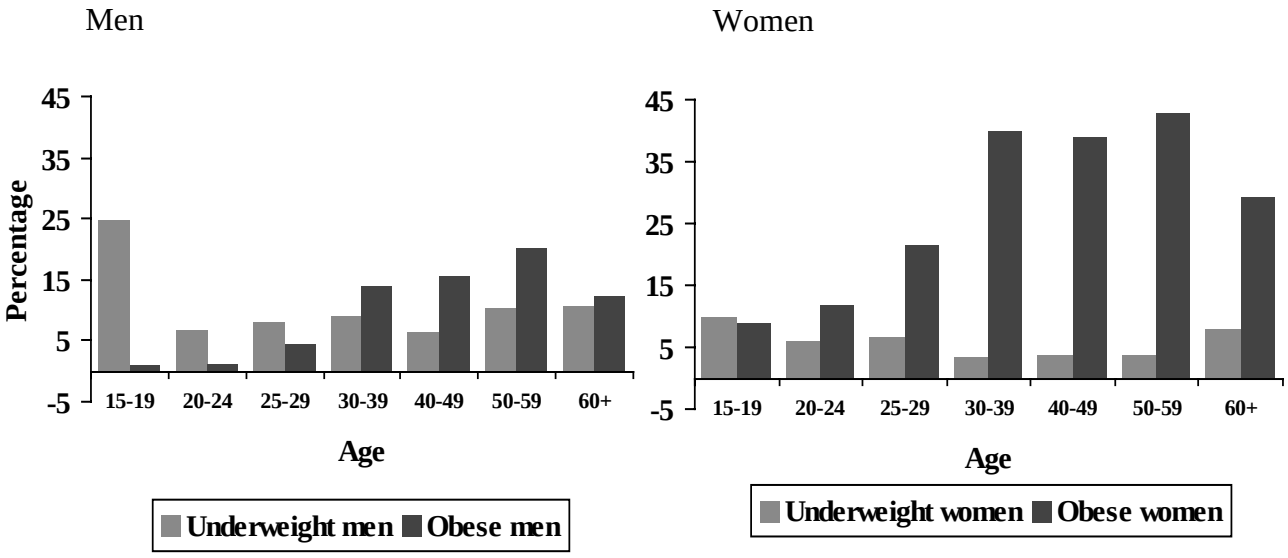


Figure 6.12 Percent Distribution of Men and Women Who Were Classified as Overweight or Obese, by Age



While the association between age and obesity was observed in both sexes, yet heightened in women, being underweight tended to decrease with age and was more common in men (Figure 6.13). Most affected were the youngest males, as nearly one-quarter of males 15-24 were underweight, while only about 10 percent of their female counterparts fell in this category.

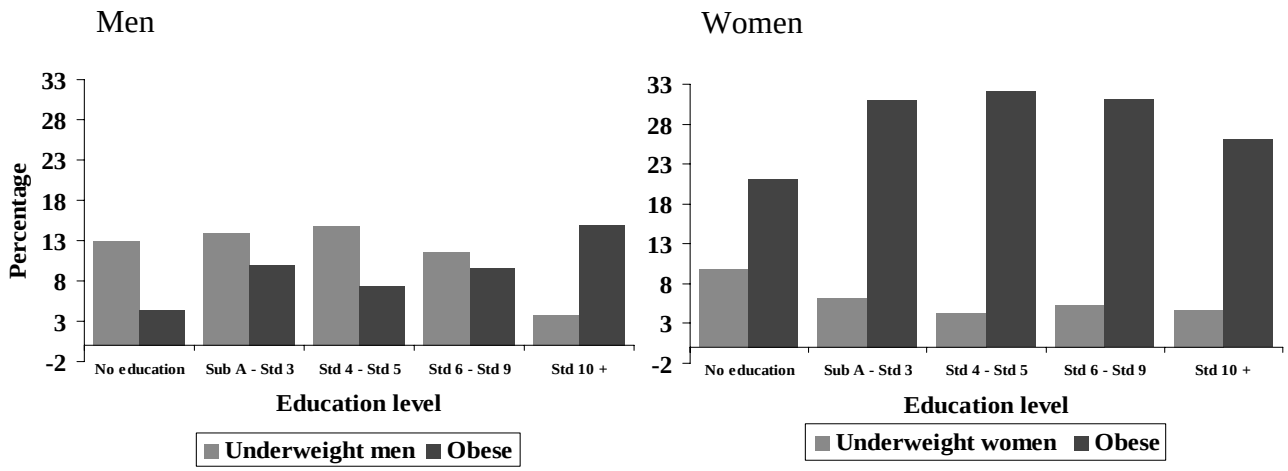
Figure 6.13 Percent of Underweight and Obese Men and Women, by Age



Estimates of weight by race were unstable due to small sample sizes, though the data indicated that being obese was very common among Asian/Indian men (22.2 percent) and women (50.0 percent). These percentages were high compared with rates of obesity in men and women who were white (18.8 percent and 30.1 percent, respectively), colored (11.4 percent and 23.8 percent, respectively) and black (8.2 percent and 29.1 percent, respectively). Being underweight also occurred at higher rates in Asian/Indian men and colored men and women.

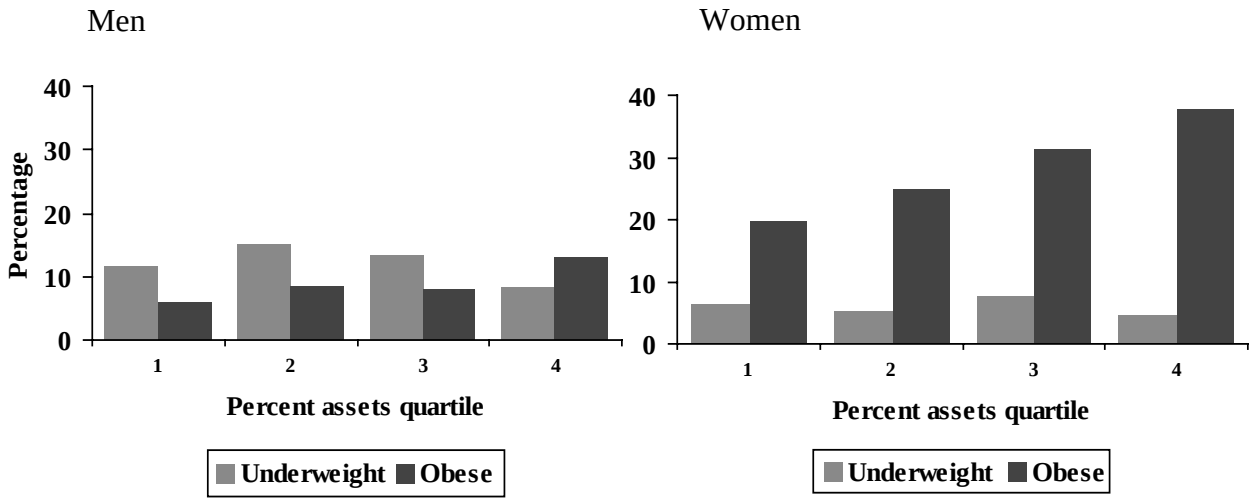
The association between education and prevalence of obesity was not uniform (Figure 6.14). Prevalence of obesity was more than 20 percent among women with no education, and women who had some education were even more likely to be obese (percentages ranged from about 28 percent to 32 percent depending on education level). Though prevalence of obesity was lower in men than in women, the effect of education was more evident. A smaller proportion of men with no education were obese (about 4 percent) compared to those with the highest level of education (15 percent). Being underweight was more likely in men and women with no education (12.7 percent and 9.7 percent, respectively) than those with the highest education level (about 5 percent). It is interesting to note that while the proportion of underweight women declined steadily by education level, only men who had received the highest level of education appear to be protected from being underweight.

Figure 6.14 Percent of Underweight and Obese Men and Women, by Level of Education



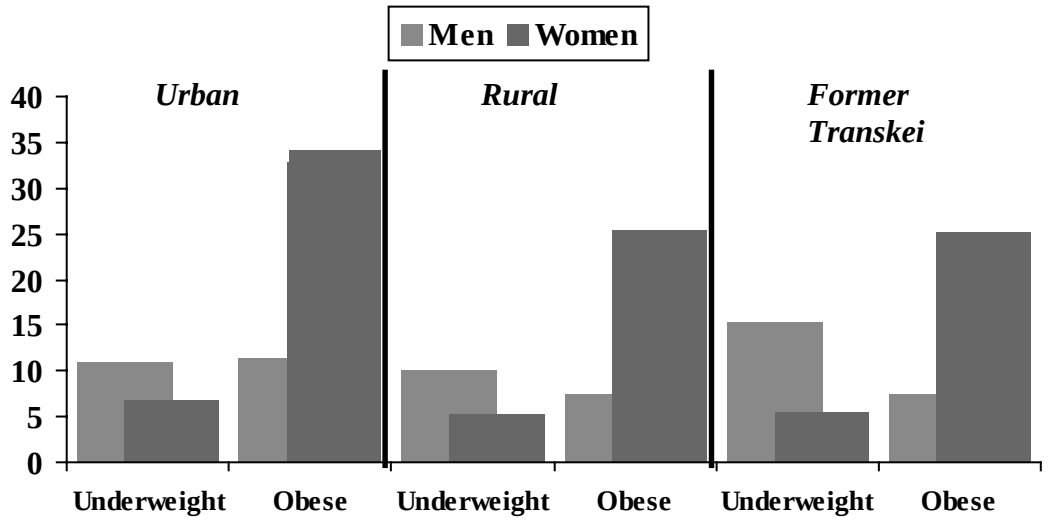
Income had a greater impact than education on obesity in women, with the prevalence of obesity women increasing steadily from the first (poorest) quartile (20 percent) through the 2nd, 3rd and 4th quartiles (25.0 percent, 31.2 percent, and 37.8 percent, respectively) (Figure 6.15). A modest linear relationship was observed in men, though at lower prevalence, with the prevalence of obesity in men increasing from the lowest to the highest quartile (6.0 percent and 13.2 percent, respectively). In both men and women, the proportions underweight slightly decreased as wealth quartile increased.

Figure 6.15 Percent Underweight and Obese Men and Women, by Wealth Quartile



The proportion underweight or obese was fairly evenly distributed across health regions and district councils, though urban/rural differences can be detected (Figure 6.16). The data were stratified to compare the former Transkei, the largely rural former homeland, with other urban and rural areas in the Eastern Cape. Men and women were more likely to be obese and less likely to be underweight if they resided in non-Transkei urban areas compared with Transkei and with non-Transkei rural areas. In general, populations in Transkei and non-Transkei rural areas shared similar weight distributions. However a slight increase in the proportion underweight and a decrease in proportion overweight was observed amongst men in Transkei compared with both urban and rural non-Transkei areas. Men who lived in the district councils Alfred Nzo and Oliver Tambo, which correspond to the former Transkei, therefore were more likely to be underweight and less likely to be obese.

Figure 6.16 Percent Underweight and Obese Men and Women, Comparing Former Transkei with Other Urban and Rural Areas



Multivariate logistic regression was performed to assess the odds of obesity controlling for key variables including age, race/ethnicity, residence in the former Transkei versus non-Transkei, education level, and wealth status. Appendix Tables A6.5 and A6.6 and Figures 6.17a and 6.17b present point estimates and 95% confidence intervals of the odds ratios for men and women separately.

The strongest association for men and women was the effect of age on obesity, with statistically significant increased risk of obesity after age 25 for women and after 30 for men. At peak risk

were those aged 50-59 years old for both sexes, with men 30 times more likely and women 12 times more likely to be obese than their counterparts in the youngest age groups.

Figure 6.17a Odds Ratio of Obesity by Socio-economic and Socio-demographic Variables, Men (with 95% Confidence Limits), Multivariate Logistic Regression

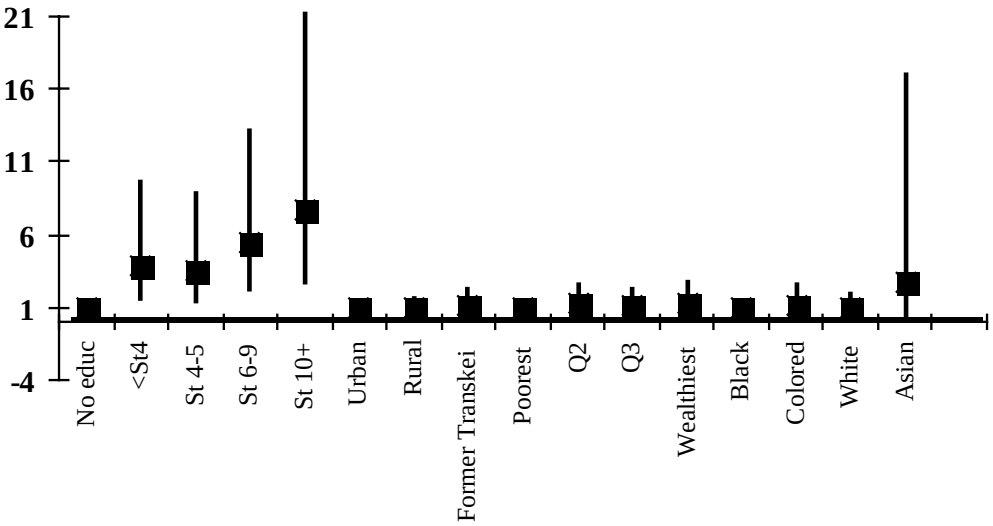
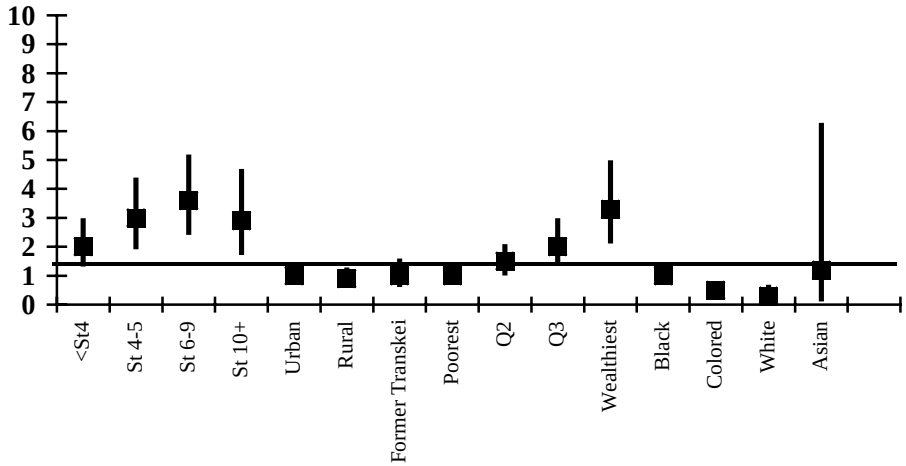


Figure 6.17b Odds Ratio of Obesity by Socio-economic and Socio-Demographic Variables, Women (with 95% Confidence Limits), Multivariate Logistic Regression



Education was another variable that reached statistical significance for both sexes (Figures 6.17a and Figure 6.17b). The relationship was particularly evident in men, with the most educated men nearly eight times as likely to be obese. Women with the second highest level of education have the highest risk, about three times the risk of those with no education. For women alone, other statistically significant variables included income and race. Women in the highest wealth quartiles were more likely to be obese, while white and colored women were less likely to be obese compared to black women. Findings on race must be interpreted carefully due to small sample sizes of non-black groups.

Multivariate regression was also performed to assess the effect of age, race/ethnicity, residence in former Transkei versus non-Transkei areas, education level and wealth status on the odds of being underweight in men and women (Appendix Tables A6.5 and A6.6). Age was the most important predictor of being underweight for men and women. The youngest were most likely to be underweight, and the odds of being underweight continued to decrease at statistical significance. Men in their 50's had 0.4 times the risk of the youngest men, while the oldest women were half as likely as the youngest women. For men, those with the highest level of education had statistically significant decreased odds of being underweight. For women, race was a significant predictor, with colored women more than three times as likely to be underweight than the reference group, black women.

Table 6.2 Percent distribution of various anthropometric classifications of men and women

	Male	Female	All
Waist circumference			
Normal	80.5	39.9	56.0
Increased	11.6	19.5	16.4
Very high	7.9	40.6	27.6
Total	100.0	100.0	100.0
Waist-hip ratio			
Normal	94.9	66.3	77.7
High	5.06	33.7	22.3
Total	100.0	100.0	100.0
Mid-upper arm circumference			
Normal	88.3	73.4	79.3
Obese	11.7	26.6	20.7
Total	100.0	100.0	100.0

Anthropometric measures such as waist circumference, waist-hip ratio, and mid-upper arm circumference were taken of respondents. Measures were classified into normal and high to serve as an alternative indication of prevalence of overweight and obesity in the Eastern Cape. The measures corroborate the increased obesity in women compared with men suggested by the BMI

classification (Table 6.2). Higher percentages of women than men had very high waist circumference (40.6 and 7.9 percent, respectively), high waist-hip ratio (33.7 and 5.1 percent, respectively) and are obese based on classifications of mid-upper arm circumference (26.6 and 11.7 percent, respectively).

6.5 Tuberculosis

Adults were asked if they had ever had tuberculosis and when the episode occurred. Appendix Tables A6.7 and A6.8 present cumulative and current risk of TB for men and women by background demographic and socio-economic characteristics. The proportions of men and women who had ever had TB at the time of the survey were fairly similar (5.8 percent and 4.3 percent, respectively), though the age-specific distributions differed by sex. Figure 6.18 indicates that in men, rates of TB infection increased steadily with age, and from age 40 and older, TB rates ranged from 9 to 11 percent. Like men, rates of cumulative TB infection in women increased steadily from age 30 until it reached a second peak amongst those aged 50 to 59 (8.5 percent). In addition, a peak in percentage infected was first observed amongst women aged 20 to 24, who had an increased percentage of TB compared with their male counterparts (4.4 and 1.4 percent, respectively). This differential was also reflected in slightly higher rates of recent TB infection observed in women than in men in this age group.

Figure 6.18 Percent of Men and Women Who Have Ever Had TB, by Age

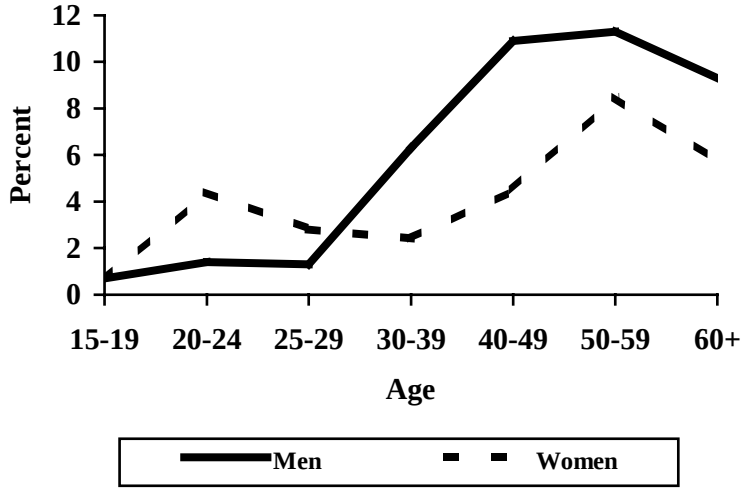
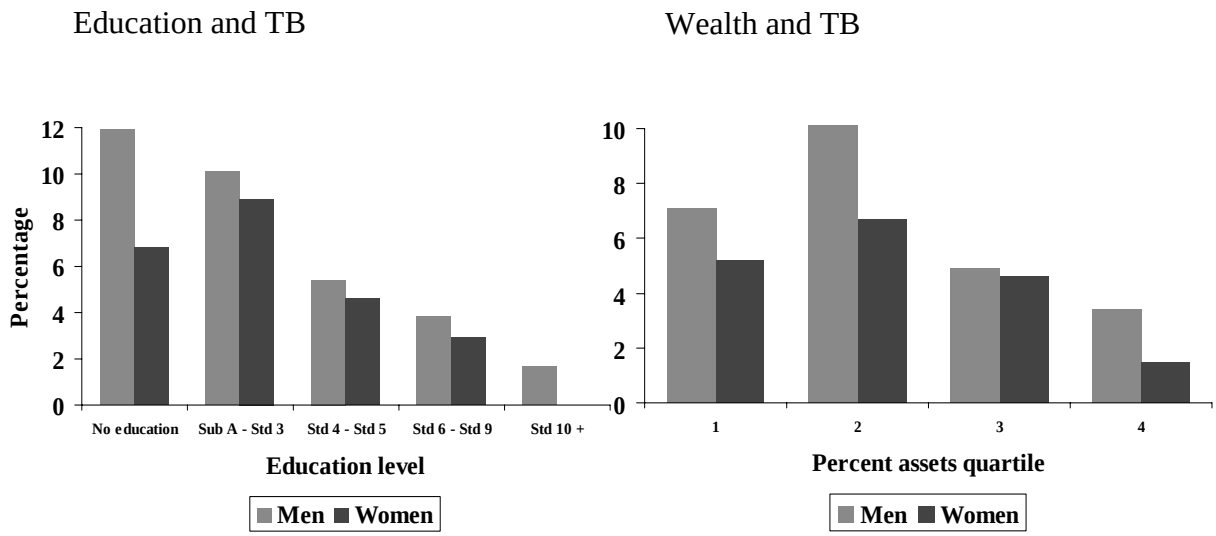


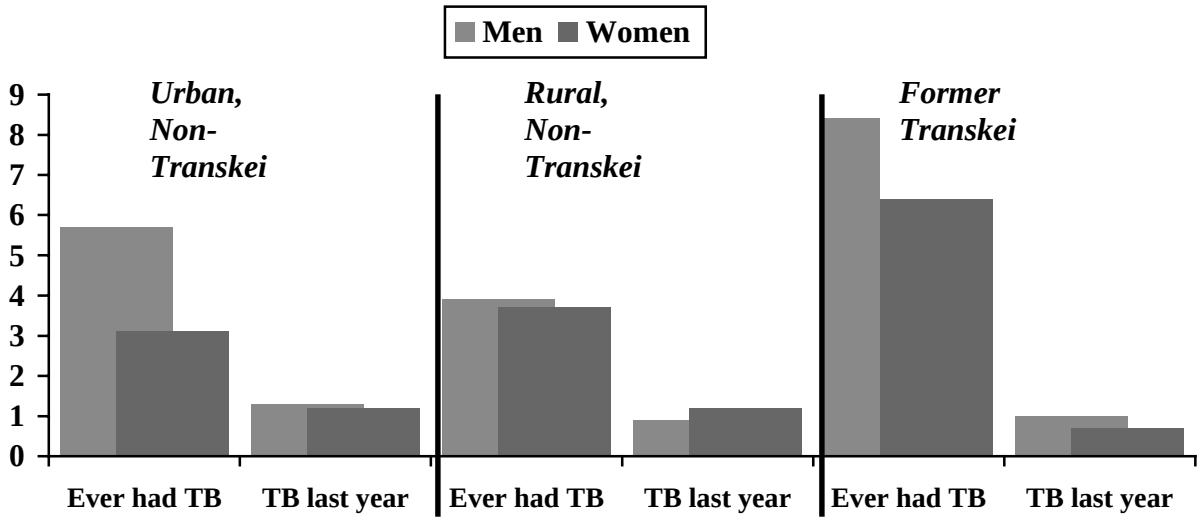
Figure 6.19 demonstrates that an increase in education and wealth, generally, was associated with decreased prevalence of TB. TB rates for men and women in the lowest education level, Sub A-Standard 3 (11.9 and 6.8 percent, respectively) were significantly greater than rates among men and women in with the highest level of education (1.7 and 0.0 percent, respectively). This trend was less dramatic by wealth status.

Figure 6.19 The Effect of Education and Wealth Status on Percentage of Men and Women Who Had TB in the Year Preceding the Survey



There were slight regional differences in rates of TB infection. Figure 6.20 indicates that the percentage of men and women who had ever been infected was higher for those from the former Transkei (8.4 and 6.4 percent, respectively) compared with other rural (3.7 and 3.8 percent, respectively) and urban areas (5.7 and 3.1 percent, respectively). Likewise, the district councils corresponding to the former Transkei area reflected this differential, with high rates observed in district councils Alfred Nzo and Oliver Tambo.

Figure 6.20 Percent of Men and Women Who Have Ever Had TB and Had TB Last Year, Comparing Former Transkei with Other Urban and Rural Areas



TB infection disproportionately affected blacks. Among women, the rate of cumulative infection was concentrated among black women (5.0 percent) while colored, white, and Asian women were virtually untouched by TB (0.5, 0.0, and 0.0 percent, respectively). A greater percentage of black men also reported ever having TB (6.5 percent) compared with men who were colored, white, or Asian (4.9, 1.1 and 0.0 percent, respectively).

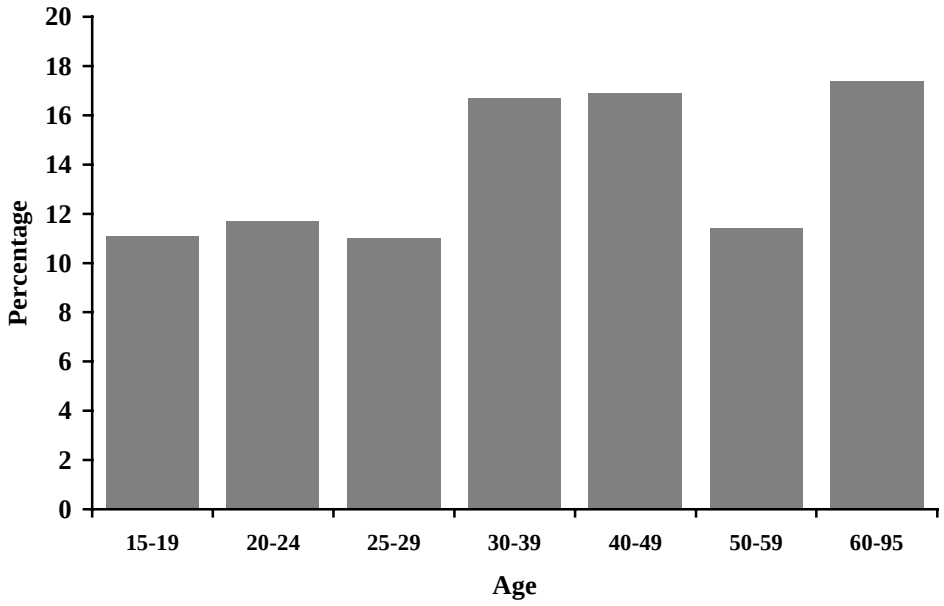
According to multivariate regressions including age, race/ethnicity, residence in former Transkei versus non-Transkei areas, education level, and wealth status, age was a significant predictor of increased risk of TB in both men and women (Tables A6.7 and A6.8). Men after age 30 had more than eight times the risk of TB, while women from 20 to 29, and 40 and older had a significant increase in risk. For men, a statistically significant reduction in risk was observed among men living in non-Transkei rural areas compared with the urban areas.

6.6 Genital Discharge and Genital Ulcer Syndromes

Male respondents were asked whether they had ever experienced symptoms associated with certain STDs. Reports of pain during urination or discharge from the penis were considered signs of GDS, while reports of sores in the genital were considered GUS.

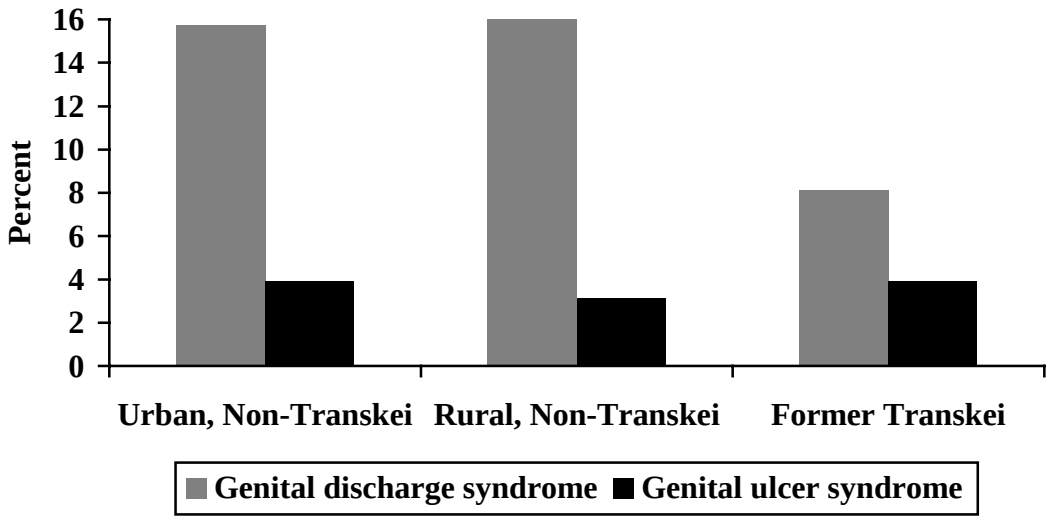
Risk of GDS and GUS are presented in Table A6.9 by background demographic and socio-economic characteristics. Men were more likely to report GDS (14.1 percent) than GUS (3.7 percent). Figure 6.21 indicates that reports of GDS tended to increase slightly after age 30. While about 11 percent of men aged 15 to 29 years reported GDS, percentages of GDS increased to 17 percent in all age groups over 30 years, with the exception of those aged 50 to 59 years.

Figure 6.21 Prevalence of Genital Discharge Syndrome in Men, by Age



Half the percentage of men in the former Transkei reported GDS (8.1 percent) compared with men in other urban and rural areas (about 16 percent) (Figure 6.22). Former Transkei's district councils Alfred Nzo and Oliver Tambo also showed decreased percentages of GDS relative to other districts and municipalities. Reports of GDS were about twice as common in black men (15.5 percent) than in colored men (7.0 percent) or white men (6.5 percent).

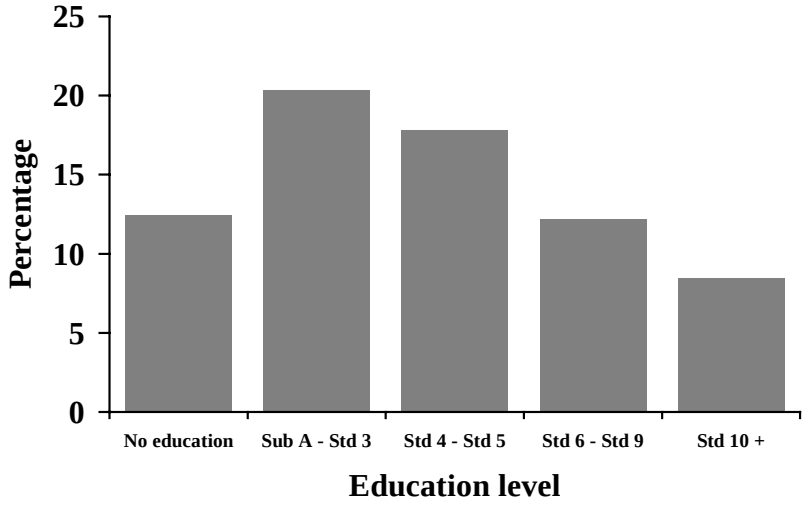
Figure 6.22 Prevalence of Genital Discharge Syndrome (GDS) and Genital Ulcer Syndrome (GUS) in Men, Comparing Former Transkei with Other Urban and Rural Areas



In general, education had an effect on rates of GDS. Those with no education had lower or equal prevalence compared with those who had an education level of Sub A- Standard 9. However, prevalence decreased from those with the lowest level of schooling (Sub A- Standard 3) to those with the highest level (20.3 and 8.4 percent, respectively).

Multivariate logistic regression was performed to assess the odds of GDS in men controlling for key variables including age, race/ethnicity, residence in former Transkei versus non-Transkei, education level, and wealth status (Table A6.9). Men living in former Transkei had a statistically significant decrease in risk of GDS compared with men in urban areas. In addition, men who had the lowest level of education had twice the risk of GDS compared with the reference group, men with no education.

Figure 6.23 The Effect of Education on Percentage of Men with Genital Discharge Syndrome



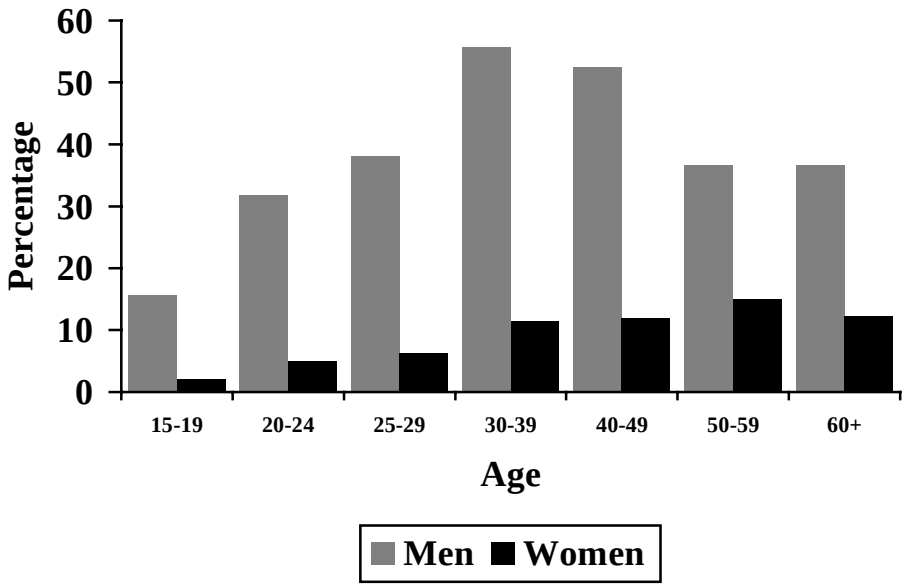
6.7 Habits and Lifestyle: Smoking and Drinking

Men and women were also asked to report how often they smoked cigarettes and drank alcohol. Appendix Tables A6.10 and A6.11 present rates of current smoking, weekend drinking, and daily drinking. All smokers, regardless of how frequently they smoke, were included in the estimate of current smoking.

Men were much more likely than women to smoke (37.8 and 9.5 percent, respectively) and drink either daily or on weekends (60.1 and 22.3 percent, respectively). Among those who drank, a greater proportion of men and women drank daily (34.6 and 13.9 percent, respectively) than drank on the weekends (25.5 and 8.4 percent, respectively).

