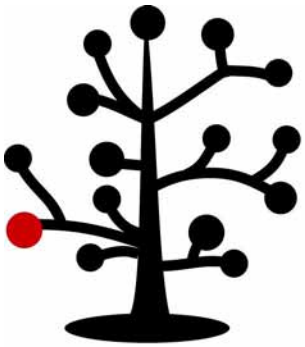

N.i.D.S.

NATIONAL INCOME DYNAMICS STUDY

Health: Analysis of the NIDS Wave 1 Dataset

Discussion Paper No. 2

Cally Ardington
Southern African Labour & Development Research Unit
cally.ardington@uct.ac.za

Anne Case
Princeton University
accase@princeton.edu

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1. Introduction

Health status and socioeconomic status are important determinants of individuals' wellbeing. Information on income alone, or on health alone, provides a less complete picture. Better health can lead to higher income, and higher income can lead to better health, so that we cannot fully understand the dynamics of either process without understanding both. Much of the research on international health and income has focused on the cross-country relationships between population health and national income. Starting from Preston (1975, 1980), these relationships have been used to investigate the causes of mortality decline, particularly the relative roles of income and of medical knowledge. And data on adult height have been used to investigate the causes of the historical decline in mortality, see in particular Fogel (1997, 2004), Floud, Wachter, and Gregory (1990), and Steckel (1995).

The Commission for Macroeconomics and Health (2001) used the same data to argue that it is health care, through its effect on health status, that is an important engine of economic growth. Another strand of research, particularly associated with Sen (see for example Sen 1999), and embodied in UNDPs Human Development Index, argues that comparisons of wellbeing must look at health (and education) together with income.

Until relatively recently, surveys that collected information on income rarely collected comprehensive information on health, while most standardized health surveys, the Demographic and Health Surveys (DHS) being the most notable examples, contained at best rudimentary and unsatisfactory information on economic status. The National Income Dynamics Study (NIDS) provides an ideal vehicle to understand the joint determination of economic status and health status in South Africa.

The NIDS adult health module includes self-reported health status and questions on a range of health conditions, recent health consultations, chronic conditions and medication, vision and hearing, activities of daily living, exercise, smoking, alcohol use and coverage by medical aid. The adult questionnaire also includes a battery of questions that allow for the construction of a depression index. Height, weight, waist circumference and blood pressure were measured.

The NIDS child questionnaire was administered to the mother, caregiver or another adult in the household who is knowledgeable about the child. The health module includes current health status, question about the child's birth, illness and disability, recent health consultations, vision and medical aid coverage. The child's height, weight and waist were also measured. This short

report on the health modules highlights three key areas where the NIDS data offer unique opportunities for advancing our understanding of the links between health status and socio-economic status.

Generally, people in developing countries undergoing health or epidemiological transition are burdened not only with the infectious diseases of the developing world, but increasingly by the chronic diseases of the developed world. Specifically with respect to malnutrition, these countries face the dual burden of under-nutrition in children and increasing obesity and the associated chronic health risks among adults (Puoane et al. 2002, Popkin and Doak 1998).

In South Africa, Puoane et al. (2002) using data from the 1998 Demographic and Health Survey (DHS) find very high rates of obesity among adults with 60% of African women classified as overweight or obese and rates of obesity five times higher for African women than for African men. Since the 1998 DHS there have been a number of localised studies examining obesity (Case and Deaton 2006, Case and Menendez 2007, Bärnighausen et al. 2008) but the anthropometric data collected by NIDS offer the first opportunity to investigate current rates of obesity in South Africa as a whole and importantly to examine changes in obesity over the last decade.

After HIV and AIDS, the largest threat to health in South Africa are the chronic diseases associated with obesity. Chronic health risks associated with obesity include, *inter alia*, hypertension, coronary heart disease, stroke and diabetes. In addition to measuring height and weight, NIDS measured the blood pressure of all respondents aged 15 and older. These data allow us to estimate the current national prevalence of hypertension and to compare these estimates with those from a decade ago using the DHS. We can also investigate the relationship between obesity and hypertension.

National data on malnutrition in children is even more out of date than that for adults. The 1993 Project for Statistics on Living Standards and Development (PSLSD) is the only nationally representative study to collect anthropometric data for children and measurements were only taken for those children under the age of five. Using the PSLSD data, Zere and McIntyre (2003) find a high prevalence of stunting and distinct socio-economic inequalities in malnutrition. NIDS data offers an opportunity to investigate changes in under-five malnutrition and the first national picture of the nutritional status of children of school-going age (six to 14 years).

There are thought to be important interactions between health, mental health and economic status. NIDS included a battery of questions that allow the calculation of a depression index. To

our knowledge there have been no national studies that allow an investigation into the links between depression and socio-economic status.

The next three sections present largely descriptive results that summarise the anthropometric and mental health data available in the NIDS health modules. The next section of this paper uses the anthropometric data collected by NIDS to provide a descriptive overview of obesity and hypertension among South African adults. This is followed by a section on malnutrition among children. The final section examines the prevalence of depression and its determinants.

2. Obesity and hypertension in adults

2.1. Prevalence of obesity

The Body Mass Index (BMI) is a measure of the nutritional status of adults and is calculated by dividing weight in kilograms by the square of height in metres. We follow WHO classifications for individuals aged 20 and older where a BMI under 18.5 is underweight, a BMI between 18.5 and 24.9 is normal, a BMI between 25 and 29.9 is overweight and a BMI of 30 or more is obese. For individuals aged 15 to 19 we use the reference distribution from the WHO (de Onis et al. 2007) and classify individuals as underweight if their BMI is more than two standard deviations below the median for their age, overweight if their BMI is between one and two standard deviations above the median and obese if their BMI is more than two standard deviations above the median. Women who reported that they were currently pregnant were excluded from the analysis.

Rates of under- and over-nourishment by population group, rural or urban location, per capita household income quintile, level of education and age are presented separately for men and women aged 15 and older in Tables 1 and 2. All results are weighted using the post stratification weights. The last two columns of each table show the percentage of respondents in each category for whom the BMI measurement is missing and the number of observations for which there is a valid BMI measure. Overall 11% of women and 12% of men are missing BMI. In 80% of the cases where BMI is missing, the respondents refused to have their height and weight measured. In 2% of cases the recorded height or weight was biologically implausible or, in the case of weight, beyond the weight that the scale could accurately measure. The reason for missing height and weight measurements on the remaining 18% of cases is not clear. Although there are no gender differences in the rates of missing data, rates of missing data are three times higher for white women than African women and two times higher for white men than African men. Those respondents living in urban areas, wealthier households and with more education are more likely to have missing anthropometric measurements. Among women, those 65 and older were twice as likely to be missing BMI than women younger than 65. The sizes of the white and Indian samples are fairly small. This coupled with lower household response rates and higher rates of missing anthropometric data amongst those who did respond, calls for caution in the interpretation of findings for these sub-samples.

Obesity among South African adults is a serious concern particularly for women. One third of women over the age of 15 were classified as obese in contrast to 11% of men. Around 60% of

women are classified as either overweight or obese in contrast to 31% of men. For both men and women obesity increases with age. The relationship between BMI and age is further explored in Figure 1 which presents BMI by age and sex. At every age the average BMI of women lies above that of men. For women, we observe a steep age-BMI profile in young adulthood where for each age from 15 to 37 an additional year is associated with an increase in BMI of 0.32. Women's BMI plateaus beyond the age of 37 at a BMI around 30. Around 70% of women over the age of 37 were either overweight or obese. Even among younger women obesity is a serious concern, with 13% of women aged 15 to 24 and 31% of women aged 25 to 34 either overweight or obese.