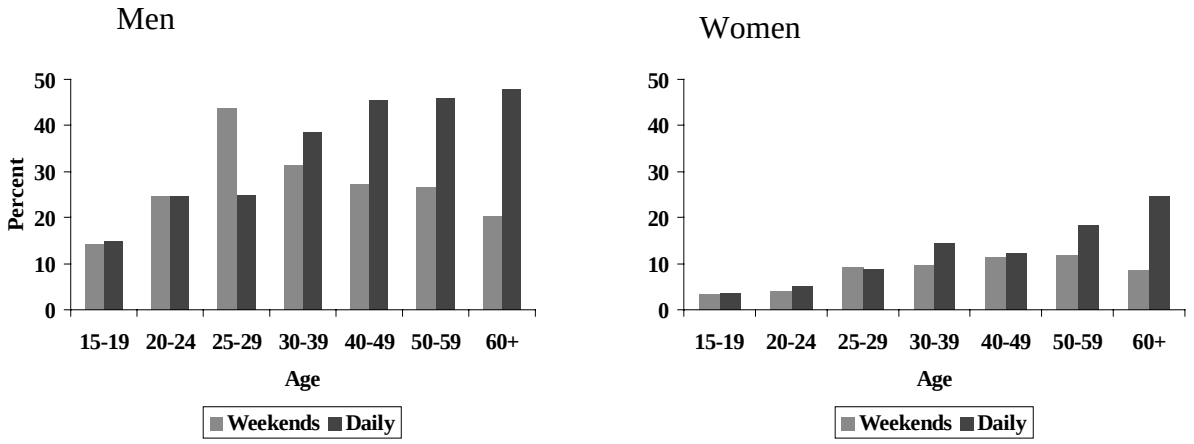
For both sexes, smoking generally increased by age (Figure 6.24). Smoking rates in men increased from 15.6 percent in the youngest group to 55.6 percent among those aged 30 to 39, decreasing in men 40 years and older. The percentage of women who smoked increases steadily from 2.0 percent in the youngest group to 15.0 percent in women aged 50-59.

Figure 6.24 Percent of Men and Women Who Currently Smokes Cigarettes, by Age



Alcohol consumption, considering both weekend and daily drinking together, also increased steadily with age (Figure 6.25). This clear upward trend was also reflected in the distribution of daily drinking alone. The youngest men and women had the lowest rates of daily drinking (14.8 and 3.6 percent, respectively), and prevalence increased to its maximum amongst those aged 60-95, such that nearly half of men and a quarter of women in the oldest age group drank. Weekend drinking also tended to increase with age for women. However, the percentage of men who drank on the weekends peaked at 43.7 percent in those aged 25-29, declining by more than half to 20.3 percent among the oldest men.

Figure 6.25 Percent of Men and Women Who Drink Alcohol Daily or on Weekends, by Age



In terms of regional differences, the former Transkei showed distinct behavior from other areas in terms of smoking and drinking (Figures 6.26 and 6.27). Men and women from the former Transkei were less likely to smoke (28.8 and 1.4 percent, respectively) than their counterparts in non-Transkei rural areas (41.3 and 9.5 percent, respectively) and urban areas (39.6 and 15.7 percent, respectively). Drinking rates also tended to be lower in the former Transkei compared with urban and non-Transkei rural areas for both men (49.8, 56.5 and 66.8 percent, respectively) and women (11.3, 19.2 and 33.7 percent, respectively) (Figure 6.27). However, men and women from the former Transkei were much more likely to drink daily (43.9 and 10.9 percent, respectively) than drink on the weekend (5.9 and 0.4 percent, respectively), while drinking was more balanced between daily and weekend drinking in urban and other rural areas.

Racial differences in cigarette and alcohol use were observed. Smoking was very common among colored men and women (56.5 and 41.3 percent, respectively) as well as in Asian/Indians (77.8 and 66.7 percent, respectively) relative to black and white men and women. While drinking occurred in over half of all black, colored, and white men; and over one-third of all colored and white women, it was much more common among whites. Very high proportions of white men and women drank in general (85.5 and 66.4 percent, respectively), in which daily drinking occurred among about half of the men and one-third of the women.

Figure 6.26 Percent of Men and Women Who Smoke Cigarettes, Comparing Former Transkei with Other Urban and Rural Areas

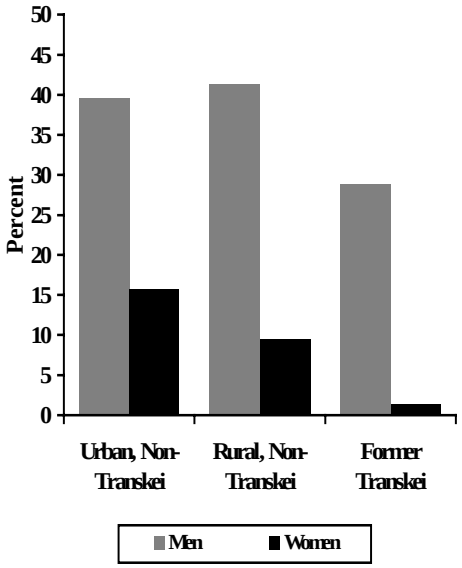
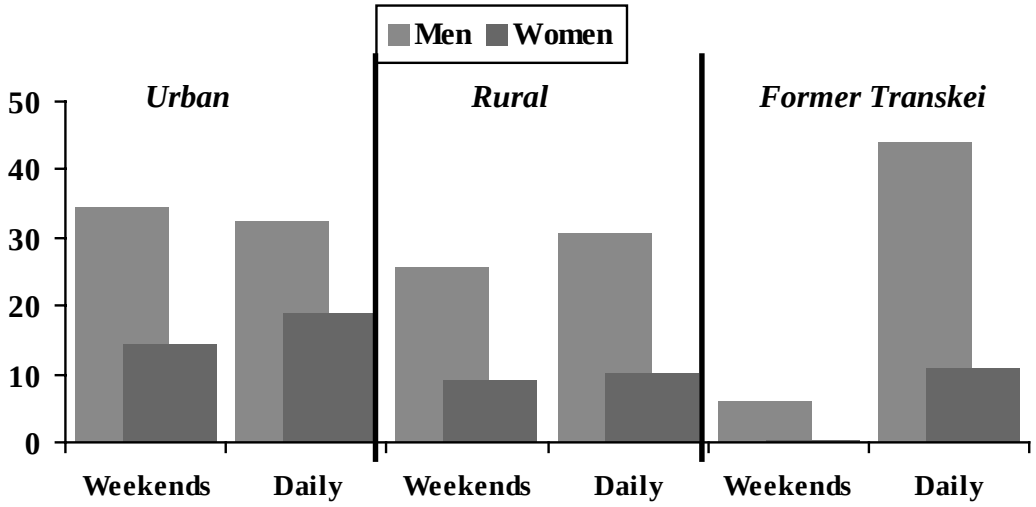


Figure 6.27 Percent of Men and Women Who Drink Alcohol Daily and on the Weekends, Comparing Former Transkei with Other Urban and Rural Areas



Smoking and daily drinking tended to decrease with an increase in education (Figure 6.28). While nearly half of all men and one-fifth of all women with no education smoked, the prevalence decreased steadily to 25.2 percent of men and 7.8 percent of women with the highest level of education. Likewise, the greatest percentage of men and women to drink daily were those with no education (49.2 and 30.4 percent, respectively) while those with the highest level of education were less likely to drink daily (31.8 and 15.4 percent, respectively). Wealth status affected smoking only slightly (Figure 6.29). A decrease in men's daily drinking was observed among men in the highest wealth quartile compared with those in the lowest (45.3 and 31.8 percent, respectively), though the same decrease was not observed among women who drank daily.

Figure 6.28 The Effect of Education on Percentage of Men and Women Who Smoke Cigarettes and Drink Alcohol Daily

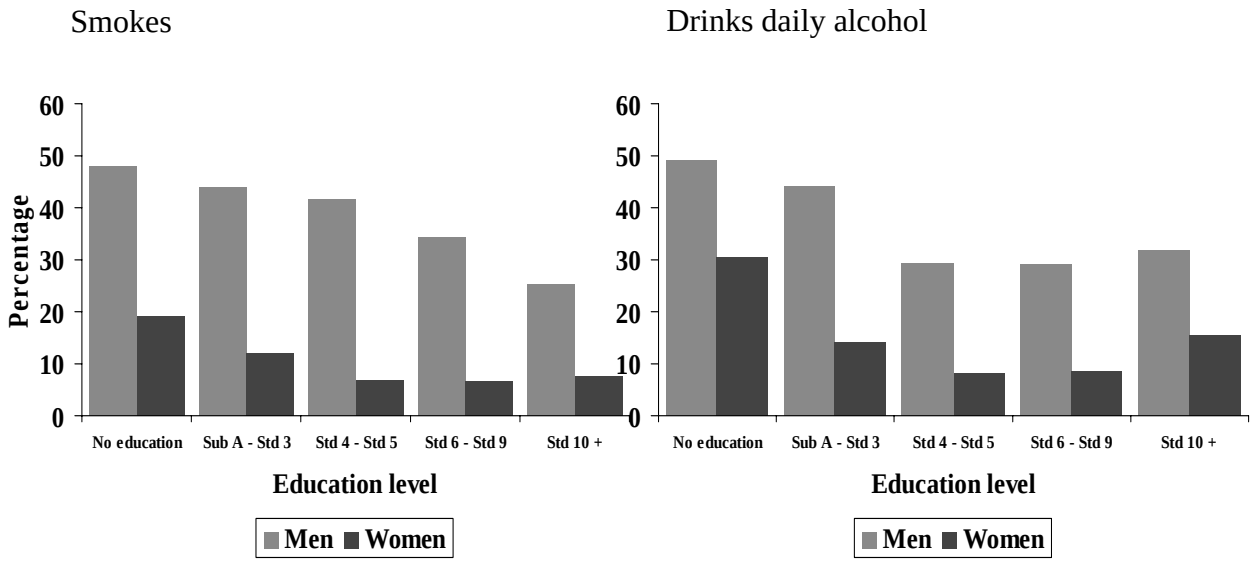
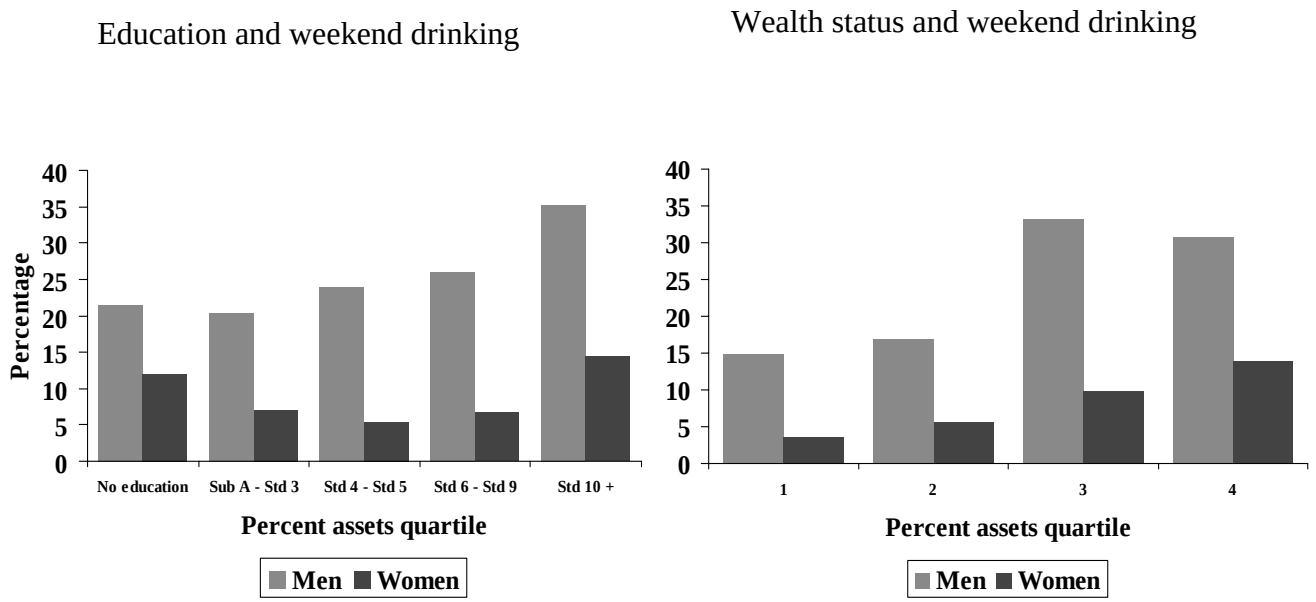


Figure 6.29 The Effect of Wealth Status on Percentage of Men and Women Who Smoke Cigarettes and Drinks Alcohol Daily

Interestingly, in contrast to the way that increased income and wealth tended to protect against smoking and daily drinking, weekend drinking tended to increase with education and wealth (Figure 6.30).

Figure 6.30 The Effect of Wealth Status on Percentage of Men and Women Who Drink Alcohol on Weekends and Daily

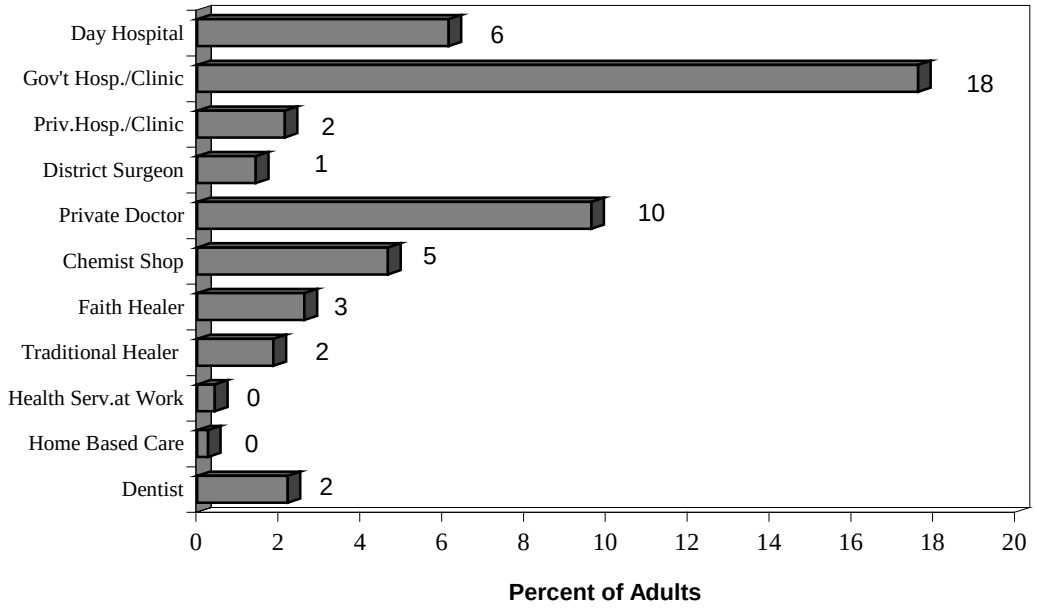


Education showed little effect on the proportion of women who drank on the weekend, though men with no education were less likely to drink than men with the highest level of education (21.5 and 35.3 percent, respectively). Weekend drinking also tended to increase by wealth quartile, with men and women in the highest quartile more likely to drink (30.8 and13.9 percent, respectively) than their counterparts in the lowest quartile (14.8 and 3.6 percent, respectively).

6.8 Health Services Utilization

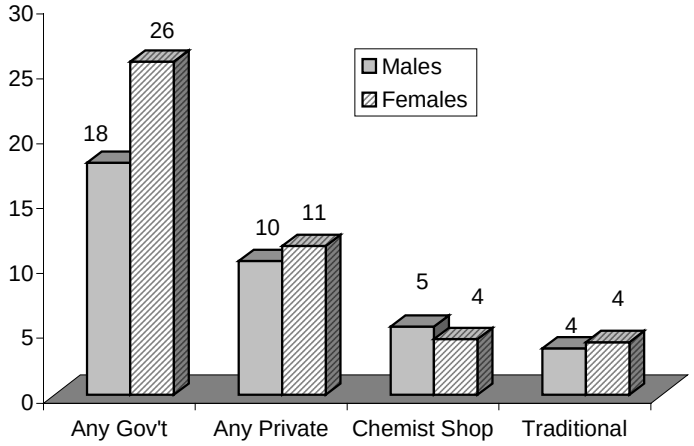
Adults were asked if they had used any form of modern health care in the past month. Overall, 31 percent of adults reported that they had used some form of modern health care in the past month (Figure 6.31). The most commonly cited provider was a government hospital or clinic (18 percent), followed by private doctors (10 percent), and day hospitals (6 percent). No questions were asked about the types of services used or the reasons for seeking care. Approximately 12 percent of adults had used a private hospital, clinic, or doctor in the past month. A small minority had used a faith healer (3 percent) or a traditional healer (2 percent).

Figure 6.31 Use of Health Services in Past Month, Adults



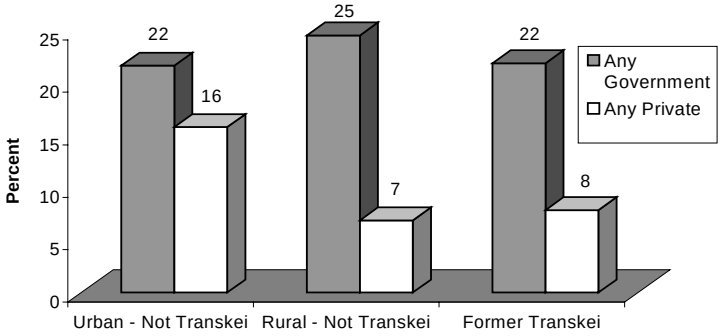
Females were more likely to have used government or private providers in the past 30 days than males (Figure 6.32). Approximately 26 percent of women reported having used a government hospital or clinic in the past 30 days as compared with 18 percent of males. The difference for private providers was smaller – 10 percent of males versus 11 percent of females. Men were slightly more likely to use chemist shops, perhaps reflecting either less serious health needs greater time restrictions.

Figure 6.32 Use of Services by Males and Females



These patterns of health care utilization differed substantially by region of the province (Figure 6.33). While roughly equal percentages of adults used government providers in the past month, individuals in urban areas were more than twice as likely to use private providers than adults in rural areas or in Transkei. Approximately 16 percent of adults in urban areas visited a private health care provider – usually a private doctor – as compared with only 8 percent of adults in the former Transkei, and 7 percent in other rural areas.

Figure 6.33 Percentage of Adults Using Government and Private Providers – Last 30 Days



Approximately 10 percent of the respondents were covered by Medical Aid. Respondents in urban areas were much more likely to have Medical Aid than respondents in rural areas (20.0 percent versus 1.4 percent). Percentages were higher in Mandela and Western District, where the larger urban areas were located.

Questions were also asked about whether the person was satisfied with the care received and, if not, the reasons for dissatisfaction (Table 6.3). Such questions must be taken with caution, since satisfaction is a subjective assessment. The individuals who use government services may be very different from those using traditional healers, and therefore may have very different ideas of satisfaction. Similarly, the same person may have very different expectations when visiting different types of providers; the level of care that might be satisfactory at one type of provider may be very unsatisfactory at another provider, particularly if the different providers involve different costs or difficulty in access.

Satisfaction with private providers – private hospitals/clinics or private doctors – was higher than at government hospitals or clinics. Ninety-six percent of adults visiting a private hospital or clinic and 94 percent of adults visit a private doctor were satisfied with their care, as compared with 88 percent of those visiting a government hospital or clinic. While no one reported staff being rude as a reason for dissatisfaction at private providers, 13.7 percent of those who were dissatisfied with government care cited this as a reason.

Table 6.3 Satisfaction with care

Service Provider	Percent Satisfied	No. Visiting	No. Unsatisfied	Reason for Dissatisfaction (Percent)					
				Long Wait	Short Consultation	Staff Rude	Didn't See Doctor	Other	Total %
Day Hospital	85.2	118	17	10.8	6.8	15.8	33.3	33.3	100.0
Government Hosp./Clinic	88.2	338	40	16.6	11.0	13.7	21.6	37.1	100.0
Private Hosp./Clinic	95.9	41	2	0.0	0.0	0.0	29.6	70.4	100.0
District Surgeon	95.7	28	1	0.0	42.0	0.0	0.0	58.0	100.0
Private Doctor	94.1	185	11	15.6	23.7	0.0	0.0	60.7	100.0
Chemist Shop	94.3	89	5	0.0	13.4	26.9	59.7	0.0	100.0
Faith Healer	91.3	50	4	0.0	22.8	0.0	11.4	65.8	100.0
Traditional Healer	82.9	36	6	19.6	27.8	0.0	0.0	52.6	100.0
Health Services at Work	91.8	8	1	0.0	0.0	0.0	100	0.0	100.0
Home Based Care	76.0	5	1	0.0	0.0	0.0	0.0	100	100.0
Dentist/Oral Hygienist	98.4	42	1	0.0	100	0.0	0.0	0.0	100.0

CHAPTER 7. KNOWLEDGE OF AIDS AND SEXUALLY TRANSMITTED INFECTIONS AND PREVENTION BEHAVIORS

Information was collected from women on the extent of knowledge of AIDS, sources of knowledge, and attitudes and beliefs about HIV/AIDS. The data indicate nearly universal knowledge of HIV/AIDS and mechanisms to prevent transmission, but also some misconceptions and stigma related to people with HIV/AIDS. No information was collected from men on knowledge and attitudes regarding HIV/AIDS.

Knowledge and Awareness of HIV/AIDS: Knowledge and awareness of HIV/AIDS among women in the survey was high. Virtually all women had heard of HIV/AIDS and most knew of some means to avoid it – safe sex (87 percent), using condoms (85 percent), and not sharing needles (87 percent). Knowledge and awareness were somewhat lower among poorer and less educated women and women living in Alfred Nzo and Oliver Tambo district councils. Knowledge and awareness questions were not asked of men in the survey. Some misconceptions existed regarding transmission mechanisms, including through mosquitoes, sharing food, or associating with infected individuals. Stigma regarding HIV/AIDS also were apparent among surveyed women. A significant proportion of women (70 percent) believed that health authorities should be informed of an infected individual. Only 17 percent of women reported that they know of someone who was infected or who had died from AIDS.

Condom Use: Condom use during last sex was low – only 8 percent of sexually active women and 5 percent of married women. However, over 60 percent of sexually active women who have ever used condoms reported using them during their last sex. Condom use was higher among more educated women. In fact, among women without any formal education, none reported ever having used a condom. The main reasons given for not using condoms was dislike – either the partner disliked using them (39 percent) or the respondent disliked them (26 percent). Lack of availability was the fourth most common reason for non-use (9 percent).

7.1 Knowledge of AIDS

In the Eastern Cape women's sample, knowledge of HIV/AIDS was almost universal. Over 95 percent of women reported that they had heard of HIV/AIDS (Table A7.1). This knowledge was roughly equal across the different age groups. It was slightly higher among women who had ever had sex, among more educated women, women in urban areas, colored and white women, women in Western, Amatole, Chris Hani and Mandela districts, and women in higher asset quartiles.

Exposure to media was also associated with knowledge of HIV/AIDS, although causal relationships cannot be concluded since exposure is related to education, income, and asset ownership as well. On the positive side, knowledge was high even among women with lesser exposure to media. Over 94 percent of women who did not read a newspaper weekly and 92 percent of women who did not listen to the radio daily knew of HIV/AIDS.

The most common source of knowledge of HIV/AIDS was by television, even among women in households that did not own televisions. The next most common source was health workers.

7.2 Ways to Avoid AIDS and Knowledge of AIDS

The vast majority of women who had heard of HIV/AIDS knew of some method to protect against it (Table A7.2). Just over 85 percent of women knew that using a condom can protect against HIV/AIDS. Approximately 87 percent of women knew that safe sex and receiving injections with clean needles can prevent HIV/AIDS transmission. Knowledge was higher in the more sexually active age groups – ages 20 to 34. It was also higher among women with higher levels of education, urban residents, white and colored women, women in Mandela and Amatole districts, and women who reported greater exposure to media.

There were some substantial gaps in knowledge however. One-third of women with no education and 30 percent of women with Sub A to Standard 3 education did not know that condoms prevent HIV/AIDS. This was true also for 26.2 percent of women in Alfred Nzo and 25.1 percent of women in the lowest asset quartile.

There were also substantial misconceptions about how HIV/AIDS is transmitted, and therefore, other mechanisms of protection. Nearly half of all women believed that HIV/AIDS can be avoided by avoiding mosquitoes, and one fifth of women believed that HIV/AIDS can be avoided by not using public toilets. A slightly lower proportion of women believed that HIV/AIDS can be transmitted by sharing food with an infected person. While such misinformation is higher among women with lower levels of education, rural residence and being in the lower asset quartiles, the differences were not large. For example, 39 percent of women with no education believed that HIV/AIDS can be transmitted by mosquitoes as compared with 40 percent of women with at least a Standard 10 education. The difference was larger for beliefs about transmission at public toilets – 27 percent of women with no education versus 11 percent of women with 11 plus years of education.

Questions regarding perceptions and attitudes towards people with HIV/AIDS indicated that significant stigma and high degree of denial continue to exist regarding HIV/AIDS. This is apparent in relation to whether a healthy-looking person can have AIDS, in relation to reporting of whether they know someone with AIDS and in relation to reporting people with HIV/AIDS to health authorities.

Women were asked whether a person infected with the HIV virus always shows symptoms or whether such a person could look healthy. Only a minority of women reported that an apparently healthy-looking person can have AIDS. As with awareness of HIV/AIDS, this was apparent both in well-educated and less-educated women, although there may have been different interpretations of the question by women of different education levels. The highest proportion of women responding to presence of symptoms was in the middle education categories. In fact, women who had not finished primary school were most likely to say that a healthy-looking person could be infected. In some cases, exposure to media was negatively associated with this attitude. Women who read a newspaper weekly were less likely to report that a healthy-looking person can have AIDS than women who did not read a newspaper weekly (26.7 percent versus 34.1 percent). Explanations for the high proportion of incorrect responses are not readily available, though they may represent a defense mechanism; women may want to believe that if they look healthy then they cannot be infected.

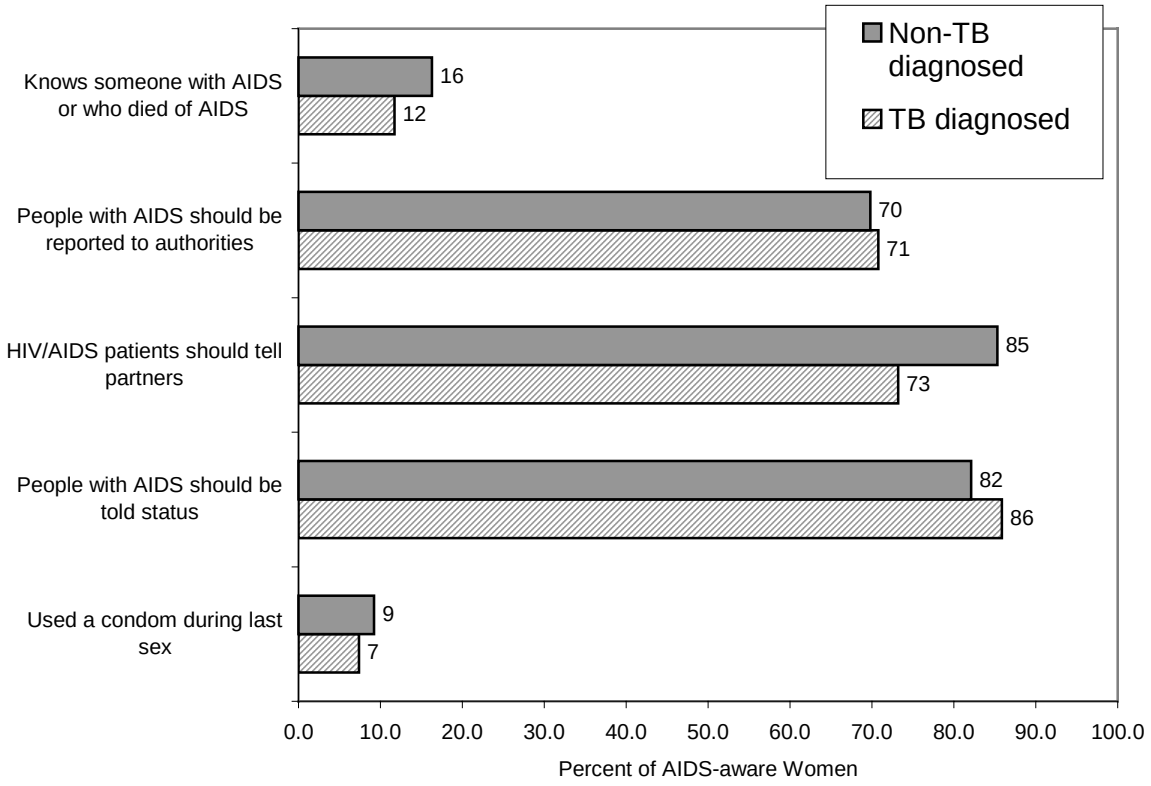
7.3 Perceptions of HIV/AIDS

In spite of high HIV infection rates, it appears that there was significant under-reporting of familiarity with AIDS and denial of AIDS as a problem. Less than 20 percent of women reported that they knew someone who had been diagnosed with AIDS or who had died of AIDS. This proportion was higher among women who were more educated, lived in urban areas, lived in Mandela district, or were in higher asset quartiles (Table A7.3).

Most women (79.7 percent) felt that people should be told their AIDS or HIV status. An even higher proportion thought that HIV/AIDS patients should tell their partners. This proportion was higher among women who were currently married; more educated; white or colored; lived in Chris Hani, Mandela, or Western District; were in higher asset quartiles; and had greater media exposure.

There was also evidence of considerable stigma regarding HIV/AIDS status. The majority of women – approximately 70 percent – felt that there should be a law requiring reporting of HIV or AIDS status to health authorities. When the above data were linked with data in the adult health section (Figure 7.1), personal experience did not seem to shape attitudes. Even women who reported that they had been told they had TB – a close correlate of HIV/AIDS infection – were no less likely to say that an apparently healthy-looking person cannot be infected with AIDS than women who had not been diagnosed with TB. On the other hand, TB-diagnosed women were more likely to think that people should be told their HIV/AIDS status but were less likely to think that partners should be told. In fact, they were even somewhat less likely to use a condom during their last sexual encounter.

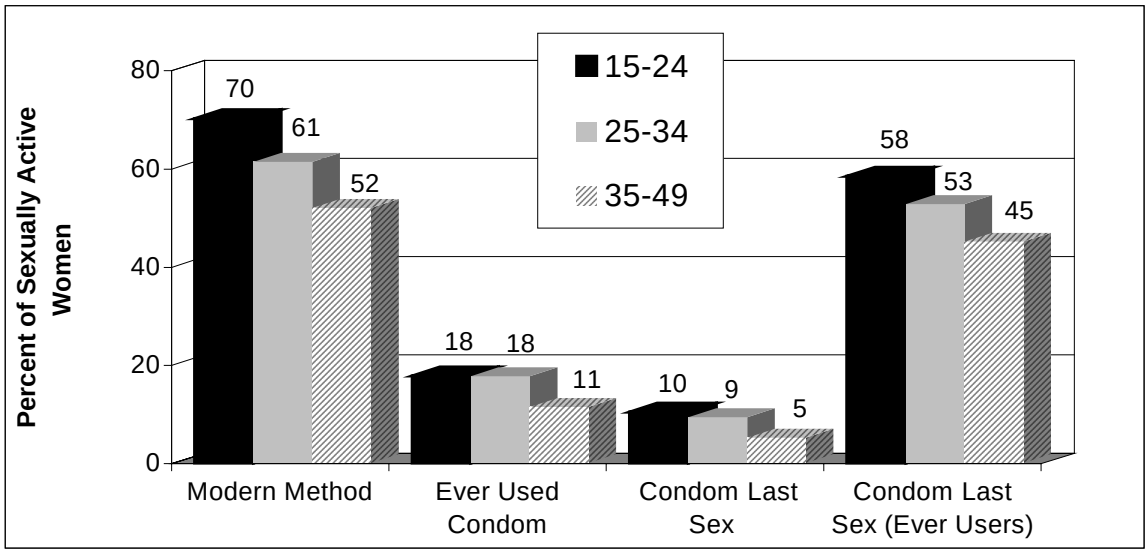
Figure 7.1 Attitudes towards HIV/AIDS by TB Status



7.4 HIV/AIDS Knowledge Index

A composite index of knowledge of HIV/AIDS was constructed using answers to women's questions on having ever heard of AIDS, knowing ways to avoid HIV/AIDS, and perceptions of HIV/AIDs. The distribution of this variable is shown in Figure 7.2. Any woman reporting that she had never heard of HIV/AIDS was given a zero on the index. The median value was 10. There was some heaping at zero (4.5 percent of women had not even heard of HIV/AIDS) and at 1 (7.6 percent of women had heard of HIV/AIDS, but could not provide any correct information about it). The index itself is an ordinal construct, and it is not possible to know the significance of incremental changes in its value. It was, therefore, not possible to say that a woman with a perfect score of 14 knew twice as much as a woman with a score of 7. Even so, the index has value because it can be used in an ordinary least squares regression analysis to measure which covariates such as education, exposure to media, and access to health services were statistically related to greater HIV/AIDS knowledge. This is taken up in Chapter 8.

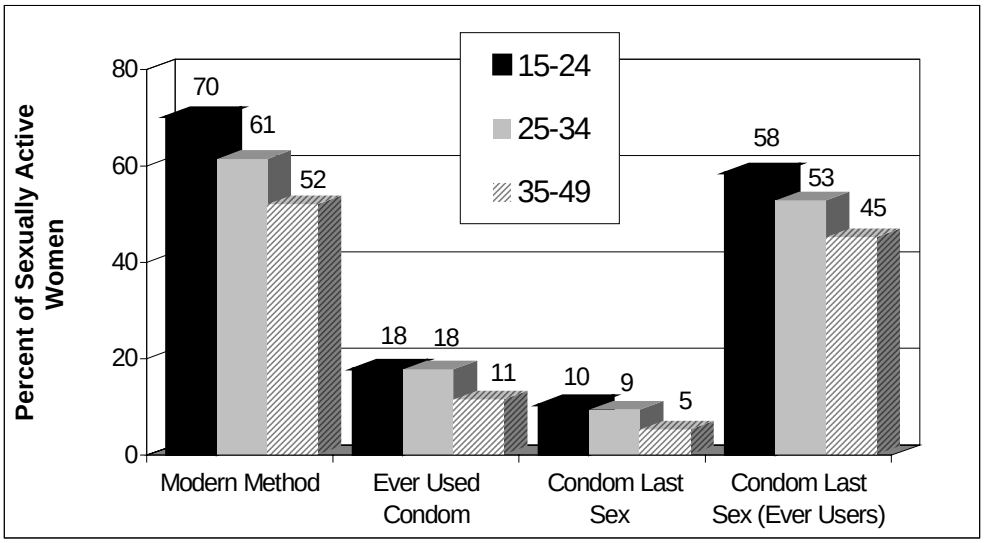
Figure 7.2 Histogram of HIV/AIDS Knowledge Index Scores



7.5 Condom Use

Women were asked if they had ever used condoms and whether or not they had used them during their last sex (Figure 7.3). Indicators of condom use among women were fairly low overall (men were not asked about AIDS and sexual behavior).

Figure 7.3 Use of Modern Contraception, Ever Use of Condoms, Condoms Last Sex by Age



As shown earlier, only 1.4 percent of sexually active women used condoms as a method of contraception. Ever use of condoms was also quite low. Overall, 11.5 percent of all women, 10.8 percent of married women, and 15.5 percent of sexually active women reported having ever used condoms. Use was highest among the 20 to 34 year age group, among urban residents, among more educated women, among women in Mandela District, among white women, and among the asset quartiles.