Figure 1. Body Mass Index by age and sex – South Africans aged 15 to 70

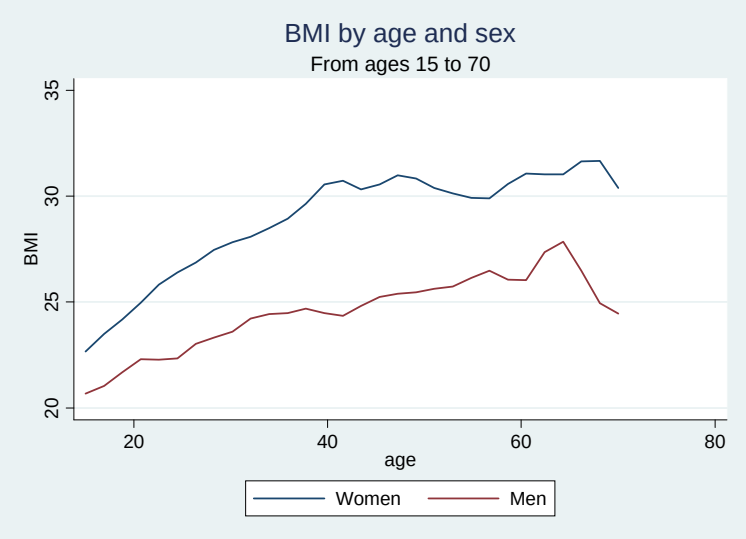
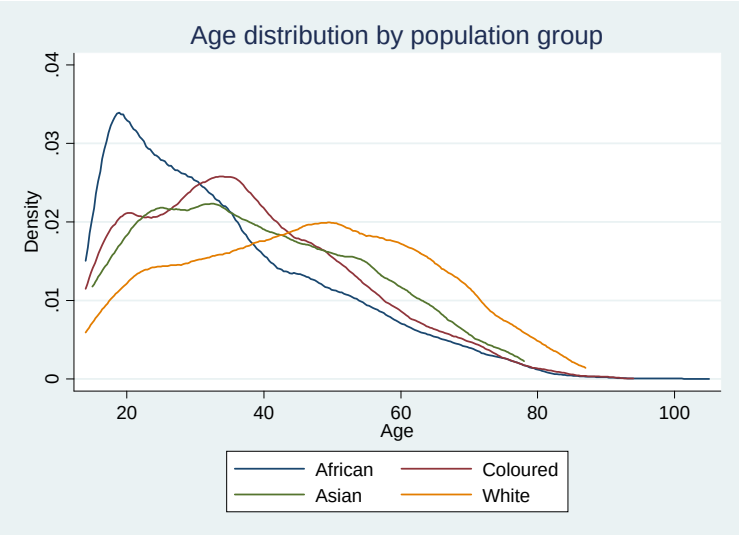


Figure 2 shows the weighted age distribution of the NIDS sample. The African sample is much younger than those of the other three main population groups with an average age of 35 years in contrast to an average age of 47 years for the white sample. Given the strong relationship between BMI and age it is not very informative to compare the prevalence of obesity among population groups without first controlling for age. Similarly age is a confounding factor in assessing the association between obesity and education. These relationships are better assessed later in this section in a multivariate context where we can control for age.