Condom use during last sex is by definition lower than ever use of condoms. Approximately 8 percent of sexually active women and 5 percent of married women used a condom during their last sex. The patterns of use among the different sub-groups closely paralleled those for ever use of condoms and current use of contraception. Use was higher in the younger age group – 15 to 24 years of age. Of those women who had ever used condoms, 61 percent reported that they used them during last sex; and 52 percent of sexually active women who had ever used a condom reported using a condom during last sex. Such numbers, however, must be taken with caution as respondents may have intuited the response they believed interviewers wanted to hear.

The most dramatic differences however were by education level. Not a single woman without formal education had ever used a condom. This was in strong contrast to women with more than secondary education; over one-third of these women had used a condom, including 17 percent of sexually active well-educated women who used a condom during their last sexual encounter.

Perhaps surprisingly, condom use during last sex was not significantly different between women who knew that condoms protect against HIV/AIDS and those who did not (Figure 7.4). Among sexually active women, 6.6 percent of those who did not know of condoms' protective effects used a condom during their last sex. Only slightly more – 8.9 percent – of those who knew that condoms protect used one during their last sex. Among married women, condom use during last sex was in fact higher for those who were unaware of condoms protective effects.

There was, however, small evidence that knowing that condoms protect against HIV/AIDS influenced condom use. The majority of sexually active women (81.9 percent) knew that condoms provide protection against pregnancy and against HIV/AIDS (Table 7.1). Approximately 10 percent knew of condoms only for family planning purposes, 3 percent knew of condoms only for STD protection, and 5 percent had never heard of condoms. Women who knew of the dual purpose of condoms were almost three times as likely to have ever used condoms and more than twice as likely to have used a condom during last sex than those who were only aware of its family planning purpose. However, the effect of knowledge alone can be over-stated. In addition to knowledge of condoms' objectives, women who knew that condoms protect against both pregnancy and STDs may be different in other ways that affect condom use (e.g., they may also be wealthier, more educated, urban, more able to intuit desired interviewer responses).

Figure 7.4 Condom Use during Last Sex by Whether Woman Knows that Condoms Protect Against HIV/AIDS

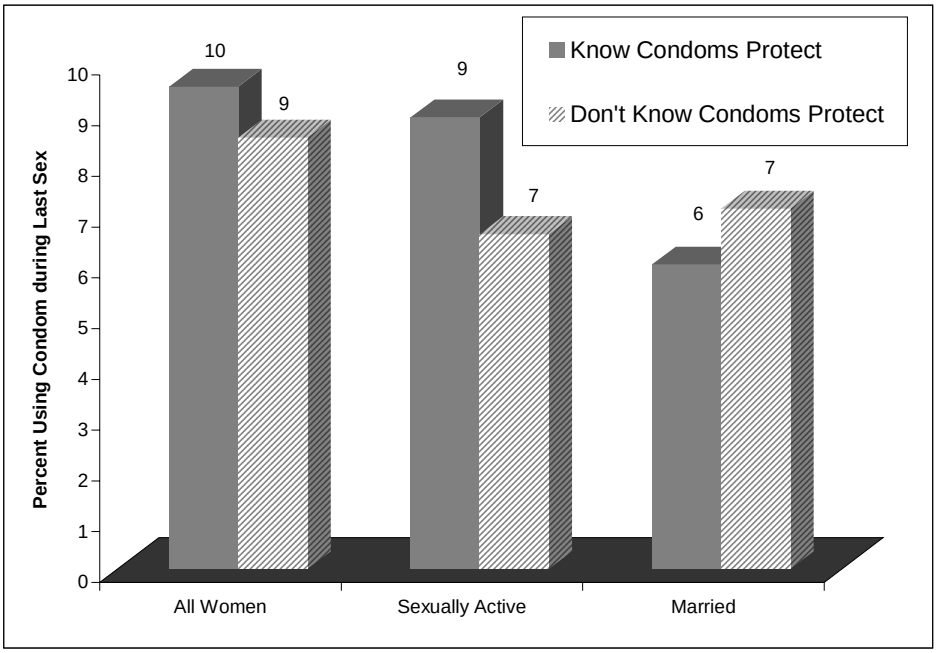


Table 7.1 Condom use by knowledge of purpose of condoms

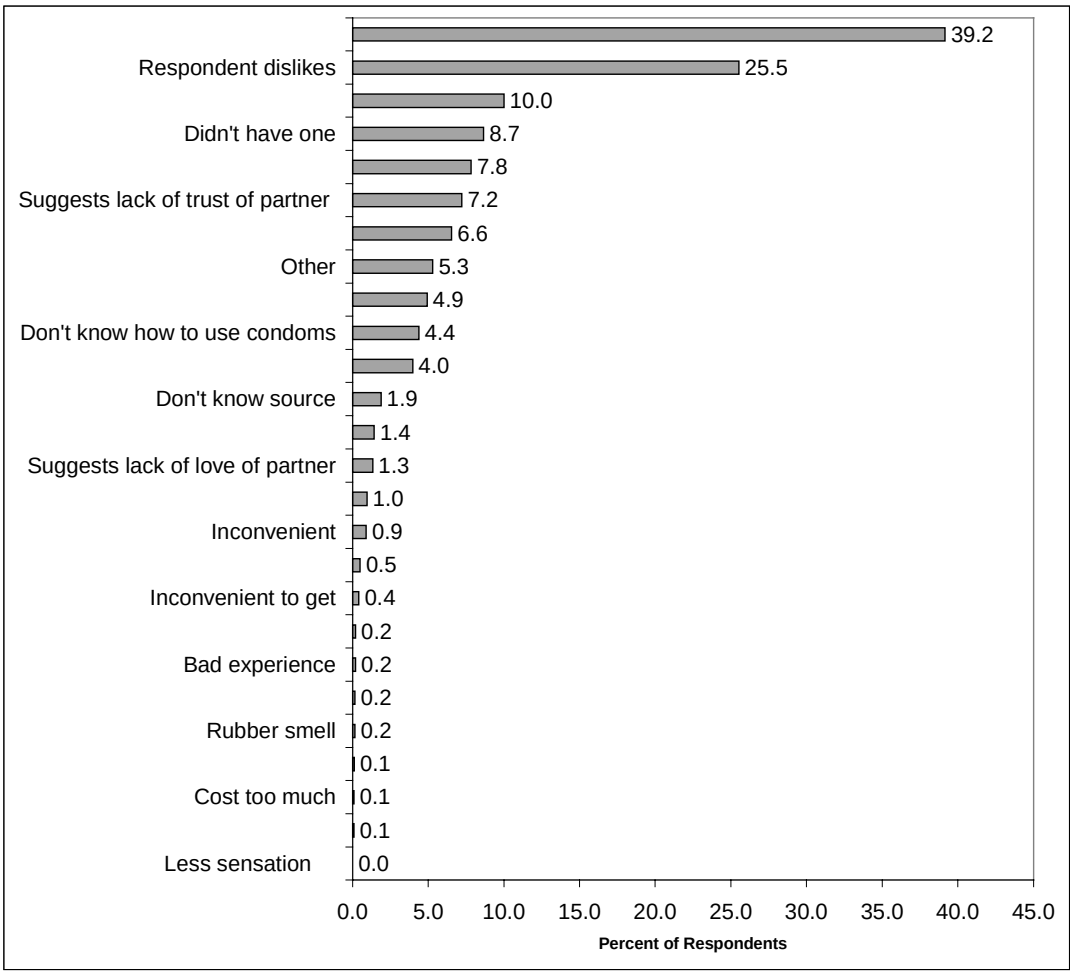
	Percent	Percent Ever Using Condom	Percent Using Condom During Last Sex	N
Never heard of condom	5.3	0.0	0.0	62
Only knows for FP	9.9	6.4	3.9	117
Only knows for STD	3.0	0.0	0.0	35
Knows for FP and STD	81.9	17.7	9.2	968
Total	100.0	15.2	7.9	1,182

If such a substantial proportion of the female population are aware of HIV/AIDS and know that condoms can protect against it, it is important to know why almost no women are using condoms. In the survey, women who reported that they did not use a condom during their last sex were asked the reasons why they did not use one. Among sexually active women, the predominant reason given by respondents appeared to be one of preferences rather than accessibility, fertility desires, or problems with condoms. The most common reason cited (Figure 7.5) was that condoms were disliked – either the respondent disliked using one (25.5 percent) or the partner disliked using one (39.2 percent). The next most common reason was that respondents preferred sex without a condom, i.e. “flesh to flesh” (10.0 percent).

While interpreting the true nature of the dislike is difficult, it was apparent that dislike outweighs other factors. Accessibility seemed to be a less important problem; there was very little indication that women did not know a source (1.9 percent), that they were embarrassed to get condoms (0.5 percent), or that condoms were inconvenient to get (0.4 percent). Only a few women reported that they did not know how to use condoms (4.4 percent). Approximately 7 percent of sexually active women chose not to use condoms because they wanted a child.

That respondent dislike of condoms and the suggestion that using condoms indicates a lack of trust could indicate problems in the negotiation of condom use among partners, and is therefore a useful area for additional research.

Figure 7.5 Reasons for Not Using Condom during Last Sex among Sexually Active Women



7.6 Adolescent Reproductive Health

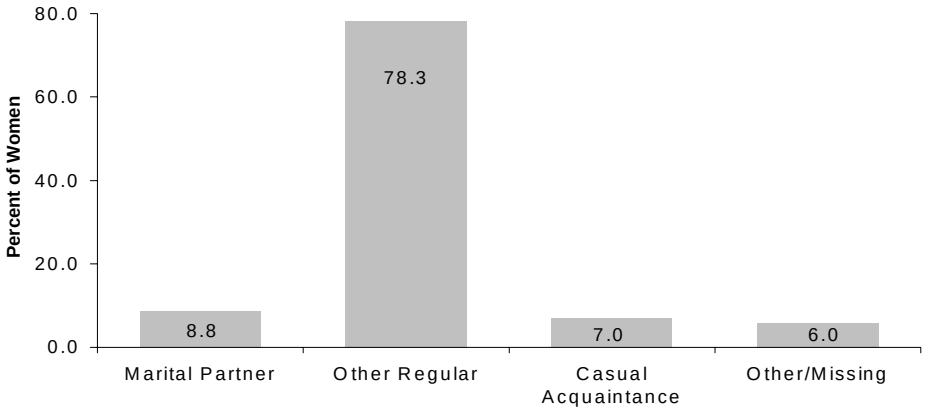
For countries with high rates of HIV infection, an important stopgap measure is to increase knowledge and to affect behavioral change among younger adults. The same questions asked of all women in the survey are examined in greater detail for adolescents. In the Eastern Cape, knowledge of AIDS was nearly universal among adolescents but differences existed in knowledge of ways to avoid AIDS (Table A7.5). Only 65 percent of adolescents in Alfred Nzo knew ways to avoid AIDS, as compared with 100 percent of adolescents in Western District.

Adolescent women aged 15 to 19 years were regularly engaged in sexual activity. Overall, 56 percent reported having ever had sex. The percentage was considerably lower in Alfred Nzo, in fact only half of the percentage in Western District. Only a small difference was noted between adolescent women in urban and rural areas.

Use of condoms, during last intercourse or ever, was considerably different across regions. Approximately 23 percent of adolescent women in Western District and Mandela had ever used a condom. No adolescent women in Alfred Nzo or Ukhahlamba had ever used a condom. Condom usage was twice as high in urban areas than rural, and three times higher in the highest income group than the lowest.

While the actual number of sexual partners may be underestimated through self-reporting, only 3.3 percent of adolescents reported having two or more sex partner in the past year. Just under half of young women reported that they did not have sex in the past year. Most women reported that their most recent sex was with a regular partner (78 percent), while only 9 percent report that their last sex was with a marital partner (Figure 7.6). Only 7 percent of women reported that their most recent sex was with a casual acquaintance or someone they had just met, although it might be expected that women would be reluctant to report such information.

Figure 7.6 Relationship to Last Sexual Partner, Women 15-19 Years Old



CHAPTER 8. IMPACT OF SERVICE QUALITY AND AVAILABILITY ON USE OF PRIMARY HEALTH CARE SERVICES

This section combines data from the 1998 SADHS and the 1998 Facility Audit to analyze the relationships between the characteristics of households, individuals, and health care clinics and the use of different primary health care services.

The results indicate that individuals were more likely to use facilities that were of measurably higher quality, regardless of where the individuals lived. For example, women were more likely to use a clinic for modern contraception that had all nursing posts filled, that had greater availability of supplies and equipment, and that had regular supervision by health officials. In the former Transkei, training a health worker in EPI was associated with an increase of 8.6 percentage points in the likelihood that a child would receive a DPT3 vaccination, while having a CHW at a clinic increased the likelihood by 10.1 percentage points. The policy implications of these results are that improvements in quality can have significant impacts on whether or not individuals use government facilities.

This section also examines factors that might explain differences between the former Transkei and other rural areas in health outcomes and health behaviors. In general, these differences could not be attributed to differences in the quality and accessibility of government health services, which were fairly similar in the former Transkei and other rural areas. Education levels, too, were roughly equal across the two types of rural areas. Socioeconomic status, on the other hand, was considerably lower in the former Transkei, and was significantly associated with differences in use of essential services. Still, much of the difference could not be explained by the characteristics of individuals and government facilities. Rather, other factors, unmeasured by either the household or facility surveys – cultural attitudes towards care, unmeasured quality indicators – explain a significant portion of the differences.

The previous sections have looked almost exclusively at the information contained in the SADHS for Eastern Cape Province, that is the health outcomes and health behaviors of women and adults and their children. Except for the Cox proportional hazard models or logistic regressions, much of these data have been presented simply as univariate or bivariate comparisons – e.g. immunization coverage rates or immunization coverage rates for different sub-groups of the population – women of different education levels, asset quartiles or regions. While the comparisons have been presented simultaneously – by education group, by region, by asset quartile – they have not simultaneously controlled for the direct and indirect effects of being in different sub-groups. For example, while we know that many of the health outcomes and behaviors are far worse in the former Transkei than elsewhere, we also want to know what are the principal associative factors that help to explain these differences. Is it that women in

former Transkei are more remotely located, making accessing health services more difficult? Or is it that lower levels of education in the former Transkei are associated with women placing a lower value on health services or having a lesser knowledge of their benefits or availability? Or is it that the services that are available at government clinics in the former Transkei (and their alternatives) are of a lower quality, thereby reducing their effectiveness when they are used or making individuals less likely to use them? Finally, as is likely, is it some combination of all of these factors or is it simply something unique about the former Transkei?

Using information on the Global Positioning System (GPS) positions of the areas in which surveyed households reside and the positions of government clinics in the 1998 Facility Audit, it was possible to link households with the government clinics that were closest to them. By linking households to the facilities that are in the areas in which they live, we can obtain additional information on factors – specifically those factors that are related to the facilities themselves and not to individuals and households – that may affect whether or not people use health services such as modern contraception. By looking at how far away the clinics are, the type of staff that they have, the services that they offer, and the existence of necessary drugs and supplies, it is possible to determine the influences of service quality and accessibility that affect people's decisions to seek care or not. Then, using multivariate regression techniques such as maximum likelihood probit or ordinary least squares regression, it is possible to test many of the questions above about the relative effects of individual, household, and facility characteristics on individual behaviors. Using these methodologies, we can have a more explicit understanding of the reasons why a women, for example, does or does not use antenatal care, deliver with a doctor, have her children immunized, or take her children to a doctor when they are ill.

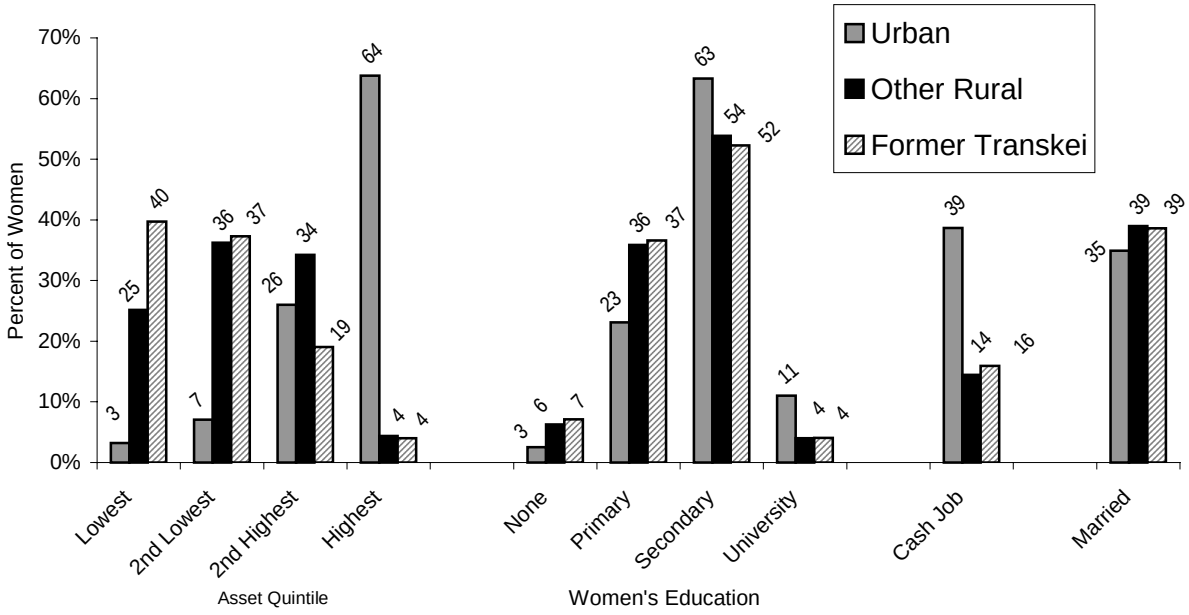
For this analysis, we look only at the rural areas. This is because the facility audit does not collect information on all of the facilities in the province – just government clinics. In urban areas, there are likely to be many other providers of health care than those government clinics. Without information on these other providers, we have an incomplete picture of the range of services available to households. This may lead us into erroneous conclusions about the effects of quality and service availability of government clinics. For example, a household in an urban area may be located next to a very good government clinic, but choose never to use it because there are even better private clinics and offices nearby. Without awareness of these private clinics and offices, we may make the erroneous and perverse conclusion that being near a very good government clinic decreases the likelihood that government clinics will be used. As a result, we look only at rural areas, where we can be more confident that in areas where there are government clinics, there are far fewer alternatives. In cases of services that are supplied predominantly by government facilities – pills, injections, condoms, delivery assistance – we can have a good sense of the actual choices that women make since the choice generally reduces either to using the government clinic or doing nothing.

Much of this analysis also distinguishes between behaviors – the use of specific health services – by households in the former Transkei and households in other rural areas. Specifically, we are interested in all of the questions asked above: are households in the former Transkei different

from those in other rural areas in ways that affect whether they use government clinics? Or are government clinics in the former Transkei different from those in other rural areas in ways that affect their use?

At the outset, it seems unlikely that differences in individual and household characteristics will explain differences in health behaviors and health outcomes. In fact, women in the former Transkei and women in other rural areas are remarkably similar in many respects. In both the former Transkei and other rural areas, only 6 percent to 7 percent of women have received no education, while just over one third have received primary education (Figure 8.1). Roughly equal proportions of women have had secondary education (54 percent versus 52 percent) and university education (4 percent and 4 percent) in the former Transkei and other rural areas, respectively. Approximately equal percentages of women are married (39 percent and 39 percent) and hold cash-earning jobs (14 percent versus 16 percent). However, considerable differences exist when examining wealth. Approximately 40 percent of women in the former Transkei are in households in the lowest asset quartile, as compared with only 25 percent of women in other rural areas. Over three quarters of women in the former Transkei are in the lowest two income quartiles, as compared with 61 percent of women in other rural areas. Wealth therefore seems to be one of the principal areas which may explain differences in behaviors.

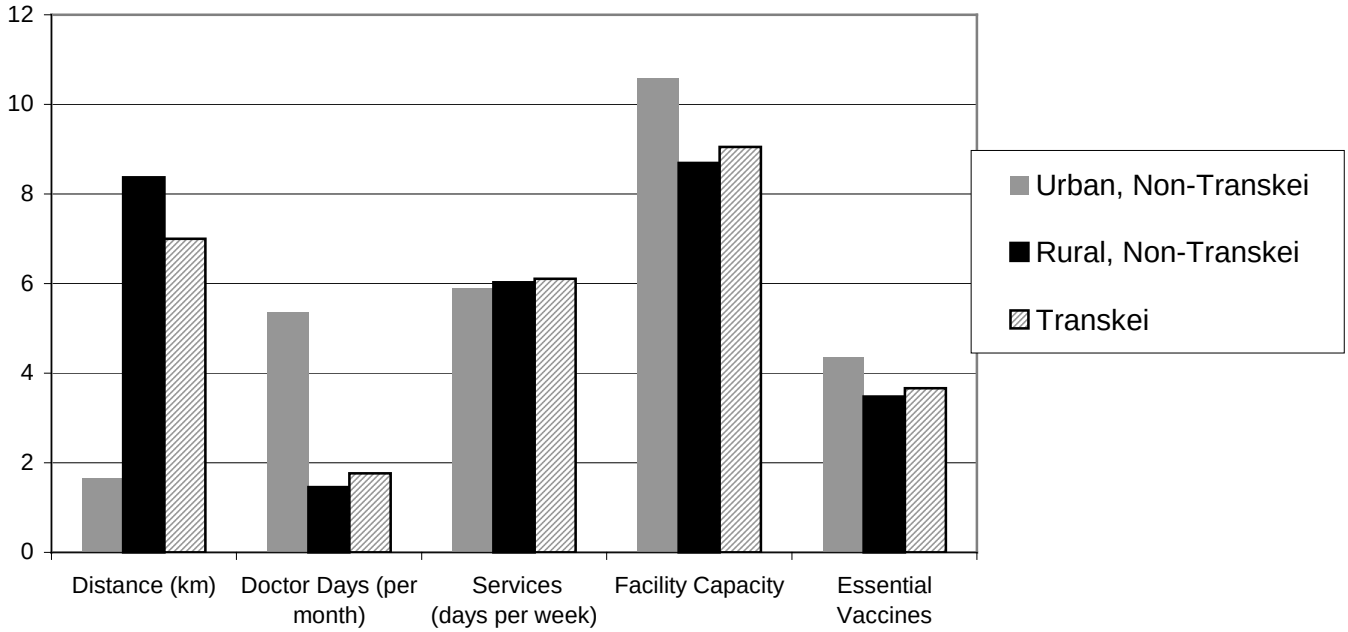
Figure 8.1 Women's Characteristics by Region



Similarly, differences in the quality and availability of services at government clinics in the former Transkei and other rural areas are also less than what might be expected and therefore seem unlikely to explain differences in health behaviors. For example, clinics in both areas on

average offered six essential services at least 5 days per week (Figure 8.2). Clinics in the former Transkei, in fact, scored higher on an index of facility capacity that measured availability of vaccines, drugs, and equipment and on an index of the availability of five essential vaccines. The number of days per month that a doctor was present, on average, at a government clinic was also slightly higher in clinics in the former Transkei. In terms of physical accessibility, clinics in the former Transkei were also 1.3 kilometers closer (7.0 kilometers versus 8.3 kilometers) to women than clinics in other rural areas. In both areas, approximately 90 percent of nursing posts were filled. More complete descriptions of facility characteristics by district council are found in Table A8.1.

Figure 8.2 Facility Characteristics by Region



In order to examine with greater statistical rigor the questions discussed above, we use the combined data from the SADHS and the 1998 Facility Audit to perform multilevel analysis on several different health behaviors that may be influenced by the characteristics of individuals, households, and clinics:

- Use of modern contraception and unmet need
- Childhood immunizations (DPT3, polio3, measles, full coverage)
- Use of antenatal care and delivery assistance at birth
- Use of government health facilities by adults in the past 30 days
- Knowledge and awareness of HIV/AIDS.

8.1 Use of Modern Contraception and Unmet Need for Family Planning

Maximum likelihood probit estimations were undertaken for the probability that a woman was using modern contraception and for the probability that a woman was classified as having an unmet need for family planning. Women who were infecund or post-menopausal were excluded from both estimations. In order to test whether the effects of certain variables differed among women in the former Transkei, all variables were interacted with a dummy variable for the former Transkei.

Several important results emerge from the probit estimations of use of modern contraception (Table A8.2). First, looking at the results for the full sample including women from the former Transkei and other rural areas, there is evidence of a statistical association between the characteristics of facilities and whether women chose to use modern contraception. Facilities with a higher proportion of nursing posts filled and with recent supervision visits were more likely to be used. Clinics with recent training of nurses in family planning were also more likely to be used, albeit at low levels of statistical significance.[4] The Wald test of joint significance of all facility characteristics was statistically significant at the 1 percent level, indicating that facility characteristics did influence women's behaviors.[5]

Other factors were also important in the decision to use modern contraception. Unsurprisingly, more educated women were more likely to use contraception, and married women were less likely to use contraception. At the same time, women who worked in cash-earning jobs or who lived in wealthier households were more likely to use modern contraception, although these results were statistically significant at only the 10 percent level.

A final important point is that women in the former Transkei were less likely to use modern contraception even when we controlled for factors such as education, income, and facility quality and availability. Specifically, it means that women of equal education levels, equal income levels, or equal accessibility to clinics were less likely to use clinics if they lived in the former Transkei than if they lived elsewhere in the province. This indicates that there was something that was not captured in our analysis – perhaps differences in staff attitudes, in women's appreciation of modern contraception, in fertility desires or in other factors – which led women in the former Transkei to be less likely to use modern contraception.

The estimations of factors associated with unmet need for family planning also linked women to clinics and to the characteristics of the family planning services that were available at the clinics.

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[4] Variables with Z scores greater than +/-1.96 are statistically significant at the 5 percent level using a two-tailed test.

[5] The joint statistical significance of facility characteristics was also important because it confirmed that the linking procedure was likely to produce an accurate measure of the choices of medical care – use the government facility, use a private provider or pharmacy, use traditional care, or use nothing – that were available to women in rural areas.

The term “unmet need” implies a failing on the part of the health system – that women with an unmet need for family planning would have their need met if only contraceptive services were more readily available and of a suitable level of quality that women would want to use them. By linking women to the clinics that were available to them, including measuring the distances from women’s homes to the available clinics, we can measure the effects of clinic availability and service quality relative to characteristics of the women themselves and their households. If we find that distance and facility characteristics did not matter (that is, that women with unmet need would have unmet need even if they lived closer to clinics or if the clinics were of higher quality), then we need to examine more closely why these women have an “unmet” need.

The effects of individual and facility characteristics on unmet need for family planning were generally of the opposite sign as those for use of modern contraception, which is unsurprising given that the two variables measure opposite behaviors – use and non-use. The principal difference in the definition of the dependent variables is that some non-users of contraception who desire a child in the near future are not categorized as having unmet need.

The most important point regarding the estimations of the determinants of unmet need are that facility characteristics were not statistically significant predictors of unmet need like they were for use of modern contraception. None of the facility characteristics were statistically significant, and the joint Wald test failed to reject the null hypothesis that the effects of these characteristics were statistically different from zero.

What this means is that it was characteristics of the woman herself and her household that explained whether or not she had an unmet need for family planning – not factors such as lack of access to clinics, lack of available staff, or lack of key supplies. This was confirmed by the strong results for individual characteristics. Older women, married women, and again women in the former Transkei were more likely to have an unmet need for family planning. More educated women were less likely to have unmet need.

The finding that facility quality and service availability did not affect unmet need must be taken with caution, however, and points out a classic limitation of the definition of unmet need. Women may revise their fertility desires – and therefore their categorization as having unmet need – based on whether they feel that they can actually act to limit their fertility. Women who are more remotely located or who are located near clinics of lower quality may feel that they have a lesser capability to limit their fertility. As a result, they may decide or rationalize that they would prefer to have an additional child and therefore be less likely to be classified as having unmet need. The impacts of facility characteristics would therefore be under-estimated.

The above estimations show us statistically significant relationships between modern contraception and unmet need and a set of factors potentially affecting them. However, they do not show us the magnitude of the effects. Was women’s education more important than having doctors at facilities? Was higher household income more important than having key drugs and supplies at clinics?

The probit estimation models can be used to isolate the effects of specific individual and facility characteristics, while holding all other factors constant. We use the estimated coefficients in the fully interacted model – estimation (3) in table A8.2 – to determine the magnitude of the impacts of these characteristics on the use of modern contraception. We distinguish between the effects in the former Transkei and those in other rural areas. These are shown in Figures 8.3 to 8.6 below.

Looking first at the use of modern contraception in the former Transkei (Figure 8.3), we note that the observed contraceptive prevalence rate was 35.5 percent of women. The difference in contraceptive use between women with a primary education and those with a secondary education – holding constant all other factors such as accessibility to services, quality, income, etc. – was approximately 8 percentage points; 32.5 percent of women with only a primary level education would use modern contraception as compared with 40.4 percent of women with a secondary education. Having no formal education – only 7 percent of women in the former Transkei never attended school – would be 13.7 percent contraceptive prevalence rate.

The majority of women in the former Transkei were in the lowest two asset quartiles. Being in higher asset quartiles caused significant increases in contraceptive use – by 3.7 percentage points for the second highest asset quartile (from 35.5 percent to 39.2 percent) and by 13.2 percentage points for being in the highest asset quartile (from 35.5 percent to 48.7 percent). If women in the former Transkei had the same level of wealth as women in other rural areas, contraceptive use would increase by 1.5 percentage points, from 35.5 percent to 37.0 percent. Other factors, such as being married, significantly reduced contraceptive use.

The impacts of improvements in facility characteristics were generally smaller but still noticeable for many of the observed characteristics (Figure 8.3). Facility capacity, as proxied by an index of 13 key supplies and equipment, was positively associated with contraceptive use. From a mean of 9 components (out of the 13 total components of the index), increasing supplies and equipment by two components was associated with a 2.4 percentage point increase, from 35.5 percent to 37.9 percent. If facilities had all 13 components, contraceptive use increased by an additional 2.4 percentage points to 40.4 percent of women. Greater availability of staff, specifically having all nursing posts filled, was also associated with greater use. Relative to having only 75 percent of nursing posts filled, having all nursing posts filled was associated with a CPR that was 5.2 percentage points higher (37.5 percent versus 32.3 percent). Interestingly, greater supervision by health officials was also associated with higher contraceptive prevalence rates. While the mechanism by which this effect would occur is unclear, facilities receiving supervision visits in the past 30 days were associated with contraceptive prevalence rates that were 5.6 percentage points higher than those that did not receive a supervision visit (39.1 percent versus 33.5 percent). On the other hand, other factors – the number of days per month that a doctor was present, family planning training, and distance from the enumeration area – had minimal effects on contraceptive use.

The effects of individual and facility characteristics on contraceptive use in non-Transkei rural areas were similar to those in the former Transkei (Figures 8.4 and 8.5). Higher levels of education and wealth and having a cash-earning job increased the likelihood of modern contraceptive use, while being married and not having a cash-earning job decreased the likelihood of use (Figure 8.4). Filled nursing posts and greater supervision of facilities also increased contraceptive use, though greater facility capacity, perversely, was associated with lower contraceptive use. Family planning training had a small effect – 1.6 percentage points (from 57.8 percent to 59.4 percent) on contraceptive use. Inexplicably, the effect of family planning training in the former Transkei was negative.

Regardless of the similar effects of individual and facility characteristics on contraceptive use in the former Transkei and other rural areas, contraceptive use was considerably higher – by 23.5 percentage points – in non-Transkei rural areas (59.0 percent) relative to the former Transkei (35.5 percent). As most of the individual characteristics and facility characteristics were similar in the two areas, the size of this gap is difficult to explain.

Figure 8.3 Simulated Effects on Use of Contraception from Changes in Individual Characteristics, Former Transkei

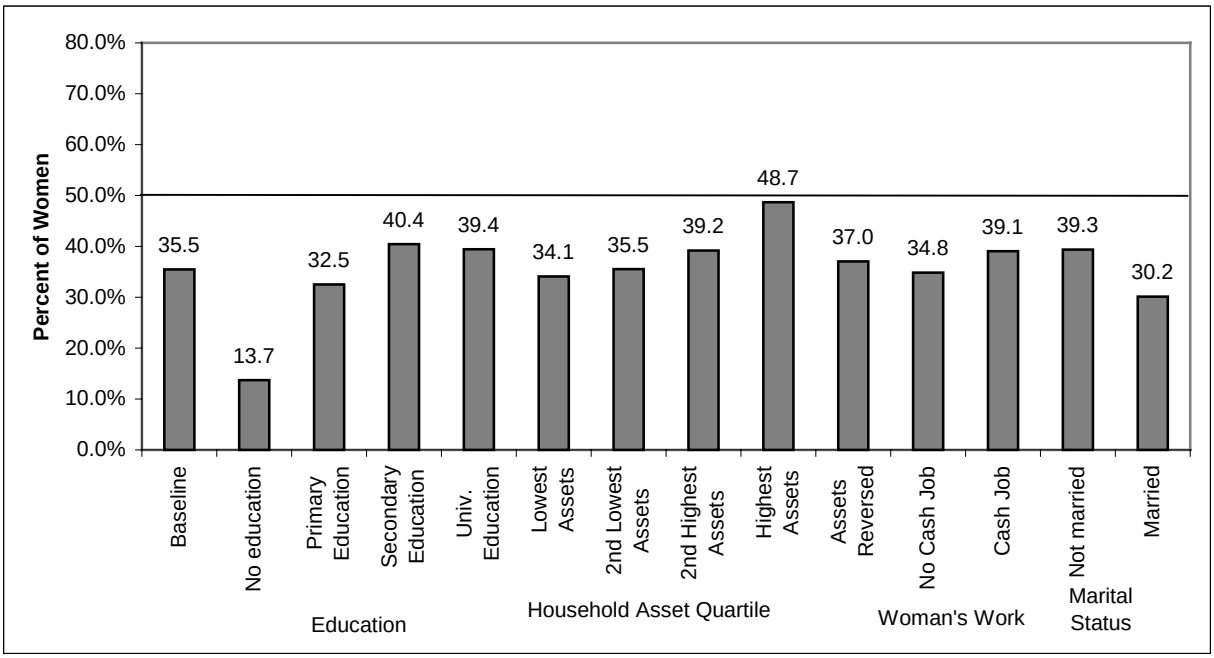


Figure 8.4 Simulated Effects of Changes in Facility Characteristics, Former Transkei

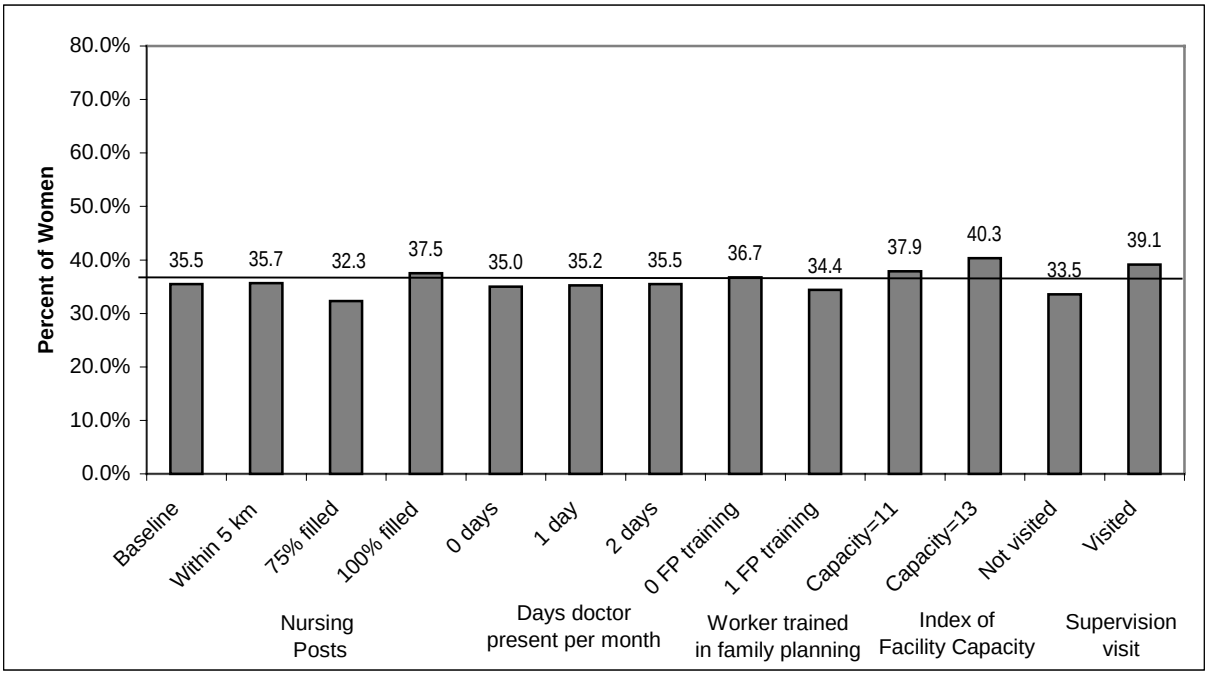


Figure 8.5 Simulated Effects on Use of Contraception from Changes in Facility Characteristics, Other Rural Areas

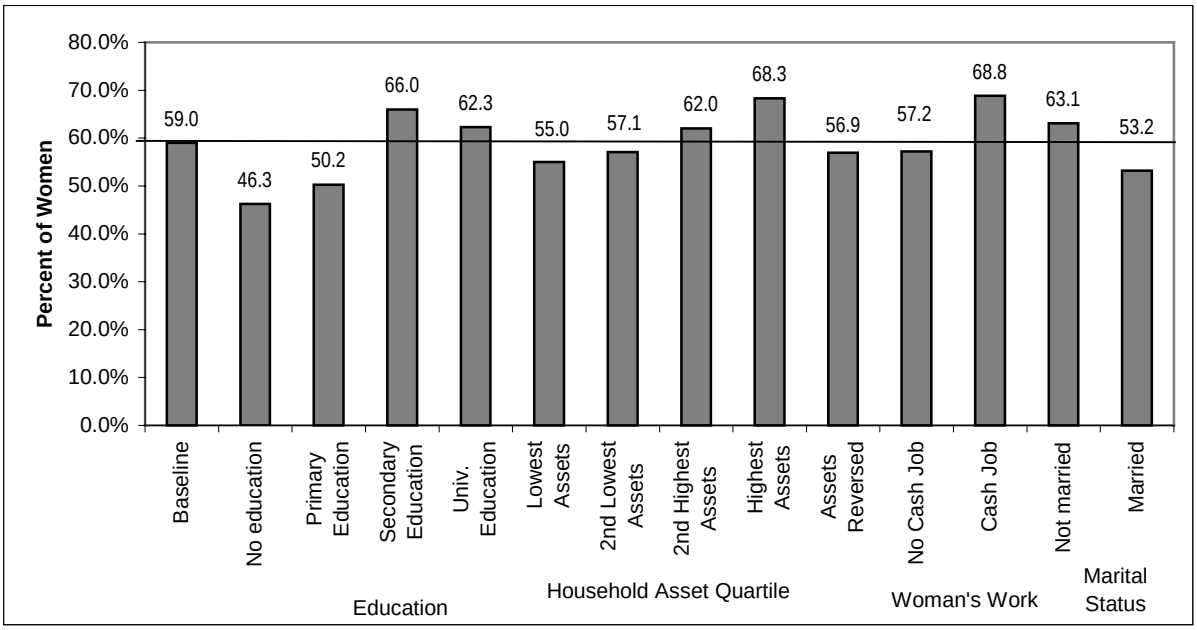
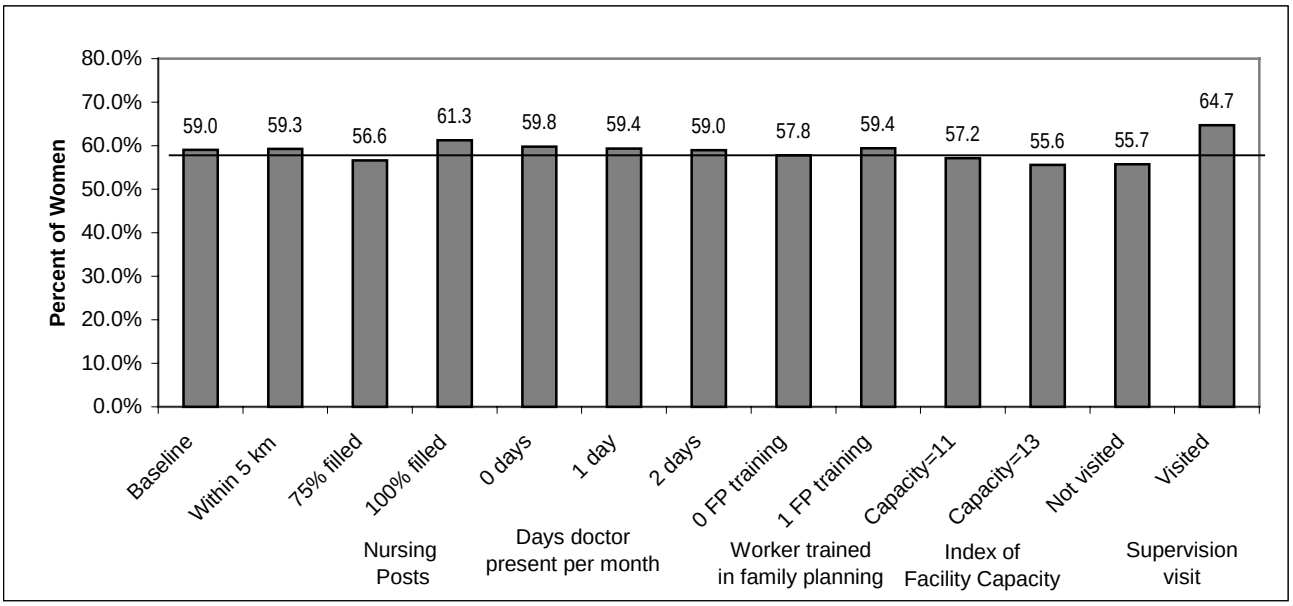


Figure 8.6 Simulated Effects of Changes in Facility Characteristics, other Rural Areas



8.2 Childhood Immunizations

A second set of estimations examined factors associated with whether or not children aged 12 to 35 months were immunized against various childhood illnesses (Table A8.4).[6] As with use of contraception, individual and household characteristics tended to be more statistically significant determinants of childhood immunizations than facility characteristics. Children in higher asset families were more likely to receive all antigens; children of married mothers were more likely to receive measles and all DPT3 vaccinations; and girls were less likely to be immunized than boys. Most notably, being in the former Transkei was negatively associated with immunization status for all antigens. Even so, several facility characteristics were associated with greater likelihoods that children were vaccinated. More specifically, having community health workers increased DPT3 vaccinations, while greater availability of EPI services, increased measles vaccinations. On the other hand, training in EPI had no significant impact on vaccinations.

Again, simulations were used to measure the differential impacts of the various factors affecting DPT3 vaccinations in the former Transkei and other rural areas (Figures 8.7-8.9). In the former Transkei, girls were 15 percentage points more likely to be vaccinated than boys. In contrast, girls in other rural areas were 16 percentage points less likely to be vaccinated. In other rural

[6] While data on childhood immunizations generally focus on the 12-to-23 month age group, this analysis used children 12-to-35 months in order to increase sample size.

areas, higher socioeconomic status had a positive effect on vaccination status; in the former Transkei, this effect was negative. As a test of unobservable factors associated with being in the former Transkei, one set of simulations tested the impacts of switching children in the two areas. This simulation indicated that children in the former Transkei actually do quite well – all other things considered – relative to children in other rural areas. In fact, if children in the former Transkei had the same levels of accessibility to services, the same levels of education, and the same levels of wealth, they would actually be more likely to be vaccinated than children in other rural areas actually are – 82.9 percent versus 70.6 percent. In contrast, children in other rural areas, if faced with the levels of accessibility, education, and wealth as those children in the former Transkei actually do, they would do considerably worse. Only 36.1 percent would receive their DPT3 vaccination, as compared with the observed value for former Transkei children of 62.8 percent.

Changes in facility characteristics also have different effects in the former Transkei and other rural areas. An increase in the percent of filled nursing posts from 75 percent to 100 percent would increase DPT3 vaccinations by 6.3 percentage points in other rural areas (from 68.4 percent to 74.7 percent) but by 14.1 percentage points in the former Transkei (from 54.6 percent to 68.7 percent). An additional worker trained in EPI would increase DPT3 vaccinations in the former Transkei from 54.8 percent to 63.4 percent. In both the former Transkei and other rural areas, in contrast, having CHWs would have a positive effect on DPT3 vaccinations.

Figure 8.7 Simulated Effects on DPT3 Vaccinations of Changes in Individual Characteristics, Children Aged 12-35 Months, Former Transkei

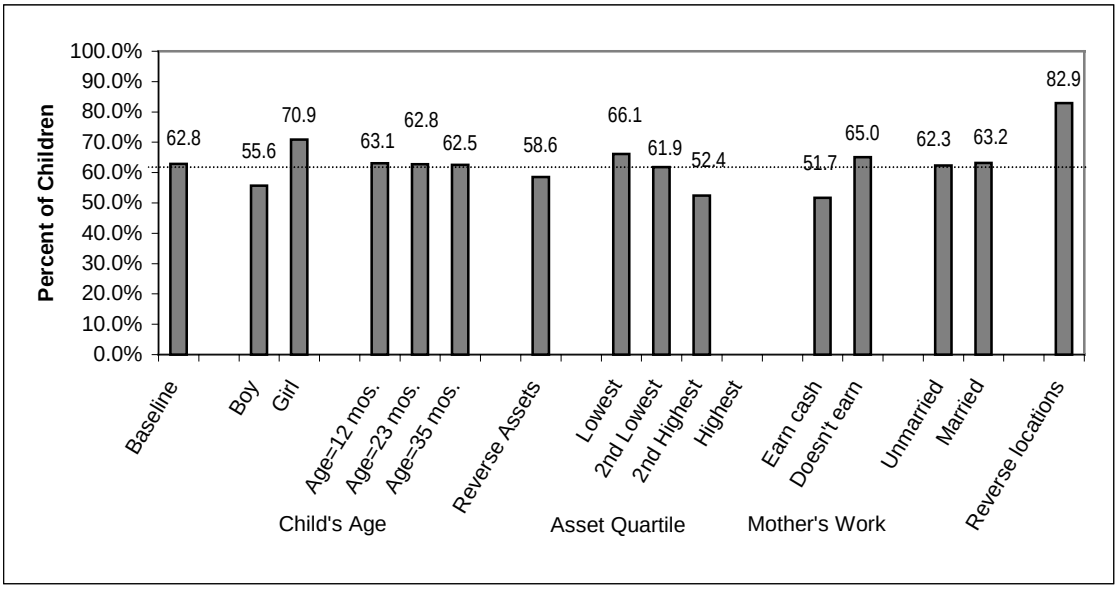


Figure 8.8 Simulated Effects on DPT3 Vaccinations of Changes in Individual Characteristics, Children Aged 12-35 Months, Other Rural Areas

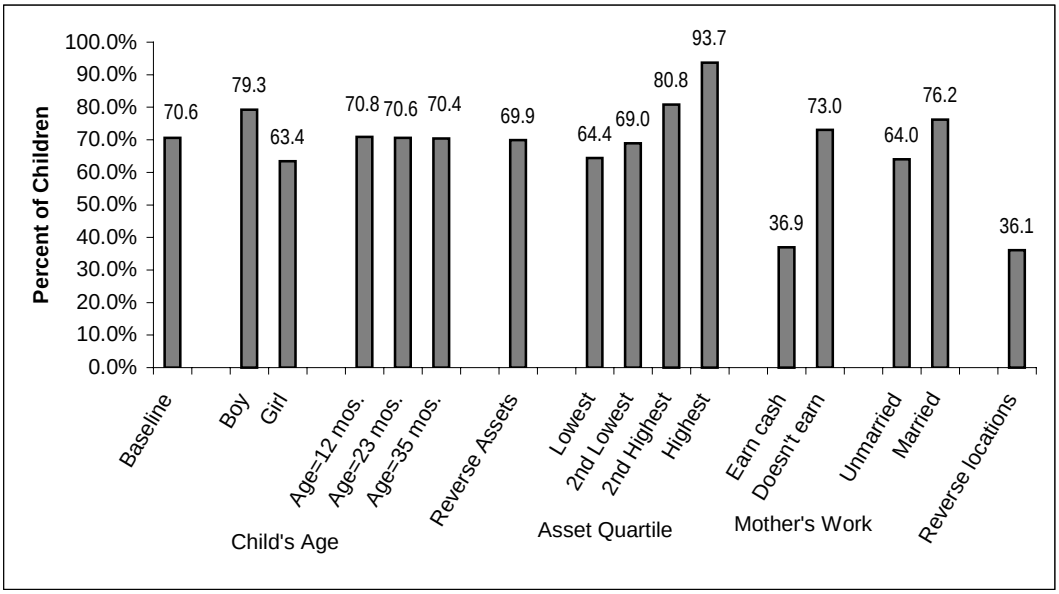
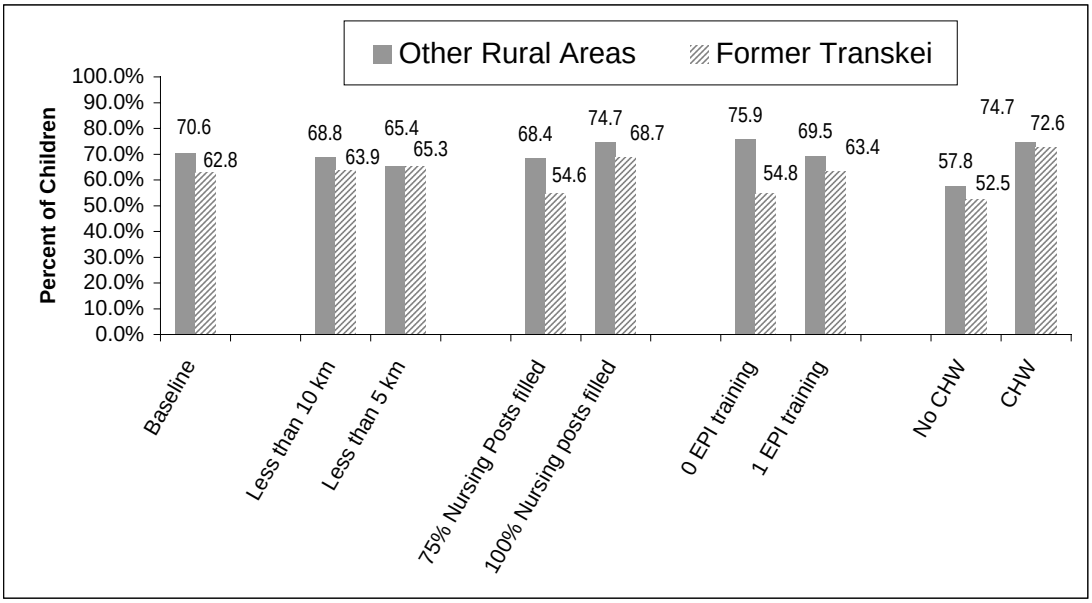


Figure 8.9 Simulated Effects on DPT3 Vaccinations of Changes in Facility Characteristics, Children Aged 12-35 Months, Other Rural Areas



8.3 Condom Last Sex

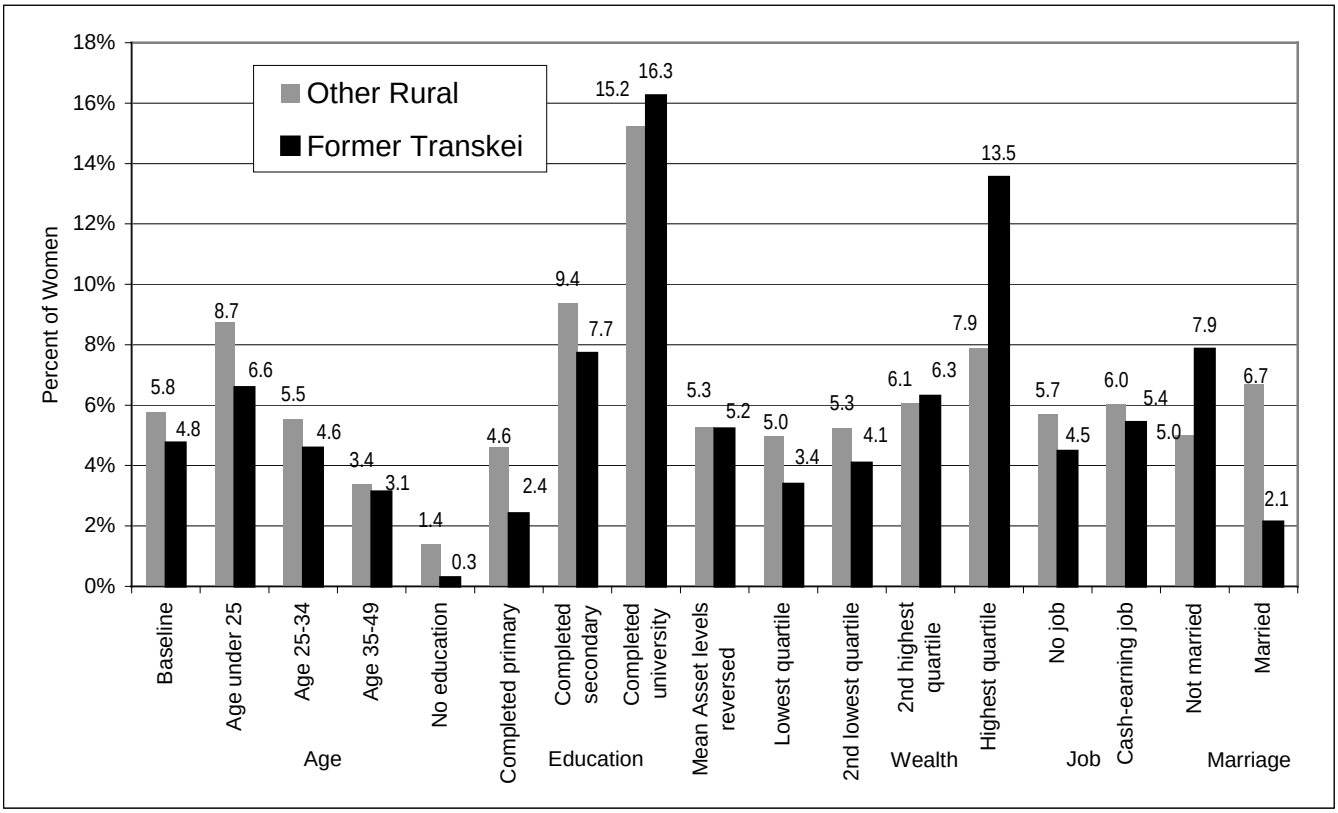
Significant government and EQUITY project efforts have been exerted to extend access to condoms in government clinics and elsewhere. Probit estimations were undertaken to examine the factors associated with whether a woman used a condom during her last sexual encounter, both in the former Transkei and in other rural areas (Table A8.5). Levels of condom use were low in both areas, but being in the former Transkei was associated with a one percentage point lower likelihood of using a condom than in other rural areas; the predicted probability that a woman in the former Transkei used a condom was 4.8 percent, as compared with 5.8 percent in other rural areas (Figure 8.10).

Women's characteristics played a significant role in determining who used a condom. Perhaps most importantly, wealth seemed to explain much of the difference in use between the two areas. When mean asset levels were reversed – that is, when the average asset level of women in other rural areas was assigned to women in the former Transkei and vice versa – the simulated probability of using a condom was nearly identical in the two types of women, approximately 5.2 percent to 5.3 percent. In general, greater wealth was considerably more important in the former Transkei than elsewhere. Women in the highest asset quartile in the former Transkei were 10 percentage points more likely to use a condom than women in the lowest asset quartile (13.5 percent versus 3.4 percent). In other rural areas, there was only a 2.9 percentage point difference in the probability of use (5.0 versus 7.9 percent) between the lowest and highest asset quartiles.

Even larger differences in the probability of use were apparent by educational level. For example, in the former Transkei completing secondary education (7.7 percent) was associated with a 7.4 percentage point greater likelihood of using a condom relative to having no education (0.3 percent) and a 5.3 percentage point greater likelihood relative to completing primary education (2.4 percent).

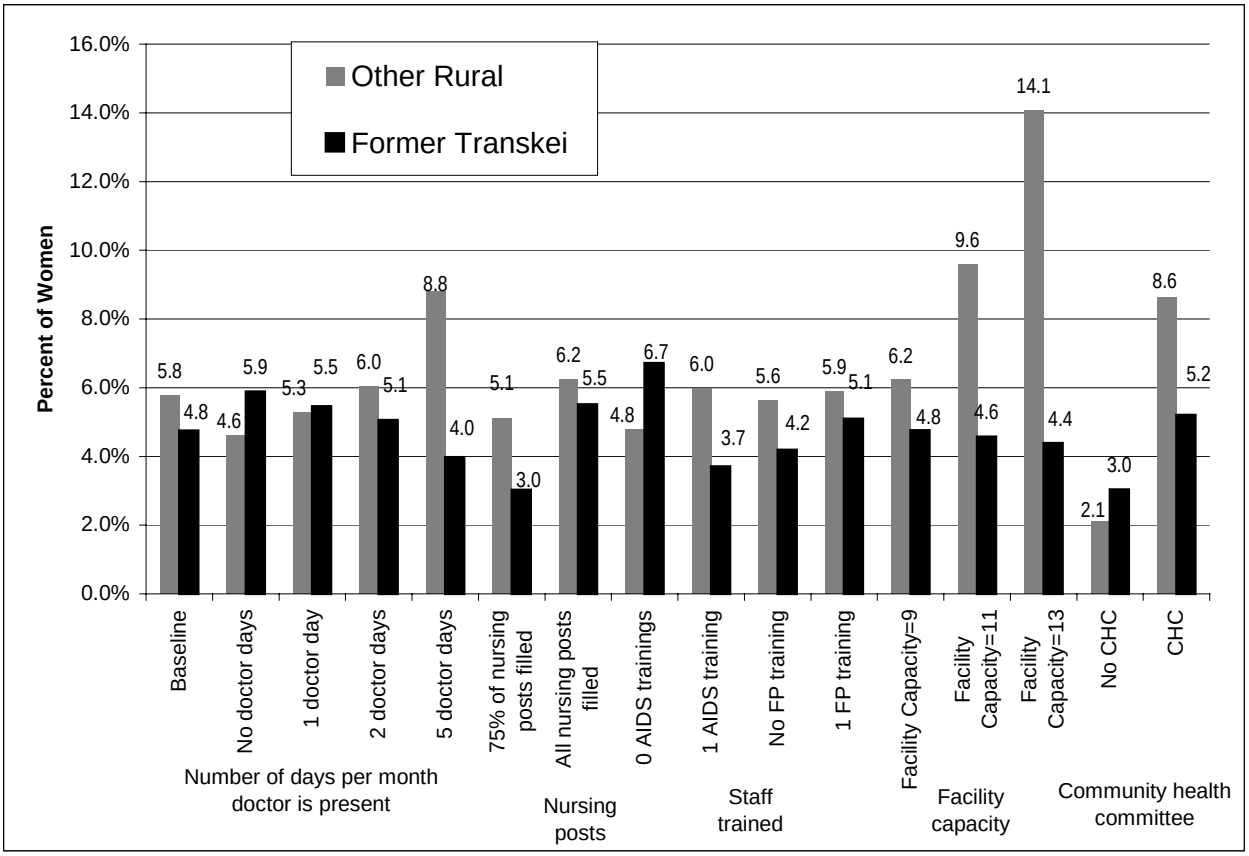
Being married reduced the likelihood of using a condom in the former Transkei but increased it elsewhere. Unmarried women in the former Transkei were 5.8 percentage points more likely to use a condom than married women (7.9 percent versus 2.1 percent). Having a cash earning job was associated with a modest increase in the likelihood of using a condom.

Figure 8.10 Simulated Effects on Use of Condom during Last Sex, Former Transkei and Other Rural Areas



Characteristics of the closest government clinic were also associated with greater likelihoods of condom use in both the former Transkei and other rural areas (Figure 8.11). Increasing the proportion of filled nursing posts at a clinic from 75 percent to 100 percent was associated with a 2.5 percentage point increase (to 5.5 percent from 3.0 percent) in the likelihood of using a condom in the former Transkei and a 1.1 percentage point increase (to 6.2 percent from 5.1 percent) in the likelihood of using a condom in other rural areas. Having a community health committee was associated with a likelihood of condom use 6.5 percentage points higher in other rural areas and 2.2 percentage points higher in the former Transkei. A staff member trained in family planning was associated with a 0.9 percentage point greater likelihood (5.1 percent verses 4.2 percent) of using a condom in the former Transkei (but only a 0.3 percentage point greater likelihood in other rural areas). In other rural areas, higher scores on the index of facility capacity were significantly associated with greater probabilities of condom use.

Figure 8.11 Simulated Effects on Use of Condom during Last Sex, Former Transkei and Other Rural Areas



8.4 Delivery Location, Adult Use of Government Services

Additional probit estimations were undertaken for whether or not a woman delivered a child in the past 5 years in a government clinic and whether or not adult men and women had used a government clinic in the past 30 days (Tables A8.6 and A8.7). These results were similar to those found above in two ways. First, being in the former Transkei was associated with a lower likelihood that government services were used – either adult use of a clinic in the past 30 days or delivery of a child at a government clinic – even when we controlled for the quality and availability of services at the clinic and for characteristics of the person, such as education and income. Second, in all estimations, clinic characteristics again affected whether a clinic was used. Recent training of health staff in HIV/AIDS positively affected both whether condoms were used and whether an adult used a government clinic. A higher proportion of nursing posts that were filled was associated with a greater likelihood that a woman delivered a baby at a government clinic. Higher scores on the index of facility capacity also affected whether condoms were used.

8.5 HIV/AIDS Knowledge

Examining factors associated with HIV/AIDS knowledge is slightly different than examining factors associated with different behavioral variables. Even so, we would expect that clinic characteristics could influence HIV/AIDS knowledge, perhaps through outreaches, health education on regular visits, or other mechanisms.

We ran ordinary least squares (OLS) estimations for a continuous dependent variable on a similar set of potential covariates as used in the earlier estimations. Several important points emerged from the OLS regression (Table A8.8). First, even controlling for factors such as income and education, women in the former Transkei scored relatively lower in knowledge of HIV/AIDS than women in urban non-Transkei areas, as did women in rural non-Transkei areas. Lesser exposure to media may be partly responsible for this, as women who had greater exposure to media (reading a newspaper once per week, watching TV once per week, and listening to the radio daily) in general had higher knowledge scores – although this may be a reflection not so much of media's impact but rather of a woman's motivation to obtain information. Further, even though the net effect of being in Transkei was to reduce knowledge scores, being in Transkei and having greater media exposure significantly increased knowledge scores independent of education effects. Second, there appeared to be a positive impact of greater facility quality on local HIV/AIDS knowledge. Specifically, women scored higher in HIV/AIDS knowledge if there had been recent training of health workers in HIV/AIDS at the local clinic and if the clinic scored higher in an index of facility capacity. However, it was not possible to know for certain whether a woman's knowledge was the direct result of contact with that clinic.

8.6 Discussion

In most of our estimations, we found some impact of facility characteristics on the use of government health services. Higher quality services, training, supervision, and more available staff all contributed in various cases to increasing the likelihood that services such as contraception or immunizations were used.

Oddly, the distance that a household lived from the nearest clinic played only a small role in determining whether health services were used. In only one case – adult use of a government clinic in the past 30 days – was distance statistically significant and of the expected sign. In that case, clinics that were closer to the enumeration area were more likely to be used by adults than clinics that were farther from enumeration areas. In at least one estimation, condom use during last sex, the direction of the influence was opposite to what would be expected. For the most part, however, there was generally neither a positive or negative statistically significant effect of distance on use.

One likely explanation for the non-significance of distance lies with the distance measure itself, which was the straight-line distance between the GPS location of a clinic and the GPS center of

an enumeration area. Precise household GPS locations were not collected in the SADHS, and therefore households were assumed to be randomly dispersed around this central point of an enumeration area. For most of the enumeration areas, the total diameter of an enumeration area was less than 1 kilometer. However, in many rural areas, enumeration areas had to be larger – in some extreme cases as much as 10 kilometers across – in order to obtain a sufficient number of households. The result was that while our distance measure was useful for determining which of the 621 clinics in our facility survey were closest to an enumeration area and perhaps for determining if a household used a clinic not in the enumeration area, it did not precisely measure how far households within that enumeration area had to travel to reach the clinic. In upcoming surveys, GPS data on precise household locations will be collected, and this problem should be resolved.

Table 8.1 Estimated effects of distance on use of services

Negative Effect A clinic is less likely to be used if it is farther away	Zero Effect Distance does not affect utilization	Positive Effect A clinic is more likely to be used if it is farther away
	Delivery care	
	AIDS knowledge	
Adult use of clinics	DPT3, polio, measles, full immunization coverage	Condom during last sex
	Modern contraception	
	Unmet need for family planning	

In most of the estimations, we also found that education and income played a part as well – even when we controlled for accessibility to services. This is not surprising but it also means that substantial inequities exist and that some people were not getting essential health services from the government and were likely to face higher fertility and overall worse health status as a result.

It was also found that being in the former Transkei almost universally meant a lower likelihood that health services were used independent of the effects of facility quality and availability and household income and education levels. This is perhaps surprising because often the predominant avenues through which utilization of health services are affected are through the education, income, and clinic quality variables. One possible explanation is that several of the variables referred to services that were used any time in the 5 years preceding the survey (delivery location) or 2-3 years prior to the survey (immunizations). If substantial changes

occurred in the former Transkei relative to other regions between the time that the services were used (or not used) and the time of the survey, then we would not have been precisely measuring the clinic and household characteristics at the time that decisions were made. For example, if we expect that substantial improvement in the quality of clinics occurred in the former Transkei between the end of apartheid in 1994 and the date of the survey, then using characteristics of clinics in 1998 to explain whether a woman in the former Transkei chose to deliver in a government clinic in 1995 would not precisely reflect the choice that she made in 1995. Unfortunately, there is no way around this. However, this is not likely to be the only explanation, and by repeating the surveys it is likely that we will be better able to examine how changes in clinic and household characteristics over time influence changes in behavior.

An additional use of the estimation results is to combine these data with data collected elsewhere on the costs of different reform strategies. In such a way, it is possible to perform basic calculations of the cost-effectiveness of different reform strategies. For example, using the results from the first estimations examining modern contraceptive use, we find a smaller impact on contraceptive use from increasing the number of days that a doctor is present at a clinic as compared with filling all nursing posts. However, adding an additional nurse full time at a clinic could be more expensive than having a doctor visit a few more days per month. As a result, the latter could be more cost-effective. Such analyses are possible but, without adequate data on the costs of different interventions, are beyond the scope of this work.

CHAPTER 9. CONCLUSION

This report has attempted to use data from the 1998 South Africa Demographic and Health Survey to illustrate the strong disparities within the Eastern Cape Province between different regions and population sub-groups. The differences are most stark regarding the former Transkei and other regions of the province. This should hardly be a surprise to those familiar with the province but perhaps the size of some of the disparities and the factors that affect those disparities are a cause for surprise.

This report has also pointed out some other interesting phenomenon. Among the Eastern Cape population, a unique epidemiological phenomenon is occurring. Residents of the Eastern Cape are afflicted by conditions generally seen later in the epidemiological transition – obesity, hypertension, heart problems – while children continue to be afflicted by basic childhood illnesses. One third of women are considered to be obese and approximately one fifth of adults are suffering from hypertension. Most of the latter group are not receiving treatment. Only half of all children are receiving the full set of vaccinations, and child mortality in some areas is akin to levels seen in countries of considerably lower income levels.

This report has also traced the impacts of facility quality and service availability on health behaviors and health outcomes. Results have been presented from multilevel analyses in which we link the 1998 South Africa Demographic and Health Survey with the 1998 Facility Audit of government clinics in the Eastern Cape. Results from these analyses indicate that individual, household and clinic characteristics influence the decision about whether to use available health services. On the individual side, the most important characteristics are wealth, as measured by our index of household assets, education, and location (urban, non-Transkei; rural, non-Transkei; Transkei). For nearly all health indicators, adults, women, and children in urban areas fare better than those in rural non-Transkei and Transkei areas. These effects are observed even when we control for the other factors, such as higher levels of education, wealth, and clinic quality and availability in urban areas. The differences between rural non-Transkei areas and the former Transkei are considerably smaller, but still measurable.

The multilevel results provide some reason for concern. In several of the estimations, training of health workers shows significant impacts on whether health services are used. However, the 1998 Facility Audit indicates that a disproportionate amount of training of health workers occurred in regions with already high health indicators rather than those areas where health indicators are the worst. This would seem to be contrary to what is necessary to redress regional inequities. Further, we find that staffing indicators – doctor days per month and percentage of nursing posts filled – significantly affect use of services. This means that, if additional doctors and nurses could be placed in the previously under-served areas of the former Transkei (either through redistribution or new hiring), we might expect significant improvements in health

outcomes. On the positive side, therefore, there is evidence that historical inequities can be redressed, at least in part, by improving the quality of health services and increasing the availability of trained staff.