Figure 2. NIDS weighted sample age distribution by population group

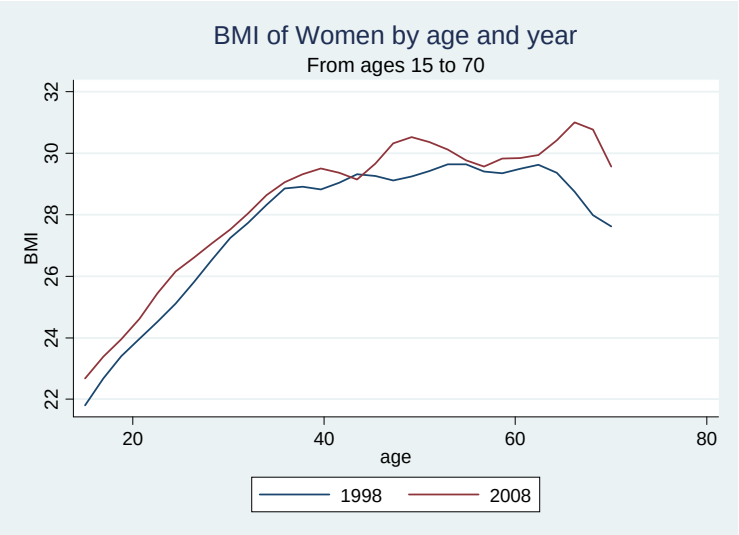


Tables 1 and 2 also show the number of under-nourished adults in South Africa. Less than 5% of women are classified as underweight. More than twice as many (12%) of men are classified as underweight. Rural men are more likely to be underweight. There are very few men with at least complete secondary education or in the top income quintile who are classified as underweight.

2.2. Changes in obesity over the last decade

The 1998 South African Demographic and Health Survey (DHS) measured heights and weights of adults aged 15 and older allowing us to examine changes in rates of obesity over the last decade. Rates of obesity in 1998 are presented in Tables 3 and 4 for women and men respectively. In the last decade obesity rates among females rose from 30% to 33% and among men rose from 9% to 11%. Rates of obesity have increased most markedly amongst coloured and white men and women, although one is cautious to infer too much from the small white samples. For both men and women rates of obesity increased in every age group but the largest increase was among those aged 15 to 24. Figure 3 shows the BMIs of South African women by age in 2008 and in 1998. The upward shift of the BMI-age profile is clear.

Figure 3. Women's BMI by age in 1998 and 2008



2.3. Correlates of obesity

We examine the association between socio-economic status and body mass index and obesity in Table 5. The first two columns present regressions in which body mass index is regressed on the individual's years of completed education, the number of assets owned by the household, an indicator that the household is located in an urban area and an indicator that adults in the household often or always went to bed hungry, with controls for age, sex and population group. The third and fourth columns report changes in the probability of being obese, given a change in the right hand side variables, estimated using probit regressions. Regressions are run separately for men and women. The relationship between BMI and obesity and the demographic and socio-economic variables differs in interesting ways between men and women. As evident in Figure 1, the prevalence of obesity increases with age but more steeply for women than men. Amongst women, Africans are significantly more likely to be obese than whites while there are no significant differences between population groups in the probability of being obese amongst men.

In general there is a positive association between the socio-economic variables and obesity for both men and women although each additional asset has a larger effect on the probability of women being obese and the effect of education is only significant for men. The indicator that an adult went hungry has no significant association with obesity for women but is significant and negatively associated with obesity for men.

2.4. Prevalence of hypertension

Respondents were classified as hypertensive if their blood pressure was equal to or above 140/90mmHg or if they were taking hypertensive medication. Respondents were classified as moderate and severe hypertensive if their blood pressure was equal to or above 160/95mmHg or if they were taking hypertensive medication. Following the Department of Health (2001), blood pressure measures were retained if the second systolic or diastolic blood pressure differed by 5mmHg or less and if the systolic blood pressure was 80mmHg or larger and if the systolic blood pressure was at least 15mmHg larger than the diastolic blood pressure. Mean systolic and diastolic blood pressures were calculated from the remaining blood pressures.

Rates of hypertension are shown in Tables 6 and 7 separately for men and women. Rates of hypertension are fairly similar for men and women with 31% of men and 36% of women classified as hypertensive. Moderate to severe hypertension is however much more prevalent among women with 27% of women as opposed to 19% of men falling into this category. Women are more than twice as likely to report taking hypertensive medication as men (14% of women and 6% of men) and sex differences in the prevalence of hypertension are consequently reduced if those on medication are excluded or if the classification is based on the measurement alone. The risk of hypertension clearly increases with age for both men and women and the correlates of hypertension are better assessed in a multivariate context where we can control for the effect of age.

2.5. Changes in hypertension over the last decade

Estimates of the prevalence of hypertension in 1998 from the DHS are presented in Tables 8 and 9 for women and men respectively. The prevalence of any hypertension has risen from 26% to 36% for women and from 24% to 31% for men. Rates of moderate to severe hypertension have also risen considerably with the prevalence among women rising from 18% to 27% and among men from 13% to 19%.