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APPENDIX A. ADDITIONAL TABLES

Table A2.1 Housing characteristics

Background Characteristic	Urban	Rural	Alfred Nzo	Amatole	Chris Hani	Mandela	Oliver Tambo	Ukhah-lamba	Western	Total
Source of drinking water										
Piped into residence	38.2	3.4	0.5	22.1	13.7	36.4	1.3	12.6	40.1	17.7
Piped water in site/y	38.5	5.6	0.0	11.5	22.2	42.5	6.1	22.3	28.3	19.2
Public tap	21.2	19.8	45.1	17.7	29.3	9.6	14.2	35.5	18.2	20.4
Borehole/well	0.0	2.0	1.2	1.4	1.7	0.9	1.0	2.5	0.0	1.2
Dam/river/stream/spring	0.4	62.4	50.3	39.4	30.2	7.8	73.7	21.2	3.5	36.9
Rain-water tank	0.4	4.8	0.8	5.0	0.8	2.3	3.2	3.0	6.1	3.0
Water carrier/tanker	0.5	1.5	1.6	1.5	1.1	0.1	0.2	3.0	3.3	1.1
Other	0.5	0.0	0.5	0.4	0.0	0.4	0.0	0.0	0.0	0.2
Missing	0.5	0.5	0.0	1.1	0.9	0.0	0.2	0.0	0.6	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sanitation Facility										
Own flush toilet	58.5	1.7	0.0	29.1	15.2	68.1	4.0	0.0	34.6	25.1
Shared flush toilet	7.5	0.4	0.0	6.0	2.0	6.2	1.3	1.3	2.7	3.3
Bucket latrine	16.4	1.1	0.0	1.7	10.6	11.5	1.8	18.8	21.3	7.4
Pit latrine	10.4	52.4	74.8	29.1	42.1	6.0	42.1	61.4	30.7	35.1
No facility, bush/field	6.1	43.8	24.5	33.3	29.2	7.5	50.1	16.0	10.3	28.3
Other	0.7	0.1	0.0	0.2	0.0	0.6	0.1	2.0	0.0	0.3
Missing	0.6	0.5	0.8	0.6	0.8	0.2	0.5	0.5	0.4	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Floor material										
Earth, sand, dung	10.4	64.4	66.1	40.2	42.9	14.0	69.9	32.2	15.7	42.2
Bare wood planks	5.8	1.1	0.4	1.9	2.9	8.3	0.7	0.0	5.1	3.1
Cement	10.7	8.8	11.9	6.2	9.4	10.9	7.6	18.9	13.2	9.6
Vinyl	36.9	18.8	13.1	31.4	30.8	29.0	14.6	34.9	37.9	26.2
Carpet	29.9	6.0	8.5	17.5	12.3	30.5	6.1	11.8	22.8	15.9
Ceramic tiles	4.6	0.3	0.0	1.3	1.0	5.8	0.9	1.2	3.5	2.1
Parquet/polish wood	0.8	0.1	0.0	0.2	0.2	1.2	0.0	0.0	1.4	0.4
Other	0.3	0.1	0.0	0.0	0.0	0.4	0.0	1.2	0.0	0.1
Missing	0.5	0.4	0.0	1.3	0.6	0.0	0.2	0.0	0.4	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A2.1 Housing characteristics (continued)

Background Characteristic	Urban	Rural	Alfred Nzo	Amatole	Chris Hani	Mandela	Oliver Tambo	Ukhah-lamba	Western	Total
Main Wall Material										
Plastic/Cardboard	8.5	0.4	0.4	3.1	2.0	9.9	0.4	4.0	6.9	3.7
Mud	7.7	63.6	72.4	36.1	42.7	7.4	70.3	32.6	14.9	40.6
Mud and Cement	4.8	15.8	17.5	10.6	11.4	3.2	17.1	15.2	6.7	11.3
Corrugated Iron/Zinc	12.3	1.1	0.5	5.7	2.2	16.2	0.3	9.4	4.9	5.7
Prefab	0.6	0.3	0.0	1.3	0.0	0.7	0.0	0.0	0.4	0.4
Bare Brick/ Cement Block	11.2	3.7	3.3	7.8	6.6	8.9	2.9	12.5	10.3	6.8
Plaster/Finished	53.8	14.7	5.9	33.9	34.4	52.1	8.9	26.4	55.9	30.8
Other	0.9	0.1	0.0	0.7	0.2	1.4	0.0	0.0	0.0	0.4
Missing	0.3	0.3	0.0	0.6	0.7	0.2	0.1	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Rooms for sleeping										
1	35.7	30.9	25.4	38.0	33.4	27.6	28.5	39.0	49.6	32.8
2	40.5	35.4	37.6	36.8	35.4	44.3	35.4	34.6	34.5	37.5
3	17.3	21.8	24.1	16.7	22.1	21.5	21.3	17.7	12.0	20.0
4+	6.6	11.9	12.9	8.5	9.1	6.6	14.8	8.7	3.9	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Assets (percent of households with)										
Electricity	71.8	14.7	4.5	35.6	43.1	68.0	14.3	35.2	67.3	38.2
Radio	80.6	69.5	72.5	76.6	75.2	78.1	67.6	70.9	79.1	74.1
Television	64.5	21.0	17.9	41.1	37.1	64.7	20.5	27.7	57.0	38.9
Refrigerator	53.6	8.9	5.9	27.4	23.5	55.7	8.8	23.0	44.4	27.3
Bicycle	14.1	5.9	4.7	6.7	11.2	14.7	3.8	10.1	18.3	9.2
Motorcycle	2.6	0.5	0.8	2.1	1.4	1.7	0.0	0.5	4.0	1.3
Car	27.3	5.2	3.9	14.8	13.6	27.3	4.8	7.0	27.0	14.3
Washing machine	24.4	0.6	0.0	11.0	8.2	25.7	0.8	0	23.0	10.4
Personal computer	7.5	0.3	0.4	3.9	3.3	7.0	0.2	0	7.5	3.3
Donkey/horse	0.5	10.0	15.7	5.0	7.9	0.5	9.2	4.0	1.0	6.1
Sheep/cattle	2.1	41.2	41.3	24.3	36.4	4.7	35..3	27.0	2.2	25.1
N	1312	1874								

Table A3.1 Children ever born

	0	1	2	3	4	5	6	7	8	9	10+	Total	N	Mean Children Ever Born	Mean Living Children
Age Group															
15-19	85.2	13.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	649.2	0.2	0.1
20-24	45.3	37.3	13.0	4.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100	475.0	0.8	0.7
25-29	16.7	32.5	28.4	11.7	6.5	2.7	1.1	0.0	0.2	0.0	0.2	100	367.1	1.8	1.6
30-34	5.4	16.5	24.1	23.6	16.2	7.4	4.3	2.0	0.5	0.0	0.0	100	355.2	2.8	2.6
35-39	4.8	11.0	18.3	18.6	15.5	13.8	7.8	5.4	2.8	1.2	0.7	100	370.4	3.6	3.2
40-44	5.9	10.9	18.1	14.2	14.2	15.7	7.7	7.2	2.8	0.8	2.5	100	313.7	3.8	3.3
45-49	4.6	7.0	15.0	17.8	14.0	10.8	11.0	5.7	5.4	4.6	4.0	100	225.3	4.3	3.6
Education															
None	4.0	12.3	15.2	14.0	12.9	11.9	13.4	5.0	5.3	3.6	2.5	100	139.7	4.1	3.4
Sub A-Std 3	22.6	12.6	12.9	14.2	10.7	8.8	7.8	4.3	3.1	1.3	1.8	100	345.1	3.0	2.5
Std 4-Std 5	31.0	14.6	13.6	10.4	11.5	7.8	3.9	2.8	2.0	1.2	1.2	100	509.4	2.4	2.2
Std 6-Std 9	38.2	20.9	13.9	10.4	6.5	5.0	2.2	1.9	0.4	0.1	0.4	100	1263	1.7	1.5
Std 10	38.9	25.7	21.9	7.2	3.8	1.7	0.4	0.4	0.0	0.0	0.0	100	310.1	1.2	1.1
11+	26.9	30.2	20.6	12.5	4.9	2.9	1.1	0.5	0.5	0.0	0.0	100	188.3	1.6	1.5
Residence															
Urban	32.6	20.9	19.8	12.9	7.9	3.1	1.4	0.4	0.6	0.2	0.1	100	1105	1.7	1.5
Rural	33.6	19.3	13.2	9.7	6.8	8.7	4.2	2.4	1.3	0.5	0.5	100	695	2.1	1.9
Former Transkei	31.6	17.8	11.1	9.4	8.6	7.0	5.5	4.3	2.0	1.2	1.6	100	956	2.4	2.1
District															
Alfred Nzo	29.8	17.3	9.0	12.9	8.1	4.8	7.7	5.3	2.6	0.9	1.8	100	199	2.6	2.2
Amatole	34.1	21.5	16.3	11.0	6.8	5.1	3.3	1.0	0.5	0.4	0.2	100	460	1.8	1.7
Chris Hani	34.8	17.8	15.2	9.9	7.1	8.7	2.9	1.8	0.7	0.2	1.0	100	387	2.0	1.8
Mandela	34.6	19.4	18.1	11.9	9.0	3.5	1.4	0.8	0.9	0.4	0.0	100	621	1.7	1.6
O. Tambo	32.1	17.9	11.7	8.5	8.7	7.6	4.9	4.0	1.9	1.3	1.6	100	757	2.4	2.1
Ukwahlamba	31.5	21.2	15.8	11.4	8.1	4.2	4.3	1.6	2.1	0.0	0.0	100	168	1.9	1.8
Western	21.0	25.4	23.4	16.9	4.2	5.3	1.5	1.3	0.5	0.5	0.0	100	164	1.9	1.8
Asset Quartile															
Poorest	30.6	19.0	12.8	9.1	6.7	7.6	6.0	4.2	1.8	1.0	1.2	100	590	2.4	2.0
2nd Poorest	30.8	17.5	11.3	103	7.7	8.3	5.1	3.6	1.9	0.8	1.4	100	686	2.4	2.1
2nd Wealthiest	32.4	22.5	15.5	11.2	7.7	5.0	2.6	1.2	0.6	0.8	0.4	100	707	1.8	1.7
Wealthiest	35.5	18.5	20.0	12.4	7.9	3.1	1.0	0.6	0.8	0.0	0.2	100	773	1.6	1.5
Total	32.5	19.4	15.1	10.9	7.9	5.9	3.5	2.3	1.2	0.6	0.7	100		2.03	1.8

Table A3.2 Birth intervals for non-first births in the 5 years preceding the survey

Background Characteristic	7-17 mos.	18-23 mos.	24-35 mos.	36-47 mos.	48+ mos.	Total	N	Median Number of Months Since Previous Birth
Age Group								
15-19	12.5	37.5	37.5	12.5	0.0	100.0	7.3	24
20-29	9.8	12.3	27.4	22.9	27.6	100.0	325.7	36
30-39	6.7	9.6	25.6	14.5	43.5	100.0	497.7	69
40+	7.5	8.3	8.6	16.5	59.1	100.0	126.3	56
Birth Order								
2nd-3rd	6.7	9.1	21.5	17.5	45.2	100.0	475.9	44
4th-6th	7.0	11.2	26.2	18.0	37.6	100.0	368.2	38
7th+	16.2	14.6	27.9	16.9	24.4	100.0	112.9	31
Sex of Previous Birth								
Male	8.5	11.2	23.2	16.0	41.1	100.0	480.2	40
Female	7.3	9.9	25.0	19.3	38.5	100.0	476.8	39
Survival of prior birth								
Dead	22.6	22.1	26.2	8.9	20.2	100.0	86.0	26
Living	6.5	9.4	23.9	18.5	41.8	100.0	871.0	41
Residence								
Urban	4.7	5.2	17.8	13.6	58.6	100.0	243	56
Rural	6.9	10.7	21.5	18.4	42.5	100.0	239	41
Former Transkei	10.1	13.1	28.7	19.4	28.8	100.0	477	35
District								
Alfred Nzo	16.2	13.5	22.5	17.7	30.1	100.0	81.5	34
Amatole	5.9	11.5	19.2	19.1	44.3	100.0	129.5	44
Chris Hani	10.0	6.3	23.9	15.8	44.0	100.0	115.6	41
Mandela	4.3	6.0	17.9	12.4	59.5	100.0	152.1	55
Oliver Tambo	8.8	13.0	30.0	19.7	28.5	100.0	396.2	35
Ukwahlamba	4.4	11.7	21.2	16.8	45.8	100.0	49.9	39
Western District	0.0	4.0	9.7	17.6	68.7	100.0	32.1	68
Ethnicity								
Black/African	8.3	11.1	24.8	17.8	38.0	100.0	870.4	38
Colored	0.0	4.8	9.6	17.8	67.8	100.0	53.2	68
White	5.0	5.0	28.4	9.9	51.8	100.0	25.7	49
Missing	35.8	11.9	23.8	16.6	11.9	100.0	7.7	24
Asset Quartile								
Poorest	9.6	12.2	26.2	19.6	32.4	100.0	281	37
2nd Poorest	9.8	12.5	28.9	19.1	29.8	100.0	316	35
2nd Wealthiest	7.0	9.0	18.6	16.7	48.7	100.0	203	45
Wealthiest	2.4	5.6	18.1	12.8	61.1	100.0	160	57
Education								
None	8.8	14.4	24.7	21.8	30.2	100.0	83.0	36
Sub A – Std 3	10.3	11.3	23.6	21.0	33.8	100.0	169.0	38
Std 4 - Std 5	7.1	11.2	25.8	17.8	38.1	100.0	213.3	37
Std 6 - Std 9	8.1	9.7	24.7	17.7	39.8	100.0	378.0	40
Std 10	3.4	6.1	16.3	8.2	66.0	100.0	80.6	65
11+	8.3	13.3	25.4	10.5	42.5	100.0	33.1	38
Total	7.9	10.6	24.1	17.6	39.8	100.0	957.0	40

Table A3.3 Teenage motherhood and pregnancy

	Percentage who are mothers	Percentage pregnant with first Child	Percentage who have begun child-bearing	N
Age				
15	0.0	1.6	1.6	132
16	9.3	2.8	11.4	143
17	11.8	3.1	14.9	144
18	19.8	2.6	21.8	149
19	40.0	5.7	44.8	97
Residence				
Urban	9.7	1.8	11.5	206
Rural	15.4	2.6	17.6	204
Former Transkei	18.5	4.3	22.0	256
Education				
None	0.0	0.0	0.0	1
Sub A - Std 3	17.7	4.9	21.0	55
Std 4 - Std 5	14.2	3.8	17.3	147
Std 6 - Std 9	14.7	2.8	17.3	418
Std 10	9.3	0.0	16.9	36
11+	14.8	0.0	9.3	10
Ethnicity				
Black/African	15.0	3.4	18.0	595
Coloured	16.1	0.0	16.1	50
White	6.7	0.0	6.7	19
Asian/Indian	0.0	0.0	0.0	1
Missing	0.0	0.0	0.0	1
District				
Alfred Nzo	19.7	0.0	19.7	46
Amatole	9.1	0.8	9.9	107
Chris Hani	14.1	0.9	15.0	104
Mandela	10.5	1.7	11.5	124
Oliver Tambo	18.2	5.2	22.5	211
Ukwahlamba	13.6	8.8	22.4	49
Western District	28.5	3.5	32.0	26
Asset Quartile				
Lowest	20.3	3.7	23.0	168
2nd Lowest	18.3	3.9	21.8	177
2nd Highest	13.0	3.4	16.3	164
Highest	6.9	0.8	7.7	157
Total	14.8	3.0	17.4	666

Table A4.1 Knowledge of methods, ever use and current use of methods

Contraceptive Method	Knows Method			Ever Used			Currently Using		
	All	Currently Married	Sexually Active	All	Currently Married	Sexually Active	All	Currently Married	Sexually Active
ANY METHOD	97.3	98.5	99.2	71.4	77.0	84.7	47.7	46.4	60.2
ANY MOD. METHOD	97.3	98.4	99.2	70.9	76.2	84.3	47.4	45.9	59.9
Pill	94.6	96.6	97.2	33.5	39.7	41.7	6.4	6.0	9.0
IUD	61.5	71.6	69.9	4.0	7.1	6.2	0.7	1.4	1.4
Injections	95.9	97.3	98.1	59.4	59.4	68.7	31.4	22.9	36.6
Diaph. Foam Jelly	10.1	14.9	13.9	0.4	0.5	0.5	0.0	0.0	0.0
Condom	87.5	87.4	91.8	10.1	9.7	13.9	1.1	1.1	1.4
Female Sterilization	54.5	69.3	64.7	7.0	12.3	9.7	7.0	12.3	9.7
Male Sterilization	23.8	32.1	30.8	0.8	2.2	1.9	0.8	2.2	1.9
ANY TRAD. METHOD	21.7	28.8	27.2	4.1	6.6	5.6	0.2	0.4	0.2
Periodic Abstinence	14.4	19.7	18.6	1.9	3.0	2.4	0.1	0.2	0.1
Withdrawal	17.4	23.7	22.4	3	5.1	4.1	0.1	0.2	0.1
Herbs	5.9	7.7	8.3	0.3	0.2	0.5	0.0	0.0	0.0
Other	0.8	1.0	0.8	0.3	0.5	0.3	0.1	0.1	0.1
Number of Women	2756	1038	1182	2756	1038	1182	2756	1038	1182

Table A4.2 Percentage of women using modern contraception

Background Characteristic	All Women	Married	Sexually Active
Age Group			
15-19	36.7	40.8	74.8
20-24	53.7	37.7	66.4
25-29	58.9	49.8	63.0
30-34	55.0	46.3	59.7
35-39	51.9	50.3	56.2
40-44	45.0	47.1	55.3
45-49	30.8	37.7	37.3
Region			
Urban-not Transkei	62.8	66.9	73.1
Rural-not Transkei	48.2	44.2	60.6
Former Transkei	29.2	25.2	35.7
District Council			
Alfred Nzo	19.0	22.6	24.3
Amatole	58.4	51.7	69.7
Chris Hani	49.4	47.9	61.1
Mandela	56.5	60.9	67.5
Oliver Tambo	31.9	26.2	38.4
Ukhahlamba	58.7	60.3	71.0
Western District	72.7	76.9	84.6
Race			
Black	45.9	40.0	56.4
Colored	52.5	62.6	71.1
White/Asian	65.7	82.6	84.0
Other	24.7	11.6	14.7
Education			
No education	22.5	23.3	29.4
Sub A-Std 3	39.1	38.9	46.7
Std 4 – Std 5	40.7	36.7	48.5
Std 6 – Std 9	49.8	47.9	64.0
Std 10	58.9	63.2	74.3
11+	66.3	72.5	76.7
Asset Index			
Lowest Quartile	34.1	27.6	43.6
2nd Lowest Quartile	35.8	32.3	43.6
2nd Highest Quartile	53.7	47.0	60.6
Highest Quartile	62.2	71.3	78.1
Total	47.5	45.9	59.9
Number	2756	1038	1182

Table A4.3 Use of modern contraception by type, sexually active women

Background Characteristic	MODERN METHODS							TRADITIONAL			Not Using	Total
	Modern Method	Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization	Abstinence	Withdrawal	Other		
Age Group												
15-19	74.8	8.4	0.0	64.2	2.3	0.0	0.0	0.0	0.6	0.0	24.5	100.0
20-24	66.4	12.6	1.1	50.9	1.8	0.0	0.0	0.0	0.0	0.5	33.1	100.0
25-29	63.0	11.0	0.7	47.0	0.0	3.7	0.7	0.0	0.0	0.0	37.0	100.0
30-34	59.7	10.3	2.3	34.5	3.0	6.8	2.8	0.0	0.0	0.0	40.3	100.0
35-39	56.2	6.4	3.3	26.1	0.4	17.3	2.7	0.5	0.4	0.0	42.9	100.0
40-44	55.3	6.6	0.7	19.5	1.8	22.2	4.5	0.0	0.0	0.0	44.7	100.0
45-49	37.3	6.4	0.0	7.5	0.0	21.1	2.3	0.0	0.0	0.0	62.7	100.0
Residence												
Urban –non Transkei	73.1	10.0	2.7	41.8	1.4	13.5	3.7	0.2	0.0	0.0	26.7	100.0
Rural-non Transkei	60.6	10.1	0.0	41.6	0.9	7.7	0.3	0.0	0.0	0.0	39.5	100.0
Former Transkei	35.8	6.2	0.3	22.8	1.7	4.8	0.0	0.0	0.5	0.3	63.5	100.0
District Council												
Alfred Nzo	24.3	2.7	0.0	14.9	2.7	4.1	0.0	0.0	0.0	1.35	74.3	100.0
Amatola	69.7	8.8	0.5	49.6	2.1	8.1	0.52	0.0	0.0	0.0	30.3	100.0
Chris Hani	61.1	9.2	1.5	39.2	0.5	9.4	1.3	0.0	0.0	0.0	38.9	100.0
Mandela	67.5	10.0	3.4	35.7	1.1	12.4	4.9	0.38	0.0	0.0	32.2	100.0
Oliver Tambo	38.4	7.0	0.3	24.7	1.4	5.0	0.0	0.0	0.7	0.0	60.9	100.0
Ukhahlamba	71.0	14.1	0	43.1	2.7	11.1	0.0	0.0	0.0	0.0	29.0	100.0
Western District	84.6	11.8	1.3	46.5	0.0	21.3	3.8	0.0	0.0	0.0	15.4	100.0
Education												
None	29.4	1.6	0.0	14.5	0.0	13.2	0.0	0.0	0.0	0.0	70.6	100.0
Sub A-Std 3	46.7	6.7	0.0	27.1	0.5	12.3	0.0	0.0	0.5	0.0	52.8	100.0
Std 4 - Std 5	48.5	2.9	0.0	35.6	0.4	9.6	0.0	0.0	0.0	0.0	51.5	100.0
Std 6 - Std9	64.0	8.3	1.2	43.5	1.8	7.7	1.7	0.2	0.0	0.2	35.5	100.0
Std 10	74.3	14.1	4.6	39.0	0.6	9.9	6.2	0.0	0.6	0.0	25.2	100.0
11+	76.7	23.3	3.1	28.7	4.3	13.2	4.1	0.0	0.0	0.0	23.3	100.0

Table A4.3 Use of modern contraception by type, sexually active women (continued)

Background Characteristic	Modern Method	MODERN METHODS Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization	TRADITIONAL Abstinence	Withdrawal	Other	Not Using	Total
Race												
Black	56.4	7.1	0.1	39.9	1.0	8.3	0.0	0.1	0.2	0.1	43.2	100.0
Colored	71.1	9.3	4.9	37.3	3.0	14.6	2.0	0.0	0.0	0.0	28.9	100.0
White	85.4	29.1	9.5	4.1	4.1	15.9	22.7	0.0	0.0	0.0	14.6`	100.0
Asian	66.7	16.7	16.7		0.0	33.3	0.0	0.0	0.0	0.0	33.3	100.0
Missing	14.7	0.0	0.0		0.0	14.7	0.0	0.0	0.0	0.0	85.3	100.0
Ethnicity												
Black Urban	69.6	6.5	0.0	50.8	0.5	11.8	0.0	0.3	0.0	0.0	30.1	100.0
Black Rural	45.2	7.7	0.2	30.7	1.3	5.4	0.0	0.0	0.3	0.2	54.3	100.0
Income Quartile												
Lowest	43.7	6.0	0.0	32.1	1.3	4.3	0.0	0.0	0.0	0.4	55.6	100.0
2nd Lowest	43.6	7.5	0.0	31.5	0.0	4.6	0.0	0.0	0.3	0.0	56.1	100.0
2nd Highest	60.7	6.1	0.6	42.7	1.4	9.9	0.0	0.0	0.0	0.0	39.4	100.0
Highest	78.0	13.9	3.6	36.9	2.3	15.7	5.6	0.3	0.0	0.0	21.6	100.0
Working												
Yes	60.2	11.4	2.0	29.0	2.6	13.5	1.7	0.2	0.0	0.0	39.6	100.0
No	43.7	5.0	0.3	32.1	0.7	5.1	0.6	0.0	0.1	0.1	56.0	100.0
Total	59.9	9.0	1.4	36.6	1.4	9.7	1.9	0.1	0.1	0.1	39.8	100.0

Table A4.4 Source of modern contraception (all users)

Source of Method	Pill	IUD	Injections	Condom	Female Sterilization	Male Sterilization	All Modern Methods
Public Sector	84.7	55.7	97.0	80.4	89.3	46.6	92.3
Government Hospital	20.5	24.5	33.1	28.7	86.1	41.2	39.1
Day Hospital/Clinic	37.1	11.3	38.5	35.4	3.2	5.3	32.1
Family Planning Clinic	21.3	19.8	18.7	13.5	0.0	0.0	15.9
Mobile Clinic	5.8	0.0	6.6	2.8	0.0	0.0	5.3
Private Medical	13.9	44.3	2.5	7.8	10.1	53.4	6.8
Private hospital/Clinic	0.0	6.6	0.1	0.0	9.5	53.4	2.4
Pharmacy	5.1	0.0	0.0	7.8	0.0	0.0	0.9
Private Doctor	8.8	37.0	2.4	0.0	0.6	0.0	3.4
Shop	0.0	0.0	0.0	3.9	0.0	0.0	0.1
Friends, Relatives	0.0	0.0	0.0	3.9	0.0	0.0	0.1
Other	0.7	0.0	0.1	0.0	0.0	0.0	0.2
Missing	0.7	0.0	0.4	3.9	0.6	0.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A4.5 Number of children at first use of contraception

Age Group	Never use	0	1	2	3	4+	Missing	Total	Mean Number of Children at First Use	N
15-19	53.8	40.6	5.3	0.0	0.0	0.0	0.3	100	0.11	649
20-24	26.5	44.9	23.6	3.7	1.3	0.0	0.0	100	0.47	475
25-29	14.6	46.1	26.5	7.2	3.9	1.5	0.2	100	0.69	367
30-34	16.0	29.0	31.7	12.1	5.7	5.2	0.3	100	1.12	355
35-39	18.3	28.7	26.4	11.1	6.5	8.8	0.3	100	1.27	370
40-44	23.2	19.4	20.6	12.8	9.5	14.1	0.4	100	1.71	314
45-49	27.0	15.5	17.5	17.3	6.6	16.1	0.0	100	1.87	225
Total	28.6	34.5	20.2	7.5	4.0	5.0	0.2	100	0.94	2756

Table A4.6 Unmet need for family planning services among married women

	Unmeet Need for Spacing	Unmeet Need to Limit	Total Unmet Need	Using to Space	Using to Limit	Total Met Need	Desire Birth < 2 Years	Infecund, Menopausal	Total	Pct. of Demand Satisfied	N
Age Group											
15-19	14.9	0.0	14.9	30.6	10.2	40.8	44.2	0.0	100	73%	26
20-24	10.3	5.1	15.4	24.8	14.0	38.8	41.3	4.5	100	72%	86
25-29	5.4	7.0	12.4	20.3	29.4	49.8	30.7	7.1	100	80%	161
30-34	7.3	18.6	25.9	7.6	39.6	47.2	17.5	9.4	100	65%	196
35-39	3.0	23.9	26.9	5.2	46.0	51.2	15.1	6.8	100	66%	244
40-44	3.3	20.1	23.4	2.3	44.8	47.1	5.9	23.7	100	67%	183
45-49	0.0	18.4	18.4	0.0	37.8	37.8	5.2	38.6	100	67%	142
Residence											
Urban	2.2	13.6	15.8	12.6	54.6	67.2	9.5	7.6	100	81%	390
Rural	5.8	14.2	20.0	8.1	36.5	44.5	21.6	13.9	100	69%	274
Former Transkei	6.6	21.8	28.4	6.0	19.9	26.0	24.0	21.7	100	48%	373
Education											
None	5.8	23.5	29.3	3.5	19.8	23.3	17.7	29.7	100	44%	77
Sub A - Std 3	4.2	19.7	23.9	4.6	33.4	38.0	19.2	19.0	100	61%	169
Std 4 - Std 5	5.6	18.6	24.3	6.7	32.1	38.8	21.5	15.5	100	62%	226
Std 6 - Std 9	5.3	16.7	22.0	11.1	37.4	48.5	17.5	12.0	100	69%	372
Std 10	2.3	6.9	9.2	13.4	50.5	63.9	18.3	8.6	100	87%	115
11+	3.1	12.5	15.7	14.7	57.8	72.5	6.5	5.4	100	82%	79
Ethnicity											
Black/African	5.1	18.0	23.1	8.3	32.3	40.6	20.0	16.4	100	64%	828
Colored	4.8	14.6	19.4	9.3	53.4	62.6	11.7	6.2	100	76%	102
White	1.4	6.6	8.0	15.0	68.7	83.6	4.2	4.2	100	91%	88
Asian/Indian	0.0	0.0	0.0	14.3	57.1	71.4	28.6	0.0	100	100%	9
Missing	8.4	31.6	40.0	11.6	0.0	11.6	20.0	28.4	100	23%	11

Table A4.6 Unmet need for family planning services among married women (continued)

	Unmeet Need for Spacing	Unmeet Need to Limit	Total Unmet Need	Using to Space	Using to Limit	Total Met Need	Desire Birth < 2 Years	Infecund, Menopausal	Total	Pct. of Demand Satisfied	N
District											
Alfred Nzo	8.0	20.9	28.9	7.7	15.8	23.5	22.8	24.8	100	45%	103
Amatole	3.4	12.6	16.0	9.9	42.4	52.2	17.8	14.0	100	77%	156
Chris Hani	4.7	16.4	21.1	10.0	37.9	47.9	19.0	12.1	100	69%	150
Mandela	4.3	13.8	18.1	12.1	49.3	61.4	12.2	8.3	100	77%	232
Oliver Tambo	6.0	22.1	28.2	5.4	21.5	26.9	24.5	20.4	100	49%	270
Ukwahlamba	2.4	15.8	18.2	4.0	56.2	60.3	12.5	9.1	100	77%	53
Western District	1.2	10.1	11.3	14.6	62.3	76.9	6.9	4.9	100	87%	75
Asset Quartile											
Lowest	7.7	22.5	30.2	6.6	19.6	26.2	23.6	19.9	100	46%	321
2nd Lowest	4.9	14.0	18.9	8.1	31.4	39.5	24.2	17.3	100	68%	169
2nd Highest	3.7	16.5	20.2	11.3	32.6	44.0	19.9	15.9	100	69%	178
Highest	2.6	13.0	15.5	10.5	57.7	68.2	9.1	7.2	100	81%	370
Total	4.7	16.7	21.4	9.0	37.3	46.4	17.9	14.3	100	68%	1038

Table A5.1 Cox proportional hazard estimation of determinants of child mortality by demographic and socio-economic variables during 10 years prior to survey

Background Characteristic	Hazard Ratio	Robust S.E.	Z	P>z	Confidence Interval Lower CI	Higher CI
Female child	0.784	0.099	-1.92	0.06	0.612	1.005
Married	0.713	0.108	-2.24	0.03	0.530	0.959
Age at Birth	0.980	0.091	-0.21	0.83	0.816	1.177
Age at birth < 16	2.970	1.186	2.73	0.01	1.358	6.495
Birth Interval (versus "<24 months")						
Interval 24-35 mos.	0.748	0.143	-1.51	0.13	0.514	1.089
Interval > 35 mos.	0.640	0.145	-1.96	0.05	0.410	0.999
Birth Order (versus "1st Birth")						
2nd-3rd birth	1.368	0.329	1.30	0.19	0.853	2.192
4th-6th birth	2.010	0.611	2.30	0.02	1.108	3.647
7th birth or higher	2.969	1.176	2.75	0.01	1.367	6.452
Water Source (versus "Piped")						
Public water	1.502	0.636	0.96	0.34	0.655	3.445
Natural water	2.418	1.075	1.99	0.05	1.011	5.780
Education	0.991	0.023	-0.38	0.70	0.946	1.038
Wealth Quartile (versus "poorest")						
Asset Quartile 2	0.883	0.163	-0.68	0.50	0.615	1.267
Asset Quartile 3	0.881	0.206	-0.54	0.59	0.557	1.394
Wealthiest Quartile	1.002	0.354	0.01	1.00	0.501	2.004
Region (versus "Urban non-Transkei")						
Rural-not Transkei	0.804	0.287	-0.61	0.54	0.399	1.620
Transkei	1.436	0.475	1.09	0.27	0.751	2.748
Observations	2737					
Failures	203					
Wald chi2(17)	75.41					

Table A5.2 Cox proportional hazard estimation of determinants of child mortality by demographic and socio-economic variables, 5 years preceding survey

Background Characteristic	Hazard Ratio	Robust S.E.	Z	P>z	Confidence Interval Lower CI	Higher CI
Antenatal Care (versus "none")						
ANC with Doctor	0.855	0.457	-0.29	0.77	0.300	2.439
ANC with Nurse	0.414	0.157	-2.32	0.02	0.196	0.872
Delivery Assistance (versus "none")						
Delivery with Doctor	0.742	0.258	-0.86	0.392	0.375	1.468
Delivery with Nurse	0.794	0.197	-0.93	0.353	0.488	1.292
Age at Birth	0.961	0.023	-1.64	0.102	0.916	1.008
Age < 16	3.436	1.895	2.24	0.025	1.166	10.126
Age >40	1.879	1.077	1.1	0.271	0.611	5.777
Birth Order (versus "1st Birth")						
2nd-3rd Birth	1.330	0.451	0.84	0.401	0.684	2.584
4th-6th Birth	2.082	0.799	1.91	0.056	0.981	4.416
7th or higher birth	2.981	1.259	2.59	0.01	1.303	6.820
Region (versus "Urban non-Transkei")						
Rural not Transkei	1.309	0.653	0.54	0.59	0.492	3.479
Transkei	2.232	1.054	1.7	0.089	0.885	5.632
Female	0.979	0.180	-0.11	0.909	0.683	1.404
Married	0.730	0.179	-1.28	0.199	0.452	1.180
Education (versus "none")						
Sub A-Std 3	2.123	0.700	2.28	0.023	1.112	4.053
Std 4-Std 5	1.441	0.604	0.87	0.384	0.633	3.278
Std 6-Std 9	1.404	0.592	0.81	0.42	0.615	3.208
Std 10 +	1.517	0.755	0.84	0.403	0.572	4.026
Wealth Quartile (versus "poorest")						
2nd Poorest	0.791	0.178	-1.04	0.297	0.509	1.229
2nd Wealthiest	0.655	0.247	-1.12	0.262	0.313	1.372
Wealthiest Quartile	0.743	0.453	-0.49	0.626	0.225	2.456
Obs	1341					
Failures	99					
Wald chi2(21)	85.63					