2.6. Correlates of hypertension

We investigate the correlates of hypertension in Table 10. The first two columns present probit regressions of an indicator for having any hypertension on the individual's years of completed education, the number of assets owned by the household and an indicator that the household is located in an urban area, with controls for age and population group. The coefficients are interpreted as a change in the probability of being hypertensive given a change in any of the

right hand side variables. Regressions are run separately for men and women. The third and fourth columns report changes in the probability of having moderate to severe hypertension for women and men respectively. For both men and women the risk of hypertension increases with age. There are no significant racial differences in the risk of any hypertension but coloured women and men are at significantly higher risk of suffering from moderate to severe hypertension than white women and men. They also have a higher risk of moderate to severe hypertension than Africans although the differences in risks are only significant at the 10% level. Education appears to have a protective effect for women only and the number of household assets is not significantly associated with the risk of hypertension for either men or women. Amongst women, those residing in urban areas are at significantly higher risk of being hypertensive.

The fifth and sixth columns show results when we include BMI in our regressions for the probability of suffering from any hypertension. Adding BMI to the regressions has no significant effect on the coefficients of any of the other variables. For each one unit increase in BMI the risk of suffering from any hypertension rises by a percentage point. Results are very similar if we model the probability of moderate to severe hypertension rather than any hypertension.

2.7. Knowledge of condition and treatment status of hypertensive participants

Overall, more than twice as many women (19%) as men (9%) report having been told by a healthcare professional that they are hypertensive. Within the group of respondents classified as having any hypertension, 49% of women and 26% of men have been informed of their condition. The percentage of those with knowledge about their condition increases to 62% for women and 39% for men when looking only at those classified as having moderate to severe hypertension. The percentages of hypertensive men and women who know that they suffer from the condition are very similar to those found in the 1998 DHS (Department of Health 2001). Unlike the self-reports, the measured hypertension rates of men and women are fairly similar illustrating the inaccuracy of estimates of chronic disease prevalence from self-reports.

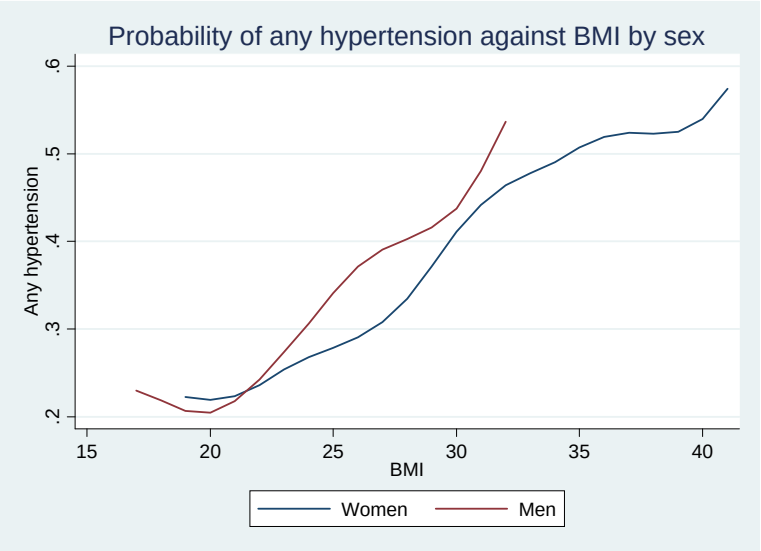
The seventh column of Table 10 investigates the determinants of knowing one has high blood pressure for those whose measurements indicate that they are hypertensive. Women, older people, those residing in urban areas and those living in households with more assets are significantly more likely to know that they suffer from hypertension. Interestingly education is

not significantly associated with knowing one's condition and the point estimate is in fact negative.