Table A5.3 Prenatal care and delivery assistance, births in last 5 years

Background Characteristic	Prenatal Care			Delivery Assistance	
	Tetanus Toxoid	Doctor	Nurse /Midwife	Doctor	Nurse/ Midwife
Maternal Age at Birth					
<20	62.9	4.3	91.2	14.9	68.7
20-34	55.2	14.9	79.6	19.1	54.8
35+	59.9	9.3	85.5	15.9	51.8
Urban-Rural Residence					
Urban	52.9	31.5	71.6	40.1	79.2
Rural	64.2	6.7	90.4	9.6	69.0
Former Transkei	56.3	3.9	93.0	9.5	58.2
District Council					
Alfred Nzo	55.8	4.2	91.4	10.8	72.3
Amatola	62.7	8.8	87.7	16.5	70.3
Chris Hani	59.5	15.1	80.7	20.9	69.4
Mandela	46.1	37.7	70.2	41.3	79.6
Oliver Tambo	56.6	3.8	93.6	9.2	55.1
Ukhahlamba	72.4	2.5	98.3	9.2	78.6
Western District	72.4	16.5	76.5	25.2	75.1
Educational Level					
No Education	46.7	3.2	87.2	5.7	22.7
Sub A - Std 3	58.3	3.9	90.0	7.3	51.8
Std 4 - Std 5	65.3	6.2	90.0	11.2	63.8
Std 6 - Std 9	59.4	10.6	84.3	17.8	62.0
Std 10	49.1	34.6	60	40.7	53.8
11+	38.8	36.6	59.7	43.7	51.8
Ethnicity					
Black African	59.5	8.0	86.8	13.3	59.3
Colored	56.5	30.3	64.8	38.9	53.0
White	2.8	84.2	7.5	97.2	2.8
Asian/Indian					
Missing					
Birth Order					
1	56.5	11.6	84	21.3	66.9
2-3	54.3	16.6	76.4	20.5	57.0
4-5	62.0	12.2	83.5	15.1	53.7
6+	60.0	2.8	92.7	9.3	42.5
Wealth Quartile					
Poorest	55.9	2.0	93.1	7.1	54.8
2nd Poorest	58.8	6.8	93.0	9.0	65.9
2nd Wealthiest	67.4	7.6	87.6	15.3	77.4
Wealthiest	45.6	42.5	64.0	53.0	74.0
Total	57.4	12.0	82.7	17.8	56.8

Table A5.4 Birth weight

Background Characteristic	<2500 grams	2500-7300 grams	Not Weighed	Don't Know	Missing	Total	N	Pct LBW among those weighed
Mother's Age								
15-19	8.7	59.4	18.3	13.6	0.0	100	107	12.8
20-24	6.1	57.6	20.0	14.9	1.4	100	290	9.5
25-29	6.9	58.2	22.2	11.5	1.2	100	305	10.6
30-34	7.6	53.7	27.0	10.4	1.3	100	276	12.4
35-39	4.4	44.4	32.4	16.8	2.0	100	246	9.1
40-44	7.8	52.1	24.8	12.8	2.6	100	98	13.0
45-49	0.0	36.5	41.1	22.4	0.0	100	24	0.0
Residence								
Urban	10.4	63.0	3.8	21.5	1.4	100	366	14.2
Rural	6.4	57.8	23.0	11.8	1.1	100	340	10.0
Former Transkei	4.3	46.6	37.7	9.8	1.6	100	640	8.5
Mother's Education								
None	1.0	17.0	69.6	11.5	1.0	100	95	5.3
Sub A - Std 3	4.1	34.0	40.5	17.8	3.6	100	194	10.8
Std 4 - Std 5	9.2	51.7	22.3	14.3	2.4	100	266	15.2
Std 6 - Std 9	5.3	59.7	20.1	14.3	0.5	100	585	8.1
Std 10	10.1	73.8	7.0	8.1	0.9	100	139	12.1
11+	13.4	79.6	3.2	3.8	0.0	100	67	14.4
Wealth Quartile								
Poorest	4.9	45.4	39.6	8.8	1.4	100	390	9.7
2nd Poorest	5.8	50.8	31.5	10.8	1.1	100	421	10.2
2nd Wealthiest	5.8	60.3	13.1	18.7	2.1	100	289	8.8
Wealthiest	11.1	65.0	3.6	19.2	1.0	100	247	14.6
Ethnicity								
Black/African	6.2	52.0	26.9	13.4	1.5	100	1204	10.7
Colored	12.6	63.5	4.2	18.3	1.4	100	88	16.5
White	2.8	88.9	2.8	5.5	0.0	100	46	3.0
Asian/Indian	0.0	100.0	0.0	0.0	0.0	100	1	0.0
Missing	0.0	16.6	71.5	11.9	0.0	100	8	0.0
District								
Alfred Nzo	11.0	54.2	27.1	7.7	0.0	100	116	16.9
Amatole	9.3	50.2	24.3	15.2	1.0	100	185	15.6
Chris Hani	6.2	63.3	11.9	18.1	0.6	100	167	8.9
Mandela	9.5	62.6	5.7	21.1	1.1	100	227	13.1
Oliver Tambo	2.8	44.9	40.1	10.2	1.9	100	525	6.0
Ukwahlamba	3.5	68.9	14.7	11.7	1.3	100	73	4.8
Western District	15.2	66.3	6.8	7.1	4.7	100	54	18.6
Total	6.5	53.9	24.8	13.5	1.4	100	1347	10.8

Table A5.5 Initial breastfeeding

Background Characteristic	Ever Breastfed	Within 1 hour of birth	Within 1 day of birth	N
Sex				
Male	88.4	46.9	79.1	687.1
Female	88.3	48.4	79.3	671.9
Residence				
Urban	83.0	52.9	89.4	366
Rural	92.0	52.1	82.7	340
Former Transkei	89.5	41.8	71.4	640
Ethnicity				
Black/African	88.7	46.8	77.9	1216.3
Colored	90.3	51.3	89.2	87.9
White	77.9	56.5	92.9	45.8
Asian/Indian	100.0	100.0	100.0	1.3
Missing	64.3	64.3	100.0	7.6
District				
Alfred Nzo	89.0	36.6	75.1	115.8
Amatole	89.1	66.3	86.6	185.6
Chris Hani	90.9	54.0	91.4	167.0
Mandela	81.8	48.0	85.9	227.5
Oliver Tambo	89.4	43.5	71.1	536.1
Ukwahlamba	86.1	26.1	69.1	73.1
Western District	95.3	55.9	90.4	53.9
Education				
None	88.2	43.2	71.1	95.3
Sub A - Std 3	90.5	54.1	80.1	194.6
Std 4 - Std 5	90.2	49.2	80.3	268.7
Std 6 - Std 9	88.3	46.4	78.2	592.6
Std 10	85.7	43.9	83.3	139.5
11+	80.9	47.5	83.6	68.5
Wealth Quartile				
Poorest	90.1	42.0	70.8	352
2nd Poorest	89.5	47.7	77.7	380
2nd Wealthiest	87.9	49.2	84.7	259
Wealthiest	84.1	53.6	88.1	214
Total	88.4	47.5	79.0	1347

Table A5.6 Foods received by children in the 24 hour period preceding the interview (percent of children)

Age in Months	Currently Breast-feeding	Plain Water	Sugar Water	Herbal Tea	Baby Formula	Any Kind of Milk	Any Other Liquid	Maize/ Rice/ Wheat	Fruits, Vegetables	Semi-Solid Foods	Eggs, Fish, Poultry	Meat	Drank from Bottle with Nipple
0-3 mos.	80.5	43.2	21.3	5.5	71.5	35.5	15.1	6.7	0.0	3.0	3.0	0.0	65.3
4-5 mos.	71.3	55.7	24.9	12.5	75.1	50.2	29.9	31.8	12.5	19.9	7.5	2.5	56.7
6-9 mos.	66.8	69.7	26.4	18.0	73.8	60.4	34.0	57.2	36.5	28.9	32.2	15.7	48.8
10-11 mos.	54.4	78.4	37.4	37.4	51.8	51.8	54.0	59.0	41.0	48.2	33.8	19.4	35.2
12-15 mos.	60.8	81.4	29.3	26.4	48.4	64.5	59.9	76.4	47.5	48.7	28.9	28.1	37.6
16-19 mos.	48.1	82.5	49.8	34.2	26.9	61.1	50.9	69.2	60.7	50.2	46.6	41.2	21.8
20-23 mos.	20.3	81.9	44.7	26.6	21.3	69.2	63.9	74.5	46.8	53.2	34.0	39.4	21.3
24-29 mos.	6.5	76.5	56.8	56.8	19.7	53.0	56.8	90.2	33.3	66.7	60.7	43.2	9.8
30-35 mos.	3.3	100.0	53.8	0.0	46.2	73.1	26.9	53.8	80.7	26.9	80.7	80.7	19.3
Total	39.7	67.6	31.7	20.8	57.4	54.3	38.8	49.5	32.1	31.5	26.4	19.2	44.1

Table A5.7 Vaccination coverage among children 12-23 months (percent of children)

	Full	BCG	DPT1	DPT2	DPT3	Polio0	Polio1	Polio2	Polio3	Hep B1	Hep B2	Hep B3	Measles
Male	50.7	95.7	90.6	77.4	65.9	90.0	86.3	72.0	58.0	79.8	67.7	60.3	73.3
Female	50.6	95.5	91.0	85.3	70.7	88.5	87.5	81.7	65.0	81.0	73.8	62.2	77.1
Urban	58.1	93.0	90.7	86.1	72.1	88.4	83.7	81.4	65.1	81.4	74.4	65.1	88.4
Rural	51.7	96.6	89.7	86.2	69.0	89.7	89.7	77.6	63.8	87.9	79.3	65.5	75.9
Former Transkei	46.9	96.3	91.1	76.3	65.3	89.3	86.8	73.4	57.6	76.2	65.0	57.6	68.9
District Council													
Alfred Nzo	46.8	96.4	85.6	78.4	67.6	92.8	82.0	78.4	59.0	77.0	69.8	59.0	61.2
Amatola	51.3	96.7	96.7	96.7	75.7	93.4	92.1	82.2	64.5	93.4	93.4	71.1	76.9
Chris Hani	50.0	100.0	89.4	84.0	66.0	89.4	94.7	76.6	60.7	76.6	60.7	55.3	78.7
Mandela	53.9	87.4	84.0	78.2	60.7	87.4	75.7	73.3	57.3	78.2	71.4	57.3	81.6
Oliver Tambo	46.9	96.4	92.7	76.5	65.7	88.7	88.3	72.8	58.4	76.0	63.8	57.2	71.7
Ukhahlamba	48.3	100.0	82.1	69.7	69.7	91.1	91.1	82.1	69.7	100.0	69.7	69.7	91.1
Western District	74.7	100.0	100.0	100.0	91.6	83.2	91.6	91.6	83.2	83.2	83.2	83.2	91.6
Education													
None	35.3	94.1	88.2	64.7	41.2	70.6	88.2	58.8	41.2	76.5	52.9*	35.3	52.9
Sub A-Std 3	54.9	94.3	91.4	80.0	71.4	91.4	88.6	80.0	67.4	82.8	78.6	68.8	75.9
Std 4 - Std 5	54.1	100.0	96.1	86.4	73.9	96.1	92.2	78.6	65.4	84.8	68.0	59.5	66.3
Std 6 - Std9	49.9	95.2	89.9	81.9	69.2	92.7	84.1	77.1	61.0	80.4	71.9	62.9	78.7
Std 10	51.6	87.1	87.1	76.3	65.6	79.6	76.3	65.6	54.8	71.0	65.6	60.2	76.4
11+	-	100.0	84.6	84.6	66.1	63.1	100.0	92.3	66.1	73.8	63.3	54.9	91.6
Race													
Black African	48.8	94.5	90.6	80.1	67.2	89.5	86.3	75.1	60.3	79.9	69.2	59.6	74.2
Colored	73.8	100.0	91.3	91.3	73.8	91.3	91.3	91.3	73.8	82.5	82.5	73.8	91.3
White/Asian	50.0	100.0	100.0	100.0	100.0	50.0	100.0	100.0	50.0	100.0	100.0	100.0	50.0
Missing	100.0	89.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Income Quartile													
Lowest	47.2	95.4	88.6	77.2	65.8	89.8	86.3	73.8	58.5	82.5	71.1	59.7	62.0
2nd Lowest	50.3	95.4	90.8	86.2	69.3	87.7	92.3	80.1	63.2	83.1	73.9	63.2	74.9
2nd Highest	49.7	100.0	95.8	80.1	66.0	95.8	85.5	72.3	58.9	72.0	59.9	55.7	87.9
Highest	59.7	90.3	88.0	81.5	71.8	81.5	80.6	80.6	64.4	81.5	78.2	68.5	85.6
Total	50.7	95.6	90.8	81.1	68.1	89.3	86.9	76.5	61.3	80.4	69.2	59.6	75.1

Table A5.8 Prevalence of diarrhea and use of oral rehydration therapy, children under 5

Background Characteristic	In Past 2 Weeks	ORS Packets	Home Solution	Either ORT	Children Under 5
Age of Child					
< 6 months	12.6	51.0	0.0	51.0	141
6-11 months	24.5	57.6	19.1	64.8	163
12-23 months	24.0	54.4	10.4	56.0	251
24-35 months	8.1	35.9	8.6	44.5	282
36-47 months	7.9	70.8	22.6	77.4	263
48-59 months	4.0	60.0	20.0	60.0	247
Sex of Child					
Male	15.1	57.2	13.1	61.4	680
Female	10.4	50.8	13.1	55.0	667
Residence					
Urban	8.0	52.2	-	70.0	366
Rural	9.6	75.0	-	89.0	340
Former Transkei	15.5	48.6		82.0	640
District Councils					
Alfred Nzo	21.1	57.5	-	-	116
Amatole	5.9	80.0	-	-	185
Chris Hani	8.8	49.5	-	-	167
Mandela	7.0	48.9	-	-	227
Oliver Tambo	14.0	45.7	-	-	525
Ukhahlamba	23.1	74.2	-	-	73
Western District	6.4	100.0	-	-	54
Educational Level					
No Education	8.2	50.0	0.0	50.0	95
Sub A- Std. 3	16.5	43.4	11.2	50.0	194
Std. 4 - Std. 5	12.3	64.9	17.9	67.9	266
Std. 6 - Std. 9	13.7	52.6	8.7	56.1	585
Std. 10	10.6	52.0	22.7	61.3	207
11+	7.2	100.0	55.6	100.0	
Ethnicity					
Black/African	13.8	54.4	13.6	58.7	1204
Coloured	4.1	100.0	0.0	100.0	88
White	4.8	0.0	0.0	0.0	46
Asian/Indian	0.0	-	-	-	1
Missing	0.0	-	-	-	8
Income Quartile					
Lowest	16.5	59.9	-	-	390
2nd Lowest	11.5	46.2	-	-	421
2nd Highest	12.1	52.9	-	-	289
Highest	5.4	64.4	-	-	247
Total Eastern Cape	12.7	54.6	13.1	58.8	1347
South Africa Total	13.2	51.2	16.0	58.4	4,740

Table A5.9 Prevalence of acute respiratory infections and treatment

	Prevalence	Source of Care		
		Modern	Government	Private
Sex of Child				
Male	14.9	76.9	59.7	23.3
Female	14.3	76.0	54.4	28.5
Urban/Rural Residence				
Urban	12.5	88.9	52.8	38.9
Rural	13.6	75.5	68.6	7.8
Former Transkei	16.4	70.0	53.9	16.3
District Council				
Alfred Nzo	23.4	66.4	41.6	24.8
Amatola	12.5	87.7	70.7	17.0
Chris Hani	14.8	75.5	67.9	7.6
Mandela	13.7	86.1	45.4	40.7
Oliver Tambo	14.5	71.3	59.8	11.5
Ukhahlamba	9.7	100	100	0
Western District	10.8	46.9	46.9	0
Education				
None	7.7	50.0	50.0	0.0
Sub A-Std 3	13.0	72.0	56.3	21.3
Std 4 - Std 5	14.7	75.2	64.4	10.8
Std 6 - Std9	18.4	77.8	55.4	28.0
Std 10	9.4	87.1	73.6	30.1
11+	9.7	84.3	38.8	62.5
Race				
Black African	14.9	76.2	61.0	20.3
Colored	11.8	51.5	21.1	32.8
White	13.5			100.0
Missing	11.9			
Income Quartile				
Lowest	16.1	70.9	55.2	14.5
2nd Lowest	14.9	74.9	61.9	14.8
2nd Highest	13.2	79.4	63.6	16.3
Highest	13.6	82.2	44.3	41.6
Working Mother				
No	14.9	74.4	59.0	19.3
Yes	13.5	83.5	49.0	47.6
Total	14.6	76.5	57.1	25.9

Table A6.1 Percent distribution of hypertension among men, according to selected background characteristics

	Hypertension (Percent)				Odds ratio of hypertension^	
	No	Yes	Total	N	OR	95% CI
Age						
15-19	94.6	5.4	100.0	221	1.0	
20-24	93.1	6.9	100.0	167	1.3	0.6, 3.1
25-29	89.7	10.3	100.0	131	1.6	0.7, 3.8
30-39	81.6	18.4	100.0	192	3.7**	1.8, 7.4
40-49	70.2	29.8	100.0	172	7.2**	3.6, 14.2
50-59	60.1	39.9	100.0	121	10.1**	4.9, 20.8
60-95	64	36	100.0	196	10.6**	5.3, 21.1
Race/ethnicity						
Black	82.0	18.0	100.0	1006	1.0	
Colored	72.5	27.5	100.0	101	1.8*	1.0, 3.1
White	63.7	36.3	100.0	83	1.6	0.8, 3.0
Asian/Indian	77.8	22.2	100.0	11	1.6	0.3, 8.9
Transkei versus remainder of Eastern Cape						
Urban, not Transkei	75.69	24.31	100.0	597	1.0	
Rural, not Transkei	82.99	17.01	100.0	332	0.6*	0.4, 0.9
Transkei	85.08	14.92	100.0	272	0.6	0.4, 1.0
Education level						
No education	69.4	30.6	100.0	144	1.0	
Sub A - Std 3	80.8	19.2	100.0	206	0.7	0.4, 1.2
Std 4 - Std 5	84.0	16.0	100.0	222	0.9	0.5, 1.5
Std 6 - Std 9	80.6	19.4	100.0	449	1.0	0.6, 1.7
Std 10 +	80.1	19.9	100.0	180	0.8	0.4, 1.6
Wealth Quartile						
Poorest	81.8	18.3	100.0	242	1.0	
2nd Poorest	82.4	17.6	100.0	235	0.9	0.6, 1.4
2nd Wealthiest	82.0	18.0	100.0	324	0.9	0.6, 1.5
Wealthiest	75.4	24.6	100.0	401	0.9	0.5, 1.6
District Council						
Western	67.2	32.8	100.0	83		
Mandela	75.3	24.7	100.0	325		
Amatole	83.6	16.4	100.0	249		
Chris Hani	77.5	22.5	100.0	188		
Ukhahlamba	86.8	13.2	100.0	84		
Alfred Nzo	88.2	11.8	100.0	58		
Oliver Tambo	84.2	15.8	100.0	214		
Total for men	79.8	20.2	100.0	1222		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in former Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at p <0.005. **significant at p <0.01.

Table A6.2 Percent distribution of hypertension among women, according to selected background characteristics

	Hypertension (Percent)				Odds ratio of hypertension^	
	No	Yes	Total	N	OR	95% CI
Age						
15-19	95.8	4.2	100.0	275	1.0	
20-24	95.0	5.1	100.0	229	1.2	0.5, 2.8
25-29	94.9	5.1	100.0	176	1.2	0.5, 3.1
30-39	84.6	15.4	100.0	340	4.4**	2.3, 8.4
40-49	77.9	22.1	100.0	222	6.7**	3.4, 13.1
50-59	66.2	33.8	100.0	288	13.0**	6.8, 24.8
60-95	55.7	44.3	100.0	358	21.7**	11.4, 41.3
Race/ethnicity						
Black	79.5	20.5	100.0	1620	1.0	
Colored	77.8	22.2	100.0	166	1.2	0.8, 2.0
White	77.2	22.8	100.0	92	0.5	0.3, 1.1
Asian/Indian	100.0	0.0	100.0	9		
Transkei versus remainder of Eastern Cape						
Urban, not Transkei	78.0	22.0	100.0	745	1.0	
Rural, not Transkei	76.4	23.6	100.0	523	1.0	0.7, 1.4
Transkei	83.5	16.5	100.0	619	0.7	0.5, 1.1
Education level						
No education	69.1	30.9	100.0	286	1.0	
Sub A - Std 3	73.3	26.7	100.0	282	1.4	0.9, 2.0
Std 4 - Std 5	80.6	19.4	100.0	355	1.2	0.8, 1.8
Std 6 - Std 9	83.7	16.3	100.0	695	1.5*	1.0, 2.3
Std 10 +	83.5	16.5	100.0	266	1.7	1.0, 3.0
Wealth Quartile						
Poorest	78.2	21.8	100.0	478	1.0	
2nd Poorest	82.0	18.0	100.0	431	0.9	0.6, 1.3
2nd Wealthiest	80.2	19.8	100.0	440	0.9	0.6, 1.3
Wealthiest	77.7	22.3	100.0	539	1.1	0.7, 1.8
District Council						
Western	74.5	25.5	100.0	106		
Mandela	79.1	20.9	100.0	415		
Amatole	78.5	21.5	100.0	327		
Chris Hani	73.9	26.1	100.0	313		
Ukhahlamba	79.8	20.2	100.0	108		
Alfred Nzo	79.1	20.9	100.0	141		
Oliver Tambo	84.8	15.2	100.0	479		
Total for women	79.4	20.6	100.0	1866		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non Transkei, education level, wealth quartile with multivariate analysis. *significant at $p< 0.05$, **significant at $p<0.01$.

Table A6.3 Percent distribution of chronic obstructive pulmonary disease among men, according to selected background characteristics

	Chronic obstructive pulmonary disease (percent)				Odds ratio of pulmonary disease^	
	No	Yes	Total	N	OR	95% CI
Age						
15-19	97.6	2.4	100.0	231	1.0	
20-24	98.2	1.8	100.0	175	0.9	0.2, 3.6
25-29	97.6	2.4	100.0	137	1.2	0.3, 5.4
30-39	93.4	6.6	100.0	201	3.1	1.0, 9.0
40-49	88.1	11.9	100.0	184	5.9**	2.1, 16.2
50-59	90.3	9.7	100.0	138	4.5**	1.5, 13.4
60-95	81.5	18.5	100.0	245	10.0**	3.7, 26.8
Race/ethnicity						
Black	92.2	7.8	100.0	1088	1.0	
Colored	93.4	6.6	100.0	108	0.9	0.4, 2.4
White	86.3	13.7	100.0	104	1.9	0.8, 4.6
Asian/Indian	100.0	0.0	100.0	11		
Transkei versus remainder of Eastern Cape						
Urban, not Transkei	91.9	8.1	100.0	642	1.0	
Rural, not Transkei	94.7	5.3	100.0	370	0.5	0.3, 1.0
Transkei	88.6	11.4	100.0	299	1.5	0.8, 2.9
Education level						
No education	85.6	14.4	100.0	164	1.0	
Sub A - Std 3	88.2	11.9	100.0	223	1.2	0.7, 2.3
Std 4 - Std 5	92.3	7.7	100.0	244	1.0	0.5, 2.0
Std 6 - Std 9	94.6	5.4	100.0	485	0.6	0.3, 1.3
Std 10 +	94.3	5.7	100.0	196	0.5	0.2, 1.5
Economic status						
Poorest	91.2	8.9	100.0	264	1.0	
2nd Poorest	91.3	8.8	100.0	256	1.1	0.6, 2.0
2nd Wealthiest	93.5	6.5	100.0	344	1.2	0.6, 2.3
Wealthiest	91.6	8.5	100.0	448	1.3	0.6, 2.9
District Council						
Western	88.9	11.1	100	93		
Nelson Mandela	92.6	7.4	100	352		
Amatole	92.9	7.1	100	274		
Chris Hani	95.5	4.5	100	205		
Ukhahlamba	92.6	7.4	100	90		
Alfred Nzo	82.7	17.3	100	66		
Oliver Tambo	90.2	9.8	100	233		
Total for men				1311		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05, **significant at p<0.01.

Table A6.4 Percent distribution of chronic obstructive pulmonary disease among women, according to selected background characteristics

	Chronic obstructive pulmonary disease (%)				Odds ratio of pulmonary disease^	
	No	Yes	Total	N	OR	95% CI
Age						
15-19	98.3	1.7	100.0	284	1.0	
20-24	98.1	1.9	100.0	237	1.0	0.3, 3.7
25-29	94.1	5.9	100.0	179	3.3*	1.1, 10.0
30-39	95.3	4.7	100.0	355	2.3	0.8, 6.4
40-49	94.5	5.5	100.0	244	2.9*	1.0, 8.3
50-59	87.8	12.2	100.0	322	7.3**	2.7, 19.1
60-95	82.0	18.0	100.0	443	11.4**	4.4, 29.3
Race/ethnicity						
Black	92.4	7.6	100.0	1763	1.0	
Colored	92.1	7.9	100.0	176	1.7	0.8, 3.5
White	84.1	15.9	100.0	115	3.6	1.5, 8.5
Asian/Indian	71.4	28.6	100.0	9	14.7	2.3, 94.7
Transkei versus remainder of Eastern Cape						
Urban, not Transkei	91.9	8.1	100.0	813	1.0	
Rural, not Transkei	93.5	6.5	100.0	579	0.6	0.3, 1.1
Transkei	90.3	9.7	100.0	670	1.1	0.6, 1.9
Education level						
No education	86.7	13.3	100.0	337	1.0	
Sub A - Std 3	89.1	10.9	100.0	313	1.2	0.8, 2.0
Std 4 - Std 5	90.8	9.2	100.0	386	1.3	0.8, 2.2
Std 6 - Std 9	95.1	4.9	100.0	743	0.8	0.5, 1.4
Std 10 +	93.5	6.5	100.0	281	0.8	0.3, 1.8
Economic status						
Poorest	90.4	9.6	100.0	526	1.0	
2nd Poorest	91.3	8.7	100.0	480	1.1	0.7, 1.6
2nd Wealthiest	93.1	6.9	100.0	474	0.8	0.5, 1.4
Wealthiest	92.5	7.5	100.0	583	0.5	0.2, 1.1
District Council						
Western	91.9	8.1	100.0	117		
Mandela	92.2	7.8	100.0	448		
Amatole	94.6	5.4	100.0	363		
Chris Hani	91.9	8.1	100.0	346		
Ukhahlamba	90.0	10.0	100.0	119		
Alfred Nzo	87.8	12.2	100.0	152		
Oliver Tambo	91.0	9.0	100.0	519		
Total for women	91.8	8.2	100.0	2063		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non Transkei, education level, wealth quartile with multivariate analysis. *significant at $p < 0.05$, **significant at $p<0.01$.

Table A6.5 Percent distribution of BMI among men, according to selected background characteristics

	BMI						Odds ratio, underweight^		Odds ratio, obese^	
	<18.5 Underweight	18.5-24.0 Normal	25-29.0 Over-weight	30+ Obese	Total	N	OR	95% CI	OR	95% CI
Age										
15-19	24.8	64.7	9.7	0.7	100.0	231	1.0		1.0	
20-24	6.7	75.3	16.8	1.2	100.0	172	0.2**	0.1, 0.5	1.3	.2, 9.0
25-29	8.2	69.0	18.4	4.5	100.0	137	0.3**	0.1, 0.6	4.9	1.0, 25.1
30-39	9.2	56.3	20.7	13.9	100.0	198	0.3**	0.2, 0.5	18.3**	4.2, 78.8
40-49	6.5	49.8	27.9	15.7	100.0	177	0.2**	0.1, 0.4	23.6**	5.5, 102.1
50-59	10.4	43.5	26.1	20.0	100.0	134	0.4**	0.2, 0.8	32.4**	7.4, 142.6
60-95	10.8	48.6	28.4	12.2	100.0	239	0.3**	0.2, 0.6	26.3**	6.1, 113.6
Race/ethnicity										
Black	11.9	61.1	18.8	8.2	100.0	1071	1.0		1.0	
Colored	14.9	54.3	19.4	11.4	100.0	108	1.6	0.9, 3.1	1.2	.6, 2.5
White	3.6	30.1	47.4	18.8	100.0	99	0.6	0.2, 2.2	0.9	.4, 1.9
Asian/Indian	22.2	44.4	11.1	22.2	100.0	11	2.7	0.5, 15.0	2.8	.5, 17.0
Residence										
Urban, not Transkei	10.8	54.1	23.7	11.4	100.0	634	1.0		1.0	
Rural, not Transkei	10.1	62.0	20.4	7.5	100.0	365	0.7	0.4, 1.1	0.9	.5, 1.6
Former Transkei	15.2	61.6	15.6	7.5	100.0	291	1.0	0.6, 1.8	1.2	.6, 2.3
Education level										
None	13.0	60.6	22.1	4.4	100.0	160	1.0		1.0	
Sub A - Std 3	14.0	58.7	17.3	10.0	100.0	217	0.9	0.5, 1.6	3.9**	1.6, 9.6
Std 4 - Std 5	14.9	60.8	17.0	7.3	100.0	241	0.8	0.4, 1.5	3.5**	1.4, 8.9
Std 6 - Std 9	11.6	59.3	19.5	9.7	100.0	479	0.7	0.4, 1.3	5.4**	2.2, 13.2
Std 10 +	3.8	48.6	32.7	15.0	100.0	193	0.3*	0.1, 0.9	7.7**	2.8, 21.2
Economic status										
Poorest	11.6	64.3	18.0	6.0	100.0	255	1.0		1.0	
2nd Poorest	15.1	61.4	15.1	8.4	100.0	253	1.5	0.9, 2.5	1.3	.7, 2.5
2nd Wealthiest	13.2	61.0	18.0	7.8	100.0	343	1.3	0.8, 2.3	1.1	.6, 2.2
Wealthiest	8.3	50.1	28.4	13.2	100.0	439	0.9	0.4, 1.8	1.3	.6, 2.8
District Council										
Western	11.6	57.1	22.8	8.4	100.0	90				
Mandela	11.3	54.3	24.1	10.3	100.0	347				
Amatole	9.8	56.9	22.6	10.6	100.0	270				
Chris Hani	6.4	58.8	23.5	11.3	100.0	203				
Ukhahlamba	18.2	63.3	13.3	5.2	100.0	89				
Alfred Nzo	18.0	64.1	11.1	6.9	100.0	62				
Oliver Tambo	14.5	61.0	16.9	7.7	100.0	229				
Total for men	11.6	58.0	21.0	9.4	100.0	1310				

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05. **significant at p<0.01.

Table A6.6 Percent distribution of BMI among women, according to selected background characteristics

	BMI						Odds ratio, underweight^		Odds ratio, obese^	
	<18.5 Under weight	18.5-24.0 Normal	25-29.0 Over-weight	30+ Obese	Total	N	OR	95% CI	OR	95% CI
Age										
15-19	9.9	60.7	20.4	9.0	100.0	275	1.0		1.0	
20-24	6.0	51.5	30.8	11.7	100.0	231	0.5	0.3, 1.0	1.5	0.8, 2.7
25-29	6.5	45.6	26.4	21.5	100.0	175	0.6	0.3, 1.3	3.3**	1.9, 5.9
30-39	3.3	28.6	28.2	39.9	100.0	341	0.3**	0.1, 0.6	8.0**	4.9, 13.0
40-49	3.6	30.0	27.7	38.7	100.0	238	0.3**	0.1, 0.7	8.2**	4.9, 13.7
50-59	3.7	26.8	26.8	42.6	100.0	317	0.2**	0.1, 0.5	12.0**	7.3, 19.7
60-95	7.9	38.0	25.0	29.1	100.0	422	0.5*	0.2, 0.9	7.9**	4.8, 13.1
Race/ethnicity										
Black	5.5	38.9	26.5	29.1	100.0	1706	1.0		1.0	
Colored	13.7	36.8	25.7	23.8	100.0	174	3.4**	1.9, 6.3	0.4**	.3, .7
White	0.0	47.6	22.4	30.1	100.0	111			0.4**	.2, .6
Asian/Indian	0.0	0.0	50.0	50.0	100.0	7			0.9	.2, 4.8
Transkei versus remainder of Eastern Cape										
Urban, not Transkei	6.7	34.7	24.5	34.2	100.0	799	1.0		1.0	
Rural, not Transkei	5.1	40.0	29.4	25.4	100.0	564	0.5*	0.3, 0.9	0.9	.7, 1.3
Transkei	5.5	43.6	25.8	25.1	100.0	636	0.6	0.3, 1.1	1.0	.7, 1.5
Education level										
No education	9.7	42.5	26.7	21.1	100.0	330	1.0		1.0	
Sub A - Std 3	7.3	40.9	23.8	28.0	100.0	301	0.6	0.3, 1.1	1.6*	1.1, 2.4
Std 4 - Std 5	4.4	36.6	26.9	32.2	100.0	368	0.3**	0.1, 0.6	2.4**	1.7, 3.5
Std 6 - Std 9	5.4	38.9	24.6	31.1	100.0	720	0.3**	0.2, 0.6	2.9**	2.0, 4.2
Std 10 +	3.1	36.5	32.1	28.2	100.0	278	0.3**	0.1, 0.7	2.1**	1.3, 3.4
Economic status										
Poorest	6.4	44.5	29.3	19.8	100.0	502	1.0		1.0	
2nd Poorest	5.2	46.9	22.9	25.1	100.0	461	0.7	0.4, 1.3	1.4*	1.1, 2.0
2nd Wealthiest	7.6	35.1	26.2	31.2	100.0	465	1.0	0.5, 1.7	2.0**	1.4, 2.8
Wealthiest	4.6	31.1	26.5	37.8	100.0	571	0.5	0.2, 1.0	3.2**	2.1, 4.9
District Council										
Western	11.6	49.0	17.2	22.2	100.0	114				
Mandela	7.5	31.6	24.9	36.0	100.0	440				
Amatole	4.6	37.7	28.8	28.9	100.0	352				
Chris Hani	5.0	38.0	28.2	28.8	100.0	342				
Ukhahlamba	2.6	39.0	30.2	28.2	100.0	114				
Alfred Nzo	3.1	37.8	29.1	30.1	100.0	143				
Oliver Tambo	6.2	45.3	24.9	23.6	100.0	494				
Total for men	5.9	39.0	26.3	28.8	100.0	1978				

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05, **significant at p<0.01.