2.8. Hypertension, chronic illness and obesity

Figure 4 clearly shows the association between increasing BMI and the higher risk of hypertension, particularly for men. Table 11 presents the prevalence of any hypertension, moderate to severe hypertension and self-reports about three chronic illnesses related to obesity (stroke, heart disease, diabetes) by obesity status for women and men. The top panel reports results for 2008 from the NIDS and the bottom panel reports results for 1998 from DHS. The prevalence of hypertension amongst those who are obese is significantly higher than that of the general population for both men and women in both periods. In 2008 slightly more than half of the obese women and men are hypertensive compared to 27% of those who are not obese. Although the accuracy of self-reports is dubious given the differences reported above in measured and self-reported hypertension, self-reports of heart disease and diabetes are significantly higher among those classified as obese.

Figure 4. Probability of any hypertension against BMI by sex



3. Malnutrition in children

3.1. Prevalence of malnutrition

For children up to the age of 5 years z-scores for height for age, weight for age, weight for height and BMI for age were calculated using the WHO international child growth standards as the reference (WHO 2006). For children older than 5 years the WHO growth standards for school-aged children and adolescents (de Onis et al. 2007) were used as a reference in the calculation of z-scores for height for age, BMI for age and weight for age. Weight for age is only calculated for children up to the age of 10 years.

Based on these z-scores we calculated the following three measures of malnutrition :

Stunting: children aged six months to 14 years with a z-score of two or more standard deviations below the median for height for their age.

Underweight: children aged six months to 10 years with a z-score of two or more standard deviations below the median weight for their age.

Wasting: children aged six months to five years with a z-score of two or more standard deviations below the median weight for their height.

Stunting is often regarded as an indicator of "chronic" malnutrition in the sense that it represents the "accumulated consequences of retarded growth" (WHO Working Group 1986:931) and while catch up in height is possible it takes a relatively long time. Similarly wasting is regarded as an indicator of "acute" malnutrition in the sense that it can develop rapidly and be restored rapidly (WHO Working Group 1986, de Onis and Blössner 2003, Zere and McIntyre 2003).

In addition we used the z-scores for BMI for age to classify children as underweight (z-score of two or more standard deviations below the median BMI for their age), overweight (z-score between one and two standard deviations above the median) and obese (z-score of more than two standard deviations above the median).

Using the WHO guidelines we considered absolute z-scores for weight for age and height for age of greater than six biologically implausible and measurements for these children are excluded in the analyses that follow. Similarly absolute z-scores greater than five for BMI for age and weight for height were excluded.

Table 12 presents estimates of malnutrition and obesity for South African children aged six months to 14 years by population group, sex, age, rural or urban location and per capita

household income quintile. Overall, 17% of children are considered stunted. African and coloured children are more than twice as likely to have stunted growth as Indian and white children. Rates of stunting are higher amongst rural children and decrease across increasing income quintiles. The rates of stunting are similar for male and female children. Stunting is most prevalent amongst the youngest children with almost a quarter (24%) of children under the age of five considered stunted.

Turning to the second measure of malnutrition we see that 10% of children under the age of 10 are considered underweight for their age. Similar to the results for stunting, white children and those in the highest income quintile appear to be at lowest risk of being underweight for their age. Unlike stunting, the risk of being underweight appears to increase with age.

Overall 5% of children under the age of five are considered to be wasting. Unlike the other measures of malnutrition there does not appear to be a relationship with household income and the risk of wasting and white children appear to be at the greatest risk of wasting. This finding is similar to that of Zere and McIntyre (2003) who found that wasting was not related to socio-economic status.

At the other extreme, 10% of children under the age of 15 are considered obese and 12% are overweight. Children in households with higher per capita income are at greater risk of obesity. Children under the age of five are most likely to be obese with 16% of children in this age group in that category. Indian children are the least likely to be obese although the sample size is very small.

NIDS aimed to measure the height and weight of all children aged six months to 14 years. In the case of children under the age of six, the consent of the primary caregiver was required. Children aged six and older were themselves asked whether they agreed for their physical measurements to be taken. The percentage of children who are missing either height or weight measurements are shown in the eighth column of Table 12. Overall, 20% of children do not have valid measurements. In 44% of the cases without a valid height measurement the child themselves refused to be measured, in 19% of cases the obtained measure was biologically implausible and therefore set to missing, and in 36% of the cases the information is coded as missing. Anthropometric measurements are least likely to be missing for Africans, children living in rural areas and older children. Children in the richest income quintile are significantly less likely to have valid measurements than poorer children.

3.2. Changes in malnutrition over time

Table 13 presents a comparison of heights, weights and various measures of malnutrition among children aged six months to five years in 1993 and 2008 using the PSLSD and NIDS respectively. The average height of African children aged six months to five years old has increased by 1.4 cm between 1993 and 2008. Over this period the average weight of African children increased by 2.4kg. There are insufficient observations on white children in this age group in 2008 for us to know with any confidence whether the racial gaps in height and weight have narrowed.

According to all three measures, malnutrition has decreased between 1993 and 2008. The percentage of children under the age of five classified as stunted decreased from 30% to 24% over this fifteen year period. Similarly the percentage of children classified as underweight for age and wasting decreased from 15% to 9% and from 9% to 5% respectively. In both periods female children are slightly less likely to be classified as malnourished. There does not appear to be any change over time in the risk of being overweight and obese in this age group.

3.3. Dual burden of over- and under- nutrition

The dual burden of child malnutrition and adult obesity is evident not only in the overall statistics but also within the household. In 45% of households where there is a stunted child there is at least one obese adult and in 37% of households where there is a child who is underweight there is at least one obese adult. This climbs to 72% and 63% respectively when we consider obese or overweight adults. In more than one in eight South African households there is both an over-nourished adult and an under-nourished child.

4. Depression, ADLs and self-reported health status

4.1. Prevalence of depression

The NIDS Adult questionnaire included the ten questions that make up the Center for Epidemiologic Studies Short Depression Scale (CES-D 10). These questions ask whether certain feelings or behaviours occurred rarely or none of the time, some or a little of the time, occasionally or a moderate amount of the time or all the time. The responses are scored and the CES-D 10 scale is the sum of these scores. Scores of 10 or over indicate depression (Radloff 1997). The first column of Table 14 shows the prevalence of depression by population group, location, per capita household income quintile, education level, age and sex. On average, South African women report a greater number of symptoms of depression than do South African men. This finding mirrors that of Case and Deaton (2006) in two localised studies. Overall 36% of women and 27% are classified as depressed according to the CES-D 10 scale. The risk of depression increases with age. There appears to be a negative association with depression and socio-economic status with a lower prevalence of depression among those with more education and from households with higher per capita expenditure. The prevalence of depression is highest among Africans (35%) and lowest among whites (14%).

4.2. Limitations in activities of daily living

NIDS included questions about limitations in carrying out a range of 11 activities from dressing and bathing to carrying and lifting heavy objects. The second column of Table 14 reports the mean number of activities of daily living (ADL) for which the respondent reporting having any sort of difficulty (either can do, only with help or can't do). As expected, the number of limitations increases with age. On average, respondents aged 65 and older report difficulties with 1.3 activities of daily living.

4.3. Self-reported health status

Respondents were asked to describe their current health on a five point scale where one is excellent and five is poor. The third column shows the mean response on this question and the fourth column shows the percentage of respondents who classified themselves to be in fair or poor health. Overall, 18% of respondents describe their current health as fair or poor. Women and older people tend to report worse health, which follows a pattern observed in many countries (Case and Paxson 2005). African and coloured people also report worse health than

whites. Those respondents in the top income quintile are half as likely as other respondents to report fair or poor health.

4.4. Correlates of depression and self-reported health status

Following Case and Deaton (2006) we examine whether depression and self-reported health status have similar correlates in Table 15. This multivariate analysis also allows us to investigate racial and socio-economic differences controlling for the confounding effect of age. The first two columns examine the determinants of depression, modelled in the first column as the score on CES-D10 scale and in the second column as an indicator variable equal to one if the respondent is classified as depressed according to the CES-D10 scale. The last two columns examine self-reported health status on a five-point scale and an indicator that the respondent classified them self to be in fair or poor health. For each outcome, in addition to a range of demographic (population group, sex, age) and socio-economic (assets, education, location) factors we examine the impact of variables that we believe could affect depression and health status. These include the number of reported limitations in activities of daily living, whether adults in the household often or always go to bed hungry and whether children in the household often or always go to be hungry.