Table A6.7 Percent distribution of tuberculosis among men, according to selected background characteristics

	Tuberculosis			Odds ratio of ever having TB^	
	Ever had TB	Had TB last year	N	OR	95% CI
Age					
15-19	0.7	0.4	231	1.0	
20-24	1.4	1.4	175	1.5	0.2, 10.8
25-29	1.3	0.0	137	2.1	0.3, 15.5
30-39	6.3	2.0	201	7.9**	1.7, 36.4
40-49	10.9	1.8	184	13.4**	3.0, 59.5
50-59	11.3	0.0	138	17.2**	3.8, 79.2
60-95	9.3	1.7	245	12.1**	2.7, 53.9
Race/ethnicity					
Black	6.5	1.3	1088	1.0	
Colored	4.9	0.8	108	1.0	0.4, 2.7
White	1.1	0.0	104	0.2	0.0, 1.9
Asian/Indian	0.0	0.0	11		
Transkei versus remainder of Eastern Cape					
Urban, not Transkei	5.7	1.3	642	1.0	
Rural, not Transkei	3.9	0.9	370	0.3**	0.2, 0.6
Transkei	8.4	1.0	299	0.8	0.4, 1.5
Education level					
No education	11.9	1.2	164	1.0	
Sub A - Std 3	10.1	1.1	223	1.0	0.5, 2.0
Std 4 - Std 5	5.4	2.0	244	0.7	0.3, 1.6
Std 6 - Std 9	3.8	1.1	485	0.7	0.3, 1.4
Std 10 +	1.7	0.0	196	0.4	0.1, 1.5
Economic status					
Poorest	7.1	0.7	264	1.0	
2nd Poorest	10.2	0.9	256	1.4	0.7, 2.5
2nd Wealthiest	4.9	1.4	344	0.8	0.4, 1.6
Wealthiest	3.4	1.3	448	0.5	0.2, 1.2
District Council					
Western	3.5	0.9	93		
Mandela	7.6	1.9	352		
Amatole	3.6	0.8	274		
Chris Hani	1.3	0.4	205		
Ukhahlamba	10.1	1.3	90		
Alfred Nzo	10.3	1.3	66		
Oliver Tambo	7.9	0.9	233		
Total for men	5.8	1.1	1333		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05, **significant at p<0.01.

Table A6.8 Percent distribution of tuberculosis among women, according to selected background characteristics

	Tuberculosis			Odds ratio of ever having TB^	
	Ever had TB	Had TB last year	N	OR	95% CI
Age					
15-19	0.6	0.0	284	1.0	
20-24	4.4	1.9	237	7.3*	1.6, 33.8
25-29	2.8	1.2	179	5.3*	1.0, 28.2
30-39	2.4	0.3	355	3.4	0.7, 16.2
40-49	4.5	0.9	244	6.0**	1.3, 27.8
50-59	8.5	1.9	322	11.8**	2.7, 51.2
60-95	5.7	1.3	443	7.8**	1.8, 34.2
Race/ethnicity					
Black	5.0	1.2	1763	1.0	
Colored	0.5	0.0	176	0.2	0.0, 1.4
White	0.0	0.0	115		
Asian/Indian	0.0	0.0	9		
Transkei versus remainder of Eastern Cape					
Urban, not Transkei	3.1	1.2	813	1.0	
Rural, not Transkei	3.7	1.2	579	0.5	0.3, 1.0
Transkei	6.4	0.7	670	0.9	0.5, 1.9
Education level					
No education	6.8	1.4	337	1.0	
Sub A - Std 3	8.9	2.6	313	1.5	0.8, 2.7
Std 4 - Std 5	4.6	1.0	386	0.9	0.5, 1.8
Std 6 - Std 9	2.9	0.6	743	0.7	0.3, 1.4
Std 10 +	0.0	0.0	281		
Economic status					
Poorest	5.2	1.3	526	1.0	
2nd Poorest	6.7	1.0	480	1.5	0.9, 2.5
2nd Wealthiest	4.6	1.2	474	1.2	0.6, 2.2
Wealthiest	1.5	0.6	583	0.5	0.2, 1.5
District Council					
Western	7.0	1.0	117		
Mandela	3.0	2.1	448		
Amatole	1.8	0.7	363		
Chris Hani	3.3	1.0	346		
Ukhahlamba	6.0	0.0	119		
Alfred Nzo	4.1	2.3	152		
Oliver Tambo	7.1	0.2	519		
Total for women	4.3	1.0	2041		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05, **significant at p<0.01.

Table A6.9 Percent distribution of genital discharge and ulcer syndromes among men, according to selected background characteristics

	Sexually transmitted disease			Odds ratio of ever having GDS	
	Genital discharge syndrome (GDS)	Genital ulcer syndrome (GUS)	N	OR	95% CI
Age					
15-19	11.1	2.9	228	1.0	
20-24	11.7	4.8	170	1.4	0.8, 2.6
25-29	11.0	5.2	135	1.3	0.7, 2.5
30-39	16.7	3.7	198	1.5	0.9, 2.7
40-49	16.9	5.7	180	1.5	0.8, 2.6
50-59	11.4	2.8	136	1.2	0.6, 2.3
60-95	17.4	1.8	242	1.7	1.0, 3.0
Race/ethnicity					
Black	15.5	4.0	1070	1.0	
Colored	7.0	2.0	104	0.4*	0.2, 0.8
White	6.5	1.1	104	0.4	0.2, 1.0
Asian/Indian	11.1	11.1	11	1.5	0.3, 7.9
Transkei versus remainder of Eastern Cape					
Urban, not Transkei	15.7	3.9	633	1.0	
Rural, not Transkei	16.0	3.1	365	0.7	0.4, 1.0
Former Transkei	8.1	3.9	292	0.3*	0.2, 0.5
Education level					
No education	12.4	3.4	163	1.0	
Sub A - Std 3	20.3	5.5	219	2.0*	1.1, 3.5
Std 4 - Std 5	17.8	5.4	238	1.6	0.9, 2.9
Std 6 - Std 9	12.2	2.6	474	1.2	0.7, 2.1
Std 10 +	8.4	2.4	195	0.7	0.3, 1.6
Economic status					
Poorest	15.1	4.8	261	1.0	
2nd Poorest	15.2	3.3	251	1.0	0.6, 1.6
2nd Wealthiest	14.3	4.1	336	0.8	0.5, 1.3
Wealthiest	12.7	2.9	440	0.8	0.4, 1.3
District Council					
Western	15.0	1.0	90		
Mandela	15.9	3.3	348		
Amatole	16.2	4.6	269		
Chris Hani	16.0	4.3	201		
Ukhahlamba	14.8	2.9	90		
Alfred Nzo	9.3	8.0	65		
Oliver Tambo	7.8	2.8	227		
Total for men	14.1	3.7	1289		

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at $p< 0.05$, **significant at $p<0.01$.

Table A6.10 Percent distribution of smoking and drinking among men, according to selected background characteristics

	Current cigarette smoking	Alcohol consumption			N
		Drinks only on weekends	Drinks daily	Either on weekends or daily	
Age					
15-19	15.6	14.0	14.8	28.9	231
20-24	31.8	24.6	24.7	49.3	175
25-29	38.9	43.7	24.8	68.4	137
30-39	55.6	31.4	38.5	69.8	199
40-49	52.5	27.2	45.6	72.7	184
50-59	36.5	26.5	46.0	72.6	137
60-95	36.5	20.3	47.8	68.1	245
Race/ethnicity					
Black	36.9	23.8	34.0	57.8	1085
Colored	56.5	28.7	33.0	61.7	108
White	20.8	39.2	46.2	85.5	104
Asian/Indian	77.8	33.3	0.0	33.3	11
Region					
Urban, not Transkei	39.6	34.4	32.4	66.8	642
Rural, not Transkei	41.3	25.8	30.7	56.5	368
Transkei	28.8	5.9	43.9	49.8	298
Education level					
No education	48.0	21.5	49.2	70.7	164
Sub A - Std 3	43.9	20.4	44.1	64.5	221
Std 4 - Std 5	41.6	23.9	29.4	53.3	243
Std 6 - Std 9	34.4	26.1	29.0	55.1	484
Std 10 +	25.2	35.3	31.8	67.1	196
Economic status					
Poorest	42.8	14.8	45.3	60.1	263
2nd Poorest	39.0	17.0	36.7	53.7	255
2nd Wealthiest	39.5	33.2	28.3	61.5	343
Wealthiest	32.4	30.8	31.8	62.6	448
District Council					
Western	45.0	39.9	30.1	70.0	93
Nelson Mandela	36.1	31.7	31.1	62.8	352
Amatole	44.5	33.1	32.3	65.4	273
Chris Hani	37.2	30	24.4	54.4	204
Ukhahlamba	44.9	18.2	51.6	69.8	90
Alfred Nzo	41.1	6.5	44.4	50.9	66
Oliver Tambo	25.3	5.7	43.8	49.5	232
Total for men	37.6	25.5	34.6	60.1	1331

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at p< 0.05, **significant at p<0.01.

Table A6.11 Percent distribution of smoking and drinking among women, according to selected background characteristics

	Current cigarette smoking	Alcohol consumption			N
		Drinks only on weekends	Drinks daily	Either weekends or daily	
Age					
15-19	2.0	3.4	3.6	7.1	283
20-24	4.9	4.0	5.1	9.1	237
25-29	6.2	9.3	8.7	17.9	179
30-39	11.5	9.6	14.4	24.1	354
40-49	11.9	11.4	12.4	23.8	244
50-59	15.0	11.7	18.1	29.8	321
60-95	12.2	8.6	24.6	33.2	442
Race/ethnicity					
Black	5.4	5.7	12.5	18.2	1761
Colored	41.3	18.8	16.5	35.3	175
White	18.0	34.6	31.8	66.4	115
Asian/Indian	66.7	0.0	16.7	16.7	7
Region					
Urban, not Transkei	15.7	14.6	19.1	33.7	809
Rural, not Transkei	9.5	9.0	10.2	19.2	580
Transkei	1.4	0.4	10.9	11.3	671
Education level					
No education	19.1	11.9	30.4	42.3	335
Sub A – Std 3	12.1	7.0	14.2	21.2	313
Std 4 – Std 5	6.8	5.4	8.2	13.6	386
Std 6 – Std 9	6.7	6.7	8.7	15.4	741
Std 10 +	7.8	14.4	15.4	29.8	281
Wealth Quartile					
Poorest	6.0	3.6	14.4	18.1	526
2nd Poorest	7.7	5.6	12.4	18.0	480
2nd Wealthiest	10.2	9.8	13.2	23.1	474
Wealthiest	13.4	13.9	15.2	29.1	579
District Council					
Western	30.7	21.9	22.4	44.3	117
Nelson Mandela	17.5	14.9	18.0	32.9	446
Amatole	6.7	9.5	12.0	21.5	363
Chris Hani	11.5	11.7	13.4	25.1	343
Ukhahlamba	3.2	2.8	14.8	17.6	119
Alfred Nzo	1.5	0.0	11.0	11.0	152
Oliver Tambo	1.4	0.6	10.8	11.4	519
Total for women	9.5	8.4	13.9	22.3	2036

^Odds ratios (OR) adjusted for age, race/ethnicity, residence in Transkei versus non-Transkei, education level, wealth quartile with multivariate analysis. *significant at $p< 0.05$, **significant at $p<0.01$.

Table A7.1 Knowledge of AIDS and sources of knowledge

	Knows AIDS	Radio	TV	Newspaper	Pamphlets	Health Worker	Friends	Relatives	N
Age Group									
15-19	95.1	52.8	77.4	45.2	40.3	65.9	63.4	47.4	649
20-24	97.5	60.2	84.9	55.0	50.7	79.9	73.3	63.3	475
25-29	95.1	62.3	82.1	54.3	52.0	74.7	72.3	63.3	367
30-34	96.9	64.0	83.4	53.5	50.9	75.9	68.1	58.4	355
35-39	94.9	64.5	84.3	50.7	47.6	75.2	68.6	63.3	370
40-44	93.4	58.6	79.7	50.3	48.4	69.6	65.5	62.2	314
45-49	95.7	59.6	77.7	42.5	40.5	72.2	68.8	55.4	225
Marital Status									
Currently in union	94.3	59.2	80.7	48.1	44.1	70.6	65.0	56.8	1,026
Formerly in union	96.5	56.7	81.1	42.5	41.7	69.2	64.2	55.7	129
…had sex	96.7	61.2	82.8	53.5	51.2	77.6	73.7	63.4	2,406
…never had sex	95.1	574.0	78.1	50.8	44.4	66.7	62.5	46.4	350
Education									
None	79.7	23.0	54.4	8.5	14.2	52.1	43.7	34.5	140
Sub A - Std 3	90.2	40.3	73.8	22.8	21.7	61.0	48.7	44.2	345
Std 4 - Std 5	93.9	47.7	76.5	36.5	35.6	68.2	61.5	49.1	509
Std 6 - Std 9	97.9	63.0	84.0	54.3	49.7	76.4	72.0	61.2	1,263
Std 10	99.4	83.4	92.4	81.8	75.9	84.2	86.6	76.6	310
11+	100.0	92.5	91.6	89.1	81.9	81.2	85.3	74.8	188
Residence									
Urban	99.2	88.0	87.7	74.1	73.9	83.3	83.9	75.8	1105
Rural	94.6	50.4	78.5	37.4	38.6	70.3	62.3	53.0	695
Former Transkei	92.1	33.4	76.0	32.0	21.8	62.9	54.6	41.5	956
Ethnicity									
Black/African	95.1	54.3	81.3	45.4	41.7	72.7	66.7	56.4	2,355
Colored	97.5	89.4	87.1	79.7	82.4	89.3	86.7	78.5	244
White	100.0	93.5	68.4	75.4	67.5	44.1	57.8	47.8	131
Asian/Indian	100.0	100.0	90.9	100.0	90.9	72.7	100.0	81.8	13
Missing									13
District									
Alfred Nzo	95.9	41.8	80.1	35.6	24.7	61.6	54.9	41.7	199
Amatole	97.7	73.3	87.2	55.5	56.1	72.5	73.8	62.9	460
Chris Hani	96.2	59.9	83.0	46.8	51.6	76.9	71.1	62.5	387
Mandela	97.9	86.6	85.4	77.9	74.7	84.8	83.2	75.1	521
Oliver Tambo	91.1	31.2	74.9	31.1	21.1	63.3	54.5	41.5	757
Ukhahlamba	95.8	48.3	68.7	31.6	27.2	64.4	55.8	49.7	168
Western District	99.5	82.4	89.2	64.4	72.1	87.2	82.3	75.6	164
Asset Quartile									
Lowest	91.1	23.6	63.4	25.5	20.8	64.2	54.1	41.7	590
2nd Lowest	93.7	37.4	81.5	33.6	28.6	67.1	57.7	46.9	686
2nd Highest	96.8	72.7	87.8	53.5	51.4	75.3	72.6	63.8	707
Highest	99.6	94.7	88.8	80.9	79.1	82.7	84.6	75.5	773

Table A7.1 Knowledge of AIDS and sources of knowledge (continued)

	Knows AIDS	Radio	TV	Newspaper	Pamphlets	Health Worker	Friends	Relatives	N
Own Radio?									
Yes	96.2	64.7	87.4	54.4	50.6	74.2	70.6	60.7	2,141
No	93.4	41.8	60.0	35.7	34.2	68.5	60.2	49.3	615
Listens to Radio Daily?									
Yes	97.3	69.2	90.7	59.7	56.0	78.2	75.3	66.6	1,854
No	92.0	39.9	61.8	30.6	28.2	61.8	53.8	40.5	897
Own TV?									
Yes	98.3	89.7	89.3	70.5	67.0	78.2	78.6	69.6	1,233
No	93.3	35.2	74.8	33.8	30.7	68.7	59.9	48.9	1,523
Read newspaper weekly?									
Yes	99.2	88.8	90.1	85.2	78.0	82.6	84.4	76.6	733
No	94.3	31.7	78.0	37.6	35.7	69.4	62.4	51.4	2,019
Total	95.6	59.6	81.3	50.2	46.9	72.9	68.3	58.1	2,756

Table A7.2 Knows of ways to avoid AIDS, has misconception of transmission mechanisms

	Correct Information			Misinformation					
	Safe Sex	Use condoms	Injections with clean needle	Avoid mos-quito bites	Having a good diet	Avoid public toilets	Avoid sharing food with infected person	Does not know ways to avoid	N
Age Group									
15-19	82.9	81.1	83.8	42.0	20.4	24.2	21.1	9.4	614
20-24	89.3	85.9	88.1	47.2	19.2	19.0	17.6	4.7	461
25-29	88.4	89.8	89.3	48.5	23.0	18.5	14.1	5.8	348
30-34	85.7	88.0	88.7	45.1	16.2	21.0	16.2	6.4	343
35-39	90.1	85.5	88.7	42.9	19.3	23.5	15.8	6.1	350
40-44	88.1	84.8	86.2	46.6	18.6	22.9	20.9	9.1	291
45-49	86.2	83.7	87.3	38.5	21.2	23.5	16.0	5.4	215
Marital Status									
Currently in union	88.7	85.7	88.6	44.9	18.6	22.8	18.6	6.6	963
Formerly in Union	94.8	83.3	90.4	45.5	16.4	26.3	22.1	4.5	123
Never in union	85.2	85.1	86.0	44.2	20.7	20.8	16.9	7.3	1536
…had sex	88.2	86.4	88.2	45.9	19.6	22.6	18.2	6.0	346
…never had sex	78.5	77.1	80.3	35.5	20.0	16.8	15.0	13.0	227
Education									
None	79.0	67.1	72.4	39.2	16.5	27.3	22.9	14.4	111
Sub A – Std 3	78.8	69.1	77.2	45.6	20.2	26.1	23.5	17.9	310
Std 4 – Std 5	84.1	81.1	83.0	45.1	20.8	26.2	22.9	10.0	476
Std 6 – Std 9	88.1	88.5	89.1	46.0	21.2	22.5	17.9	4.9	1231
Std 10	92.4	94.1	94.6	40.5	14.5	12.4	10.2	0.6	307
11+	95.2	97.0	97.8	41.2	16.3	10.9	3.6	0.0	187
Residence									
Urban	92.2	92.0	93.5	37.5	18.5	18.9	11.1	2.0	1091
Rural	83.4	82.7	83.1	42.8	22.3	23.5	20.5	7.7	654
Former Transkei	82.9	78.6	82.3	54.5	19.1	24.2	24.0	12.4	876
Ethnicity									
Black/African	85.5	83.8	85.7	47.8	19.5	21.5	18.8	7.9	2228
Colored	93.0	92.4	93.8	26.3	29.2	27.4	13.5	2.0	236
White	97.2	95.4	98.1	24.8	7.4	17.7	10.2	0.0	130
Asian/Indian	100.0	90.9	90.9	9.1	18.2	18.2	0.0	0.0	13
Missing	93.5	93.5	93.5	46.7	6.5	22.1	9.1	6.5	13
District									
Alfred Nzo	78.2	73.8	77.8	55.7	15.3	20.4	22.8	17.3	189
Amatole	82.1	82.3	81.0	39.0	15.6	18.7	14.0	8.9	447
Chris Hani	87.7	89.9	90.7	38.2	19.2	19.6	15.0	4.1	371
Mandela	93.5	92.6	94.5	37.3	19.6	21.1	13.3	0.8	605
Oliver Tambo	84.2	79.9	83.5	54.2	20.2	25.2	24.3	11.0	686.3
Ukhahlamba	90.0	87.8	88.5	64.7	24.5	26.0	24.8	6.2	160
Western District	92.1	88.1	93.4	27.1	30.9	21.4	10.5	1.6	162

Table A7.2 Knows of ways to avoid AIDS, has misconception of transmission mechanisms (continued)

	Correct Information			Incorrect Information					
	Safe Sex	Use condoms	Injections with clean needle	Avoid mos-quito bites	Having a good diet	Avoid public toilets	Avoid sharing food with infected person	Does not know ways to avoid	N
Asset Quartile									
Lowest	80.2	74.9	80.4	48.5	20.5	25.4	25.3	14.3	535
2nd Lowest	85.0	81.2	83.8	50.3	20.9	25.1	24.9	9.7	639
2nd Highest	86.5	87.2	87.0	43.9	19.0	19.6	14.6	5.8	681
Highest	93.5	94.0	94.8	37.5	18.8	18.5	9.4	0.3	766
Own Radio?									
Yes	87.5	86.7	88.2	44.2	19.1	20.2	23.4	10.1	572
No	85.0	80.0	83.4	45.6	21.7	27.7	16.2	6.0	2049
Listens to Radio Daily?									
Yes	89.4	89.1	90.7	43.5	20.2	21.3	15.8	3.9	1795
No	81.4	76.7	79.3	46.9	18.8	23.1	22.1	13.3	820
Own TV?									
Yes	90.4	91.5	91.8	42.3	18.9	19.8	22.7	10.9	1207
No	83.9	79.9	83.2	46.4	20.4	23.5	12.0	2.2	1414
Read newspaper weekly?									
Yes	92.9	93.9	96.4	35.5	18.1	15.0	9.9	0.4	723
No	84.7	81.9	83.6	48.1	20.3	24.4	20.8	9.3	1894
Total	86.9	85.2	87.1	44.5	19.7	21.8	17.8	6.9	2621

Table A7.3 Attitudes and perceptions of HIV/AIDS, percentage of respondents saying "yes"

	Can a healthy-looking person have AIDS?	Know someone with AIDS?	Should people with AIDS be told status?	Should people with HIV be told status?	Should HIV/AIDS patients tell partners?	Should people with AIDS be reported to health authorities?	Should people with HIV be reported to health authorities?
Age Group							
15-19	32.0	14.6	76.2	75.7	80.0	66.7	64.6
20-24	33.6	18.9	78.1	79.9	84.1	69.5	68.1
25-29	31.6	17.1	83.7	83.1	86.1	71.5	67.9
30-34	33.1	20.3	79.2	78.6	86.0	70.3	68.6
35-39	31.5	17.7	83.1	83.1	87.1	73.2	73.3
40-44	30.5	15.9	80.8	82.6	85.6	69.5	70.1
45-49	31.1	15.8	80.6	81.3	87.7	72.5	71.9
Marital Status							
Current union	31.3	15.7	83.1	83.1	87.1	73.4	72.3
Former union	31.7	15.6	81.5	81.1	85.4	67.9	67.9
Never in union			77.5	78.0	82.8	67.9	66.3
…had sex	34.8	19.4	80.7	81.0	85.8	70.8	69.5
…never had sex	25.4	14.1	73.2	73.5	76.1	64.3	62.3
Education							
None	24.4	8.3	68.3	68.0	72.6	61.1	63.0
Sub A-Std 3	35.2	9.3	71.6	70.9	77.8	69.0	67.6
Std 4-Std 5	33.7	12.0	76.9	77.5	80.6	69.4	68.8
Std 6-Std 9	34.2	18.7	81.8	82.1	86.4	70.8	68.7
Std 10	25.6	23.6	83.1	85.5	89.5	70.9	69.4
11+	23.5	27.1	88.2	86.3	92.1	70.8	70.3
Residence							
Urban	29.7	23.4	84.8	85.6	91.3	70.0	69.6
Rural	33.2	12.6	76.9	77.0	81.1	67.6	66.2
Former Transkei	34.0	12.6	75.6	75.4	78.5	71.6	69.0
Ethnicity							
Black/African	34.4	17.0	77.3	77.7	82.6	67.9	66.2
Colored	24.5	18.8	92.1	92.1	94.3	77.6	77.9
White	5.6	15.8	97.2	97.2	96.3	89.1	88.2
Asian/Indian	27.3	0.0	90.9	90.9	100.0	100.0	100.0
Missing			81.9	81.9	100.0	66.3	66.3
District							
Alfred Nzo	29.3	11.9	76.3	74.1	75.5	76.1	74.9
Amatole	28.7	16.7	73.1	74.6	79.5	58.7	59.2
Chris Hani	29.1	16.9	84.6	84.4	88.1	71.2	70.0
Mandela	32.3	24.7	86.6	86.8	93.3	73.3	72.6
Oliver Tambo	35.3	12.7	75.4	75.7	79.3	70.4	67.4
Ukhahlamba	47.6	14.4	72.8	73.6	79.0	69.6	65.0
Western District	21.4	17.7	90.5	91.2	95.3	76.8	76.8

Table A7.3 Attitudes and perceptions of HIV/AIDS, percentage of respondents saying "yes" (continued)

	Can a healthy-looking person have AIDS?	Know someone with AIDS?	Should people with AIDS be told status?	Should people with HIV be told status?	Should HIV/AIDS patients tell partners?	Should people with AIDS be reported to health authorities?	Should people with HIV be reported to health authorities?
Asset Quartile							
Lowest	33.0	9.4	71.4	71.6	74.5	69.4	66.9
2nd Lowest	36.0	10.7	79.4	79.4	83.6	73.8	70.9
2nd Highest	31.3	19.0	79.3	80.0	84.3	67.1	66.8
Highest	28.8	26.1	86.2	86.5	92.4	69.6	69.3
Own Radio?							
Yes	31.6	17.9	81.3	81.4	86.5	71.2	69.6
No	33.7	14.4	74.3	74.9	77.4	65.4	64.8
Listens to Radio Daily?							
Yes	32.7	19.2	81.2	81.5	86.6	71.4	70.1
No	30.5	12.6	76.5	76.8	79.8	67.0	65.3
Missing	35.3	14.7	79.5	79.5	100.0	50.0	50.0
Own TV?							
Yes	30.4	23.4	84.1	84.7	89.2	69.3	68.7
No	33.5	11.8	76.0	76.1	80.5	70.5	68.4
Read newspaper weekly?							
Yes	26.7	25.1	88.0	88.4	91.5	72.1	72.1
No	34.1	14.0	76.6	76.9	81.8	69.2	67.3
Missing	22.8	22.8	68.3	68.3	100.0	45.5	45.5
Total	32.1	17.1	79.7	80.0	84.5	69.9	68.6

Table A7.4 Percentage of women, married or sexually active ever using condoms, and use of condoms during last sex

Background Characteristic	Ever Use Condoms			Condoms Last Sex	
	All Women	Married	Sexually Active	Married	Sexually Active
Age Group					
15-19	6.3	14.9	14.2	14.9	10.4
20-24	17.0	11.5	20.5	7.7	10.3
25-29	15.3	13.2	16.8	8.0	8.03
30-34	15.5	13.3	18.4	5.9	10.4
35-39	10.2	9.9	11.5	3.5	5.2
40-44	9.3	8.2	12.5	3.1	6.1
45-49	7.5	8.0	9.5	2.8	3.5
Urban-Rural Residence					
Urban	17.6	19.2	20.4	7.1	9.6
Rural	8.2	6.8	10.4	4.3	5.8
Former Transkei	6.8	4.8	9.8	3.7	6.7
Education					
None	0.0	0.0	0.0	0.0	0.0
Sub A - Std 3	3.3	2.3	3.4	0.5	1.8
Std 4 - Std 5	4.8	3.6	5.6	2.2	4.0
Std 6 - Std 9	10.5	11.0	15.3	7.2	8.7
Std 10	27.0	27.0	30.2	8.6	12.9
11+	34.7	34.8	36.2	13.6	17.3
District Council					
Alfred Nzo	6.6	6.8	6.9	6.1	4.1
Amatola	13.7	18.0	12.0	4.9	10.2
Chris Hani	9.7	12.1	10.5	3.8	4.3
Mandela	17.2	21.2	19.0	6.9	9.9
Or Tambo	6.9	10.5	4.0	2.8	7.3
Ukhahlamba	12.5	10.6	8.4	8.7	5.4
Western	14.3	14.5	14.6	7.3	7.7
Race					
Black	9.6	6.4	11.6	4.2	7.0
Colored	15.4	15.8	20.8	5.7	12.5
White/Asian	37.2	43.5	45.4	12.9	11.3
Other	0	0	0	0	0
Asset Quartile					
Lowest	3.9	3.4	5.3	3.4	4.5
2nd Lowest	7.2	3.8	6.7	1.3	2.4
2nd Highest	10.8	6.2	13.7	5.6	8.4
Highest	21.8	26.3	26.9	9.7	12.8
Total	11.5	10.8	15.2	5.1	7.9
N	2756	1026	1215	1018	1182

Table A7.5 Adolescent knowledge of AIDS and sexual behavior

Background Characteristic	Ever Heard of AIDS	Knows Ways to Avoid AIDS	Ever Had Sex	Age at First Intercourse	Last Intercourse Used Condom	Ever Used Condom	Number of Sex Partners in Last 12 Months			
	Pct.	Pct.	Pct.	Mean	Pct.	Pct	0	1	2+	Total
District Council										
Alfred Nzo	94.9	64.9	38.2	15.3	0.0	0.0	64.9	33.1	2.1	100.0
Amatola	98.3	89.8	54.0	15.8	9.3	12.1	47.7	49.4	2.9	100.0
Chris Hani	93.6	95.4	58.0	15.4	8.4	9.5	44.5	53.7	1.8	100.0
Mandela	98.6	99.3	46.7	15.6	19.4	23.2	55.9	39.6	4.5	100.0
Oliver Tambo	91.6	86.8	60.3	15.3	6.3	8.0	45.0	51.8	3.2	100.0
Ukhahlamba	96.0	94.2	66.9	15.4	0.0	0	35.0	62.3	2.7	100.0
Western District	100.0	100.0	73.6	15.0	22.6	22.6	26.4	65.3	8.3	100.0
Ethnicity										
Black	94.6	89.6	59.0	15.4	7.4	8.9	44.2	52.5	3.3	100.0
Colored	98.2	100.0	34.0	15.5	34.7	34.7	68.5	29.7	1.8	100.0
White/Asian	100.0	100.0	17.9	16.6		100.0	100.0			100.0
Other Ethnic	100.0									
Rural Residence										
Urban	98.8	100.0	49.1	15.5	17.5	19.8	53.4	42.9	3.7	100.0
Rural	95.2	90.3	62.1	15.4	6.7	8.5	39.6	57.3	3.2	100.0
Former Transkei	92.0	82.8	56.4	15.3	5.6	7.1	48.6	48.4	3.0	100.0
Income										
Lowest Quartile	92.0	84.9	59.8	15.1	3.8	5.4	43.3	53.9	2.8	100.0
2nd Lowest	93.9	86.5	59.4	15.4	6.4	8.5	43.9	51.3	4.8	100.0
2nd Highest	94.8	91.3	63.3	15.3	9.6	10.0	40.1	56.9	3.0	100.0
Highest Quartile	100.0	100.0	39.9	15.9	22.3	25.9	62.5	35.1	2.4	100.0
Total	95.1	90.6	55.9	15.4	9.4	11.0	47.3	49.4	3.3	100.0

Table A8.1 Government clinic characteristics

	Alfred Nzo		Amatole		Chris Hani		Mandela		Oliver Tambo		Ukhahlamba		Western	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Number of Facilities	9		41		29		36		40		7		15	
Staffing														
Doctors	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.60	0.13	0.65	0.14	0.38	0.00	0.00
Days per month with a doctor	0.56	0.53	2.15	2.43	1.21	3.77	8.36	8.00	1.00	3.27	3.14	7.45	6.20	10.03
Nurses	3.22	1.09	6.49	5.29	4.55	4.74	10.64	11.19	4.65	4.02	5.57	6.53	2.33	1.68
Pct. Nursing posts filled	0.79	0.25	0.93	0.19	0.96	0.15	0.98	0.05	0.87	0.23	0.89	0.22	0.91	0.18
Any Community Health Workers?	0.56	0.53	0.46	0.50	0.69	0.47	0.53	0.51	0.63	0.49	1.00	0.00	0.53	1.52
Community Health Workers	2.67	3.87	2.15	4.63	4.34	5.18	2.22	2.74	6.78	7.79	5.00	2.71	2.27	0.52
Total Support Staff	1.22	1.48	2.90	2.71	3.76	4.14	3.14	5.33	3.00	4.85	0.29	0.76	1.33	3.61
Total Staff	4.44	2.46	9.39	6.74	8.31	7.18	14.03	15.90	7.78	7.90	6.00	7.64	3.67	1.05
Training (number of staff trained in past 12 months)														
ANC Care	0.44	0.53	0.71	1.21	0.24	0.58	1.61	6.07	0.45	0.68	0.43	0.53	0.47	2.09
Family planning	0.56	0.73	0.46	0.74	1.34	2.84	3.39	6.10	0.45	0.68	0.43	0.53	0.60	0.92
STD syndromic management	0.78	0.67	1.02	1.04	1.69	1.69	3.78	6.15	0.78	0.66	0.71	0.76	1.40	1.06
EPI - immunization	0.89	0.60	1.05	1.14	1.21	1.11	2.33	2.41	0.75	0.74	0.86	0.90	0.87	1.24
TB	0.89	0.78	1.46	1.05	1.48	1.27	4.25	6.17	0.80	0.65	0.57	0.79	1.67	1.25
Child Curative Care	0.67	0.71	0.41	0.71	0.62	1.15	3.36	6.14	0.55	0.71	1.14	1.07	0.13	0.90
Clinical Diagnosis	0.44	0.73	0.37	0.62	0.62	1.40	3.08	6.15	0.38	0.49	1.00	1.15	0.60	0.35
HIV/AIDS	0.89	0.60	0.93	1.13	1.48	2.18	3.14	3.71	0.53	0.60	1.00	1.15	1.33	1.12
IMCI	0.67	0.71	0.37	0.73	0.24	0.64	2.33	2.44	0.45	0.68	0.86	0.69	0.27	1.11
Management	1.00	0.50	0.95	0.97	0.83	1.28	1.03	1.50	0.65	0.66	0.71	0.49	0.53	0.70
Nurses trained in PHC	0.00	0.00	0.83	1.26	1.14	1.38	3.39	7.00	0.45	0.75	1.86	0.90	0.27	0.53
Total Staff Trained	7.22	6.54	8.56	10.61	10.90	15.53	31.69	53.83	6.23	7.30	9.57	8.97	8.13	6.25

Table A8.1 Government clinic characteristics (continued)

	Alfred Nzo		Amatole		Chris Hani		Mandela		Oliver Tambo		Ukhahlamba		Western	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Facilities														
Have electricity	0.78	0.44	0.73	0.45	0.59	0.50	1.00	0.00	0.68	0.47	0.71	0.49	1.00	0.00
Power interruptions in the past month	4.71	11.21	1.81	3.23	0.82	1.17	0.17	0.51	0.79	1.52	0.25	0.50	1.00	2.88
Have piped water?	0.56	0.53	0.78	0.42	0.69	0.47	1.00	0.00	0.30	0.46	0.71	0.49	1.00	0.00
Water supply interruptions in past month	11.33	14.58	2.35	7.50	2.50	3.18	1.39	4.67	2.31	7.73	0.20	0.45	0.07	0.26
Days per week services are offered														
EPI - immunization	4.11	2.47	4.51	1.65	5.45	1.64	4.22	1.66	4.33	1.69	4.29	1.50	4.27	1.39
Family planning	5.44	0.88	5.10	0.89	5.86	0.99	4.97	0.61	5.08	1.07	5.00	0.00	4.47	1.36
ANC Care	4.11	2.47	2.98	2.07	5.21	1.93	1.33	2.07	4.03	2.01	4.43	1.51	3.87	1.68
Postnatal Care	4.44	2.40	4.29	1.93	5.03	2.28	1.81	2.44	4.33	2.13	2.86	2.67	4.40	1.35
Delivery Care	4.22	2.82	3.90	2.81	3.34	3.35	0.19	1.17	3.15	3.08	0.00	0.00	0.20	0.77
HIV Counseling	1.00	2.29	4.32	2.26	4.31	2.61	4.58	1.40	3.35	2.77	2.86	2.67	4.80	0.56
STD treatment	5.67	1.00	5.27	1.16	5.86	0.99	4.31	1.75	5.30	1.07	5.00	0.00	4.20	1.61
Child Curative Care	5.67	1.00	5.27	1.16	5.86	0.99	4.86	0.83	5.28	1.04	5.00	0.00	4.73	0.59
Nutrition/Growth Monitoring	5.67	1.00	4.68	1.77	5.72	1.33	4.64	1.22	4.98	1.44	5.00	0.00	4.40	1.35
Adult Curative Care	5.67	1.00	5.27	1.16	5.86	0.99	4.72	1.16	5.40	0.81	5.29	0.76	4.47	1.36
TB diagnosis	1.56	3.09	4.00	2.56	4.90	2.18	4.86	0.83	1.70	2.45	3.57	2.44	4.80	0.56
TB treatment	3.78	2.95	4.56	1.73	5.38	1.76	4.58	1.40	3.65	2.60	3.57	2.44	4.13	1.77
Chronic Diseases	5.22	1.86	5.07	1.27	5.69	1.47	3.06	2.47	5.28	0.93	5.29	0.76	4.13	1.77
Total Service Availability	5.89	1.05	6.02	1.01	6.62	0.68	5.58	1.13	6.18	1.13	6.29	1.11	5.07	0.80
Person on call 24 hours?	0.33	0.50	0.32	0.47	0.28	0.45	0.11	0.32	0.68	0.47	0.00	0.00	0.07	2.46
Transport Available?	0.00	0.00	0.02	0.16	0.00	0.00	0.28	0.45	0.03	0.16	0.00	0.00	0.00	0.26
Community Health Committee?	1.00	0.00	0.51	0.51	0.69	0.47	0.78	0.42	0.95	0.22	0.57	0.53	0.40	0.00
System for patient complaints?	0.56	0.53	0.63	0.49	0.45	0.51	0.83	0.38	0.60	0.50	0.43	0.53	0.27	0.51

Table A8.1 Government clinic characteristics (continued)

	Alfred Nzo		Amatole		Chris Hani		Mandela		Oliver Tambo		Ukhahlamba		Western	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Vaccines														
Mean vaccines available	3.89	1.62	3.59	1.72	3.90	1.54	4.17	1.61	3.68	1.65	4.00	1.83	4.33	0.46
Pct. of clinics with…														
Measles vaccine	0.78	0.44	0.49	0.51	0.69	0.47	0.81	0.40	0.63	0.49	0.86	0.38	0.80	1.35
DPT vaccine	0.89	0.33	0.80	0.40	0.86	0.35	0.83	0.38	0.83	0.38	0.86	0.38	0.93	0.41
Polio vaccines	0.67	0.50	0.73	0.45	0.83	0.38	0.89	0.32	0.80	0.41	0.86	0.38	0.93	0.26
BCG vaccine	0.89	0.33	0.78	0.42	0.69	0.47	0.83	0.38	0.73	0.45	0.57	0.53	0.73	0.26
Hepatitis vaccine	0.67	0.50	0.78	0.42	0.83	0.38	0.81	0.40	0.70	0.46	0.86	0.38	0.93	0.46
Facility Capacity														
Index of Facility Capacity	10.33	1.12	10.20	1.58	9.24	1.79	11.83	2.21	9.65	1.94	9.86	2.79	11.47	0.26
STD syndromic management	0.89	0.33	0.68	0.47	0.69	0.47	0.78	0.42	0.85	0.36	0.71	0.49	0.93	1.68
Ciprofloxacin tabs	71	99	101	242	109	183	444	1536	24	49	115	92	104	0
Benzathene penicillin injections	46	45	62	165	48	54	68	84	56	114	60	76	50	237
Pct. of facilites with cipro and penicillin	0.89	0.33	0.51	0.51	0.76	0.44	0.78	0.42	0.33	0.47	0.86	0.38	1.00	57.43
TB drugs available?	0.67	0.50	0.68	0.47	0.24	0.44	0.67	0.48	0.33	0.47	0.71	0.49	0.73	0.00
Refrigerator working?	0.78	0.44	0.61	0.49	0.69	0.47	0.78	0.42	0.73	0.45	0.57	0.53	0.73	0.46
Measles vaccine	0	0	10	26	7	22	1	1	3	6	0	0	4	0
Sphygmomanometer?	0.78	0.44	0.95	0.22	0.93	0.26	1.00	0.00	0.80	0.41	0.86	0.38	1.00	4.81
Stethoscope	0.89	0.33	0.93	0.26	0.97	0.19	0.94	0.23	0.85	0.36	1.00	0.00	1.00	0.00
Radio?	0.00	0.00	0.12	0.33	0.10	0.31	0.06	0.23	0.40	0.50	0.00	0.00	0.00	0.00
Telephone?	0.00	0.00	0.66	0.48	0.59	0.50	0.94	0.23	0.15	0.36	0.71	0.49	1.00	0.00

Table A8.2 Probit estimation of use of modern contraception

Independent Variables	Modern Method Use					
	(1) Full Sample		(2) Transkei Only		(3) Interacted Model	
	Coef.	Z	Coef	Z	Coef	Z
Age (omitted=15-19)						
20-24	0.025	0.24	0.317	2.20	-0.282	-1.92
25-29	0.139	1.02	0.406	1.92	-0.090	-0.50
30-34	-0.006	-0.04	0.321	1.47	-0.310	-1.50
35-39	0.087	0.67	0.201	1.03	0.004	0.02
40-44	-0.021	-0.14	0.391	1.90	-0.384	-1.78
45-49	-0.280	-1.26	0.101	0.32	-0.568	-1.91
Education (omitted=none)						
Primary	0.371	2.22	0.666	2.62	0.106	0.45
Secondary	0.694	4.38	0.885	3.56	0.535	2.31
University	0.638	2.67	0.859	2.21	0.430	1.37
Asset Index	0.081	1.83	0.070	1.01	0.095	1.81
Married	-0.258	-3.11	-0.265	-2.26	-0.274	-2.30
Cash-earning job	0.231	2.03	0.120	0.71	0.335	2.19
Former Transkei	-0.575	-5.81			-1.900	-2.03
Interacted Individual Characteristics						
Age *Transkei						
20-24*Transkei					0.598	2.92
25-29*Transkei					0.496	1.79
30-34*Transkei					0.631	2.10
35-39*Transkei					0.197	0.75
40-44*Transkei					0.775	2.61
45-49*Transkei					0.670	1.54
Education (omitted=none)						
Primary*Transkei					0.561	1.63
Secondary*Transkei					0.350	1.04
University*Transkei					0.428	0.86
Asset Index * Transkei					-0.025	-0.28
Married * Transkei					0.009	0.05
Cash-earning job * Transkei					-0.215	-0.95

Table A8.2 Probit estimation of use of modern contraception (continued)

Independent Variables	(1) Full Sample		(2) Transkei Only		(3) Interacted Model	
	Coef.	Z	Coef	Z	Coef	Z
Facility Characteristics						
Distance	0.004	0.77	0.009	1.50	0.006	0.88
Days Per Month with Doctor	0.001	0.10	0.007	0.36	-0.011	-0.92
Pct. Nursing Posts Filled	0.584	2.22	0.611	1.63	0.521	1.40
Training in Family Planning	0.025	1.35	-0.067	-0.64	0.044	1.78
Training in HIV/AIDS	-0.053	-1.11	-0.056	-0.50	-0.024	-0.37
Facility Capacity Index	0.017	0.72	0.034	1.14	-0.021	-0.53
Service Availability	-0.071	-1.48	-0.055	-0.95	-0.053	-0.65
Recent Supervision Visit	0.217	1.91	0.159	1.15	0.253	1.30
Interacted Facility Characteristics						
Distance * Transkei					0.004	0.43
Days Per Month with Doctor * Transkei					0.018	0.80
Pct. Nursing Posts Filled * Transkei					0.090	0.17
Training in Family Planning * Transkei					-0.110	-1.04
Training in HIV/AIDS * Transkei					-0.032	-0.25
Facility Capacity Index * Transkei					0.056	1.11
Service Availability * Transkei					-0.003	-0.03
Recent Supervision Visit * Transkei					-0.094	-0.39
Intercept	-0.496	-1.09	-1.775	-3.09	0.125	0.17
Obs.	1332		683		1332	
Wald Chi2(21)	152.08		80.66		204.75	
Wald Test Facility Characteristics=0						
Chi2(8)	12.73		11.68		9.72	
Prob>chi2	0.1214		0.166		0.2854	
Wald Test (Interacted Individual Chars)						
Chi2(12)					18.51	
Prob>chi2					0.1011	
Wald Test (Interacted Facility Chars)						
Chi2(8)					4.34	
Prob>chi2					0.8251	

Table A8.3 Probit estimation of unmet need for family planning

Independent Variables	Unmet Need for Family Planning			
	Full Sample		Interacted Model	
	Coef.	Z	Coef.	Z
Age (omitted=15-19)				
20-24	0.032	0.21	0.262	1.15
25-29	-0.076	-0.41	-0.094	-0.34
30-34	0.321	1.89	0.161	0.77
35-39	0.414	2.25	0.263	1.10
40-44	0.436	2.52	0.576	2.28
45-49	0.378	1.68	0.490	1.58
Education (omitted=none)				
Primary	-0.140	-0.91	0.032	0.14
Secondary	-0.279	-1.78	-0.370	-1.58
University	-0.035	-0.14	-0.224	-0.62
Asset Index	-0.081	-1.45	-0.061	-0.76
Married	0.707	8.02	0.770	4.48
Cash-earning job	-0.246	-1.56	-0.179	-0.79
Former Transkei	0.378	3.74	1.154	1.04
Interacted Individual Characteristics				
Age *Transkei				
20-24*Transkei			-0.347	-1.16
25-29*Transkei			0.031	0.08
30-34*Transkei			0.252	0.77
35-39*Transkei			0.285	0.79
40-44*Transkei			-0.300	-0.90
45-49*Transkei			-0.266	-0.61
Education (omitted=none)				
Primary*Transkei			-0.297	-0.95
Secondary*Transkei			0.103	0.32
University*Transkei			0.282	0.55
Asset Index * Transkei			-0.024	-0.20
Married * Transkei			-0.062	-0.31
Cash-earning job * Transkei			-0.084	-0.27

Table A8.3 Probit estimation of unmet need for family planning (continued)

	Unmet Need for Family Planning			
Independent Variables	Full Sample		Interacted Model	
	Coef.	Z	Coef.	Z
Facility Characteristics				
Distance	-0.004	-0.64	-0.017	-2.34
Days Per Month with Doctor	-0.002	-0.24	0.014	1.21
Pct. Nursing Posts Filled	-0.087	-0.38	-0.141	-0.42
Training in Family Planning	0.000	0.03	-0.036	-1.37
Training in HIV/AIDS	-0.057	-0.95	-0.046	-0.53
Facility Capacity Index	-0.014	-0.54	0.033	0.72
Service Availability	0.066	1.44	0.086	0.86
Recent Supervision Visit	-0.039	-0.36	-0.046	-0.27
Interacted Facility Characteristics				
Distance * Transkei			0.024	2.53
Days Per Month with Doctor * Transkei			-0.033	-2.05
Pct. Nursing Posts Filled * Transkei			0.043	0.10
Training in Family Planning * Transkei			0.148	1.69
Training in HIV/AIDS * Transkei			-0.118	-0.97
Facility Capacity Index * Transkei			-0.044	-0.75
Service Availability * Transkei			-0.078	-0.69
Recent Supervision Visit * Transkei			0.071	0.32
Intercept	-1.657	-3.18	-2.114	-2.47
Obs.	1326		1326	
Wald Chi2(21)	156.89			
Wald Test (Facility Characteristics)				
Chi2(8)	5.48		10.78	
Prob>chi2	0.705		0.2143	
Wald Test (Interacted Individ. Chars)				
Chi2(12)			14.63	
Prob>chi2			0.2622	
Wald Test (Interacted Facility Chars)				
Chi2(8)			18.57	
Prob>chi2			0.0174	

Table A8.4 Probit estimations of childhood immunizations, children aged 12-35 months

Individual	DPT3		Polio3		Measles		Full Coverage	
Characteristics	Coef	Z	Coef	Z	Coef	Z	Coef	Z
Female	-0.681	-1.89	-0.505	-1.51	-0.217	-0.75	-0.514	-1.92
Age in months	0.096	0.75	-0.091	-0.66	0.498	3.22	0.040	0.33
Age (omitted=15-24)								
25-34	0.271	0.67	0.552	1.52	-0.760	-1.68	0.242	0.78
35-49	-0.416	-0.94	-0.279	-0.73	-1.101	-1.97	-0.254	-0.81
Education (years)	-0.019	-0.42	-0.072	-1.67	-0.094	-1.84	-0.060	-1.44
Asset Index	0.297	3.26	0.490	4.14	0.174	1.08	0.236	1.90
Married	0.501	2.03	0.249	0.97	1.218	2.72	0.371	1.71
Cash-earning Job	-1.357	-2.24	-0.623	-1.26	-0.395	-0.68	-0.231	-0.53
Former Transkei	-3.633	-2.51	-4.492	-3.29	-2.809	-1.82	-4.013	-3.14
Interacted Individual Characteristics								
Female*Transkei	1.161	2.80	0.972	2.46	0.394	1.16	0.858	2.70
Age in months * Transkei	-0.116	-0.68	0.056	0.32	-0.483	-2.47	-0.130	-0.83
Age (omitted=15-24)								
25-34 * Transkei	-0.017	-0.03	0.008	0.02	0.641	1.14	0.124	0.33
35-49 * Transkei	0.553	1.08	0.452	1.01	0.707	1.09	0.512	1.37
Education (years) * Transkei	0.127	2.33	0.125	2.37	0.165	2.70	0.107	2.19
Asset Index * Transkei	-0.529	-2.93	-0.637	-3.17	-0.295	-1.32	-0.395	-2.01
Married * Transkei	-0.471	-1.35	-0.356	-1.06	-1.127	-2.23	-0.489	-1.62
Cash-earning Job	0.948	1.44	0.254	0.45	0.490	0.75	-0.131	-0.27
Facility Characteristics								
Distance	0.102	2.87	0.045	2.30	-0.011	-0.58	0.021	1.73
Pct. Nursing Posts Filled	0.883	1.54	0.311	0.53	-0.669	-0.96	0.153	0.29
EPI Training	-0.269	-1.44	-0.033	-0.19	-0.279	-1.70	-0.157	-1.02
EPI days per week	-0.032	-0.44	0.008	0.11	0.149	1.83	0.035	0.61
Facility Capacity Index	-0.087	-1.08	-0.076	-1.01	-0.010	-0.11	-0.115	-1.58
Vaccines	-0.142	-1.85	-0.120	-1.42	-0.116	-1.58	-0.147	-2.14
Comm. Health Worker	0.716	2.09	0.443	1.38	-0.229	-0.69	0.182	0.61
Interacted Facility Characteristics								
Distance*Transkei	-0.131	-3.50	-0.062	-2.87	0.013	0.46	-0.024	-1.51
Pct. Nursing Posts Filled*Transkei	0.805	0.97	1.363	1.53	1.750	1.70	1.435	1.57
EPI Training*Transkei	0.528	2.07	0.122	0.58	0.428	1.89	0.154	0.76
EPI days per week*Transkei	0.014	0.15	-0.035	-0.37	-0.195	-2.13	-0.017	-0.22
Facility Capacity Index*Transkei	0.050	0.53	0.077	0.86	-0.038	-0.36	0.087	1.02
Vaccines*Transkei	0.248	2.18	0.201	1.69	0.146	1.59	0.183	2.02
Comm. Health Worker	-0.464	-1.04	-0.031	-0.08	0.034	0.09	-0.171	-0.48
Intercept	0.948	0.78	1.914	1.77	2.285	1.73	1.795	1.71

Table A8.4 Probit estimations of childhood immunizations, children aged 12-35 months (continued)

Individual Characteristics	DPT3 Coef	DPT3 Z	Polio3 Coef	Polio3 Z	Measles Coef	Measles Z	Full Coverage Coef	Full Coverage Z
Obs	357		325		325		359	
Wald Chi2(31)	163.41		125.78		47.04		74.12	
Wald Test (Facility Chars)								
Chi2(7)	16.83		11.42		12.8		12.69	
Prob>chi2	0.0185		0.1214		0.077		0.0801	
Wald Test (Interacted Individ. Chars)								
Chi2(6)	17.91		16.46		15.84		13.71	
Prob>chi2	0.0065		0.0115		0.015		0.033	
Wald Test (Interacted Facility Chars)								
Chi2(8)	23.12		19.07		16.49		11.64	
Prob>chi2	0.0016		0.008		0.021		0.1132	

Table A8.5 Probit estimations of use of condom during last sex

Independent Variables	Full Sample Coef	Full Sample Z	Transkei Only Coef	Transkei Only Z	Interacted Model Coef	Interacted Model Z
Age (omitted=15-24)						
25-34	-0.039	-0.16	0.336	0.91	-0.268	-0.72
35-49	-0.302	-0.95	-0.246	-0.49	-0.530	-1.36
Education (Years)	0.100	3.41	0.141	2.94	0.081	1.85
Asset Index	0.076	1.01	0.206	1.38	0.053	0.69
Married	-0.265	-1.14	-0.874	-3.14	0.167	0.51
Cash-earning Job	0.137	0.63	0.136	0.39	0.034	0.11
Former Transkei	-0.001	0.00			0.306	0.12
Media Exposure	0.034	0.26	0.343	1.51	-0.119	-0.69
Age (omitted=15-24)*Transkei						
25-34 * Transkei					0.604	1.15
35-49 * Transkei					0.285	0.45
Education (years) * Transkei					0.060	0.93
Asset Index * Transkei					0.153	0.92
Married * Transkei					-1.041	-2.44
Cash-earning Job					0.102	0.22
Media Exposure*Transkei					0.462	1.62
Facility Characteristics						
Distance	0.018	1.76	0.014	0.82	0.013	1.18
Doctor Days per month	0.014	0.83	-0.057	-2.06	0.077	3.74
Pct. Nursing Posts Filled	0.532	1.34	1.637	2.07	0.454	0.83
HIV/AIDS training	0.048	0.72	-0.410	-1.84	0.123	1.76
F.P. Training	0.059	1.35	0.138	0.50	0.026	0.61
Facility Capacity Index	0.024	0.40	-0.015	-0.16	0.131	1.44
Service Availability	-0.045	-0.68	-0.121	-0.68	-0.110	-1.42
Commun. Health Committee	0.327	1.20	0.369	0.74	0.807	2.37

Table A8.5. Probit estimations of use of condom during last sex (continued)

Independent Variables	Full Sample Coef	Z	Transkei Only Coef	Z	Interacted Model Coef	Z
Interacted Facility Characteristics						
Distance*Transkei					0.002	0.09
Doctor Days per month*Transkei					-0.134	-3.89
Pct. Nursing Posts Filled*Transkei					1.184	1.23
HIV/AIDS Training*Transkei					-0.533	-2.30
F.P. Training*Transkei					0.113	0.41
Facility Capacity Index*Transkei					-0.145	-1.12
Service Availability*Transkei					-0.011	-0.06
Commun. Health Comm.*Transkei					-0.438	-0.73
Intercept	-3.233	-2.95	-3.648	-1.99	-3.954	-2.31
Obs.	643		316		643	
Wald Chi2(14)	52.57		182.58			
Wald Test						
Chi2(8)	14.62		58.15		23.24	
Prob>chi2	0.0669		0		0.003	
Wald Test (Interacted Individ. Chars)						
Chi2(7)					14.09	
Prob>chi2					0.05	
Wald Test (Interacted Facility Chars)						
Chi2(8)					41.14	
Prob>chi2					0	

Table A8.6 Probit estimation of delivery in government clinic

Independent Variables	Basic Model Coef	Basic Model Z	Interacted Model Coef	Interacted Model Z
Age (omitted=15-24)				
25-34	-0.458	-3.45	-0.369	-1.55
35-49	-0.540	-3.53	-0.688	-2.61
Education (omitted=none)				
Primary	0.451	2.77	0.500	1.48
Secondary	0.353	3.51	0.474	2.72
University	0.936	4.06	0.781	1.93
Asset Index	0.270	4.07	0.357	4.11
Married	0.057	0.48	-0.169	-0.96
Cash-earning Job	0.119	0.72	-0.139	-0.49
Former Transkei	-0.352	-2.31	-2.180	-2.39
Age (omitted=15-24)*Transkei				
25-34 * Transkei			-0.143	-0.50
35-49 * Transkei			0.137	0.42
Education (omitted=none)				
Primary*Transkei			-0.105	-0.27
Secondary*Transkei			-0.163	-0.76
University*Transkei			0.332	0.68
Asset Index * Transkei			-0.104	-0.77
Married * Transkei			0.345	1.46
Cash-earning job * Transkei			0.423	1.23
Facility Characteristics				
Distance	-0.001	-0.11	-0.003	-0.26
Doctor Days per month	0.032	1.76	0.052	1.51
Pct. Nursing Posts Filled	0.961	2.79	0.698	1.58
ANC Training	0.062	1.96	0.108	2.35
Delivery Services	0.051	2.13	0.043	1.13
Facility Capacity Index	0.033	1.03	-0.065	-1.45

Table A8.6 Probit estimation of delivery in government clinic (continued)

Independent Variables	Basic Model Coef	Z	Interacted Model Coef	Z
Interacted Facility Characteristics				
Distance*Transkei			0.016	0.68
Doctor Days per month*Transkei			-0.021	-0.54
Pct. Nursing Posts Filled*Transkei			0.431	0.69
ANC Training*Transkei			-0.068	-1.14
Delivery Services*Transkei			0.024	0.50
Facility Capacity Index*Transkei			0.140	2.34
Intercept	-0.512	-0.95	0.629	1.11
Obs			1005	
Wald Chi2(14)	96.96		148.61	
Wald Test				
Chi2(6)	15.31		12.58	
Prob>chi2	0.018		0.0501	
Wald Test (Interacted Individ. Chars)				
Chi2(6)			3.24	
Prob>chi2			0.7782	
Wald Test (Interacted Facility Chars)				
Chi2(6)			7.22	
Prob>chi2			0.3006	

Table A8.7 Probit estimations of adult use of health services

Independent Variables	Basic Model Coef	Z	Interacted Model Coef	Z
Female	0.237	3.29	0.269	2.52
Age (omitted=15-24)				
25-44	0.130	1.49	0.213	1.82
45-64	0.342	3.59	0.529	4.31
65+	0.471	4.48	0.622	4.38
Education (years)	0.005	2.07	0.003	0.93
Asset Index	####	-0.20	-0.031	-1.03
Transkei	####	-2.05	1.427	2.32
Female*Transkei			-0.079	-0.56
Age (omitted=15-24)				
25-44*Transkei			-0.144	-0.84
45-64*Transkei			-0.401	-2.11
65+*Transkei			-0.302	-1.45
Education (years)*Transkei			0.004	0.93
Asset Index*Transkei			0.130	1.80
Facility Characteristics				
Distance	####	-2.26	-0.010	-1.69
Doctor Days per month	####	-0.22	-0.004	-0.17
Pct. Nursing Posts Filled	0.015	0.07	0.275	1.12
HIV/AIDS training	0.071	1.79	0.096	1.80
Facility Capacity Index	####	-0.03	0.039	1.46
Delivery Services	0.000	0.00	0.013	0.28
Piped Water	0.102	1.51	0.138	1.32
Commun.Health Comm.	0.145	1.54	0.156	1.48
Interacted Facility Chars.				
Distance*Transkei			0.004	0.63
Doctor Days per month*Transkei			0.006	0.22
Pct. Nursing Posts Filled*Transkei			-0.461	-1.12
HIV/AIDS training*Transkei			-0.107	-1.44
Facility Capacity Index*Transkei			-0.074	-2.30
Delivery Services*Transkei			-0.013	-0.22
Piped Water * Transkei			-0.042	-0.34
Commun.Health Comm. * Transkei			0.062	0.35
Intercept	####	-3.62	-2.107	-4.64
Obs.	2037		2037	
Wald Chi2(15)	64.9		94.61	
Wald Test				
Chi2(8)	15.9		17.93	
Prob>chi2	0.04		0.0218	
Wald Test Individual				
Chi2(6)			11.79	
Prob>chi2			0.0668	
Wald Test Facility Interacted				
Chi2(8)			11.92	
Prob>chi2			0.1546	

Table A8.8 Ordinary least squares estimations of HIV/AIDS knowledge

	Coef	Z
Age (omitted=15-19)		
20-24	0.804	2.42
25-29	-0.308	-0.77
30-34	-0.079	-0.19
35-39	0.592	1.24
40-44	-0.547	-1.02
45-49	0.234	0.42
Education (omitted=none)		
Primary	1.614	1.79
Secondary	3.120	3.49
University	4.821	5.04
Asset Index	0.111	0.86
Married	0.363	1.40
Cash-earning job	0.072	0.23
Former Transkei	0.072	0.03
Interacted Individual Characteristics		
Age *Transkei		
20-24*Transkei	0.413	0.85
25-29*Transkei	1.587	2.73
30-34*Transkei	1.500	2.28
35-39*Transkei	0.456	0.62
40-44*Transkei	1.871	2.55
45-49*Transkei	1.452	2.08
Education (omitted=none)		
Primary*Transkei	0.333	0.31
Secondary*Transkei	0.703	0.67
University*Transkei	-0.426	-0.37
Asset Index * Transkei	0.503	2.67
Married * Transkei	-0.469	-1.06
Cash-earning job * Transkei	0.549	1.03

Table A8.8 Ordinary least squares estimations of HIV/AIDS knowledge (continued)

	Coef	Z
Facility Characteristics		
Distance	-0.002	-0.04
Pct. Nursing Posts Filled	1.218	1.14
Training in HIV/AIDS	0.172	0.99
Facility Capacity Index	0.113	1.08
Service Availability	-0.051	-0.30
Interacted Facility Characteristics		
Distance * Transkei	0.009	0.21
Pct. Nursing Posts Filled*Transkei	-1.726	-1.41
Training in HIV/AIDS * Transkei	0.061	0.23
Facility Capacity Index * Transkei	-0.122	-0.94
Service Availability * Transkei	0.210	0.96
Intercept	4.303	0.96
Obs	1723	
F(35,99)	18	
Wald Test ? (Interacted individ)		
F(12,99)	2.75	
Prob>F	0.03	
Wald Test (Facility chars)		
F(5,99)	0.94	
Prob>F	0.4584	
Walt Test (Interacted Facility chars)		
F(5,99)	0.74	
Prob>F	0.5967	

APPENDIX B. CALCULATION OF MORTALITY RATES – 10 YEAR RECALL

Total mortality rates – Eastern Cape Province

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	37.2342	1499.4941	0.0248
1-2	13.0092	1451.7897	0.0090
3-5	14.0033	1424.8207	0.0098
6-11	25.7160	1380.1641	0.0186
12-23	18.3686	1321.1466	0.0139
24-35	3.9761	1292.2434	0.0031
36-47	2.4851	1286.3225	0.0019
48-59	1.4911	1280.5214	0.0012

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	24.8	36.1	60.9	20.0	79.7	13.9	6.2

Mortality Rates for Males and Females

Mortality rates for female = Male

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	21.2429	761.2639	0.0279
1-2	6.6558	728.0164	0.0091
3-5	7.8445	699.7719	0.0112
6-11	13.7008	660.1605	0.0208
12-23	10.0271	591.3420	0.0170
24-35	0.9940	515.3484	0.0019
36-47	0.0000	451.5213	0.0000
48-59	0.0000	387.3272	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	27.9	39.5	67.4	18.9	84.9	17.0	1.9

Mortality rates for female = Female

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	15.9913	729.4995	0.0219
1-2	6.3534	702.2491	0.0090
3-5	5.1648	681.5032	0.0076
6-11	11.0212	649.2064	0.0170
12-23	4.8623	586.6979	0.0083
24-35	0.4970	510.6071	0.0010
36-47	0.9940	435.9310	0.0023
48-59	0.0000	371.7685	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	21.9	32.5	54.4	11.5	65.3	8.3	3.3

Mortality Rates - Place of Residence

Mortality rates for (v025 = 1): Type of place of residence = Urban

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	6.9162	491.0466	0.0141
1-2	2.0748	481.3640	0.0043
3-5	2.0748	478.2518	0.0043
6-11	4.8413	474.1021	0.0102
12-23	3.4581	461.3072	0.0075
24-35	0.0000	457.5033	0.0000
36-47	0.0000	458.5407	0.0000
48-59	0.0000	464.4195	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	14.1	18.5	32.6	7.5	39.8	7.5	0.0

Mortality rates for (v025 = 2): Type of place of residence = Rural

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	30.3180	1008.4475	0.0301
1-2	10.9344	970.4257	0.0113
3-5	11.9284	946.5688	0.0126
6-11	20.8747	906.0620	0.0230
12-23	14.9105	859.8394	0.0173
24-35	3.9761	834.7401	0.0048
36-47	2.4851	827.7818	0.0030
48-59	1.4911	816.1019	0.0018

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	30.1	44.8	74.9	26.7	99.6	17.3	9.6

Mortality Rates – Transkei, Urban – Not Transkei, Rural – Not Transkei

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Mortality rates for transk2 = Urban – Not Transkei

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	6.9162	421.8851	0.0164
1-2	2.0748	413.5858	0.0050
3-5	2.0748	413.2400	0.0050
6-11	3.4581	409.7819	0.0084
12-23	2.0748	402.5199	0.0052
24-35	0.0000	404.2490	0.0000
36-47	0.0000	405.2864	0.0000
48-59	0.0000	412.8941	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	16.4	18.1	34.5	5.2	39.4	5.2	0.0

Mortality rates for transk2 = 1

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	4.4732	388.6673	0.0115
1-2	1.4911	381.7090	0.0039
3-5	4.4732	375.7448	0.0119
6-11	8.9463	359.8403	0.0249
12-23	2.9821	343.9358	0.0087
24-35	0.9940	344.4328	0.0029
36-47	0.0000	340.2081	0.0000
48-59	0.4970	339.2141	0.0015

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	11.5	39.8	51.3	13.0	63.6	8.7	4.3

Mortality rates for transk2 = 2

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	25.8449	688.9417	0.0375
1-2	9.4433	656.4949	0.0144
3-5	7.4553	635.8358	0.0117
6-11	13.3116	610.5419	0.0218
12-23	13.3116	574.6909	0.0232
24-35	2.9821	543.5616	0.0055
36-47	2.4851	540.8280	0.0046
48-59	0.9940	528.4131	0.0019

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	37.5	45.4	82.9	34.8	114.8	23.2	11.9

Mortality Rates by Asset Quartile

Mortality rates for pcquart = Lowest Quartile

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	10.9344	414.2137	0.0264
1-2	4.9702	398.4603	0.0125
3-5	3.9761	385.5379	0.0103
6-11	8.9463	367.0510	0.0244
12-23	8.6439	340.8603	0.0254
24-35	0.9940	322.3839	0.0031
36-47	1.4911	316.8194	0.0047
48-59	0.9940	306.2308	0.0032

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	26.4	45.3	71.7	36.1	105.1	25.4	11.0

Mortality rates for pcquart = 2nd Lowest Asset Quartile

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	15.6021	470.5869	0.0332
1-2	2.9821	452.4563	0.0066
3-5	5.9642	443.4666	0.0134
6-11	9.3355	427.1295	0.0219
12-23	7.8445	406.4809	0.0193
24-35	2.9821	389.7980	0.0077
36-47	0.9940	386.4701	0.0026
48-59	0.4970	386.6752	0.0013

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	33.2	40.0	73.2	30.6	101.5	19.3	11.5

Mortality rates for pcquart = 2nd Highest Asset Quartile

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	4.8623	332.4528	0.0146
1-2	2.9821	325.7536	0.0092
3-5	3.3713	323.3658	0.0104
6-11	6.0510	313.1875	0.0193
12-23	0.4970	303.4299	0.0016
24-35	0.0000	306.5738	0.0000
36-47	0.0000	305.5903	0.0000
48-59	0.0000	308.2489	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	14.6	37.9	52.5	1.6	54.0	1.6	0.0

Mortality rates for pcquart = Highest Asset Quartile

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	5.8353	282.2408	0.0207
1-2	2.0748	275.1195	0.0075
3-5	0.6916	272.4503	0.0025
6-11	1.3832	272.7961	0.0051
12-23	1.3832	270.3755	0.0051
24-35	0.0000	273.4877	0.0000
36-47	0.0000	277.4428	0.0000
48-59	0.0000	279.3665	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	20.7	14.8	35.4	5.1	40.4	5.1	0.0

Mortality Rates by Health Region

Mortality rates for (shhealth = 1): Eastern cape - health regions = Health region A

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	4.8413	263.3502	0.0184
1-2	1.1886	258.5089	0.0046
3-5	0.6916	257.9146	0.0027
6-11	1.1886	256.6287	0.0046
12-23	1.3832	251.9819	0.0055
24-35	0.0000	253.6242	0.0000
36-47	0.0000	255.1152	0.0000
48-59	0.0000	259.0164	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	18.4	11.6	30.0	5.5	35.4	5.5	0.0

Mortality rates for (shhealth = 2): Eastern cape - health regions = Health region B

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	2.8743	242.9360	0.0118
1-2	0.0000	237.9868	0.0000
3-5	3.3713	232.8760	0.0145
6-11	6.8504	223.3459	0.0307
12-23	0.0000	215.5014	0.0000
24-35	0.0000	219.4342	0.0000
36-47	0.0000	218.7321	0.0000
48-59	0.0000	220.6557	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	11.8	44.2	56.0	0.0	56.0	0.0	0.0

Mortality rates for (shhealth = 3): Eastern cape - health regions = Health region C

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	1.1886	200.3029	0.0059
1-2	1.8802	198.5634	0.0095
3-5	0.0000	200.9406	0.0000
6-11	2.3773	199.3523	0.0119
12-23	2.1827	196.2295	0.0111
24-35	0.9940	197.4510	0.0050
36-47	0.0000	194.7713	0.0000
48-59	0.0000	198.3911	0.0000

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	5.9	21.2	27.1	16.1	42.8	11.1	5.0

Mortality rates for (shhealth = 4): Eastern cape - health regions = Health region D

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	10.4374	389.5916	0.0268
1-2	4.9702	376.1287	0.0132
3-5	5.4672	362.4713	0.0151
6-11	7.4553	344.5247	0.0216
12-23	4.4732	318.2907	0.0141
24-35	0.9940	298.2798	0.0033
36-47	0.4970	296.7783	0.0017
48-59	0.4970	286.9997	0.0017

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	26.8	47.8	74.6	20.7	93.7	14.1	6.7

Mortality rates for (shhealth = 5): Eastern cape - health regions = Health region E

Period 1 (0-119 months before the survey)

Age Group	Deaths	Exposure	Probability
0	17.8926	403.3134	0.0444
1-2	4.9702	380.6019	0.0131
3-5	4.4732	370.6182	0.0121
6-11	7.8445	356.3125	0.0220
12-23	10.3295	339.1430	0.0305
24-35	1.9881	323.4541	0.0061
36-47	1.9881	320.9257	0.0062
48-59	0.9940	315.4585	0.0032

Mortality Rates

Period	Neonatal	PNN	Infant	Child	Under-5	2nd year	3rd-5th year
1	44.4	44.4	88.7	45.4	130.1	30.5	15.4