Holding constant age, population group, education, location, asset ownership, the number of limitations in activities of daily living and indicators of hunger in the household, women report more symptoms of depression and are seven percentage points more likely than men to be classified as depressed. Africans and coloureds are 15 and 10 percentage points respectively more likely to be depressed than whites. The risk of depression increases with age. There is a negative association between depression and the socio-economic variables. For every additional limitation in activities of daily living the probability of being classified as depressed increases by five percentage points. Neither adults nor children going to bed hungry are significantly associated with depression.

The correlates of reporting fair or poor health are very similar to those for depression. On average, women, Africans, coloureds, those with greater limitations in activities of daily living and those with less household assets and poorer education report worse health. Unlike depression, adults often or always going to bed hungry is associated with an 11 percentage point increase in the probability of reporting fair or poor health. Those in urban areas are also significantly more likely to report poorer health.

5. Conclusion

This short input introduces the health data collected in the first wave of NIDS by highlighting three key areas for research. NIDS health data provides useful information for updating national estimates of the prevalence of a range of health conditions and behaviours, many of which are more than a decade out of date. More importantly, these health data together with the rich socio-economic data offer a unique opportunity to advance our understanding of the links between health status and socio-economic status.

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Appendix

Table 1. Body mass index of women aged 15 and older - South Africa 2008

	BMI categories					Body mass index		
	Underweight	Normal	Overweight	Obese	40+	Mean	Missing	Number valid
Population group								
African	0.046	0.367	0.260	0.327	0.067	28.0	0.086	6468
Coloured	0.065	0.309	0.270	0.357	0.073	28.3	0.129	1094
Indian	0.049	0.385	0.322	0.244	0.028	26.7	0.158	109
White	0.020	0.323	0.271	0.387	0.041	28.1	0.263	344
Location								
Rural	0.053	0.384	0.269	0.294	0.057	27.4	0.058	4459
Urban	0.040	0.341	0.259	0.360	0.069	28.4	0.145	3630
Per capita income								
Quintile 1	0.058	0.404	0.263	0.275	0.064	27.2	0.061	1738
Quintile 2	0.055	0.391	0.249	0.305	0.057	27.3	0.092	1913
Quintile 3	0.043	0.360	0.240	0.356	0.075	28.4	0.094	1831
Quintile 4	0.049	0.314	0.264	0.373	0.074	28.7	0.119	1612
Quintile 5	0.021	0.327	0.300	0.352	0.052	28.2	0.179	995
Education								
None	0.058	0.292	0.255	0.395	0.103	29.2	0.095	1296
Grade 1-6	0.042	0.315	0.219	0.424	0.096	29.2	0.085	1388
Grade 7-9	0.064	0.365	0.248	0.323	0.062	27.5	0.087	1976
Grade 10-11	0.038	0.394	0.274	0.294	0.049	27.5	0.100	1820
Grade 12	0.041	0.403	0.269	0.287	0.049	27.2	0.138	1066
Tertiary	0.023	0.310	0.330	0.336	0.044	28.3	0.174	523
Age								
15-24	0.075	0.543	0.249	0.133	0.019	24.4	0.086	2289
25-34	0.040	0.381	0.292	0.287	0.050	27.5	0.102	1468
35-44	0.028	0.250	0.271	0.450	0.090	29.9	0.104	1399
45-54	0.028	0.222	0.241	0.509	0.101	30.7	0.100	1217
55-64	0.031	0.247	0.260	0.462	0.088	30.2	0.144	835
65+	0.038	0.245	0.259	0.458	0.119	30.1	0.214	832
Total	0.046	0.359	0.263	0.332	0.064	28.0	0.110	8089

Table 2. Body mass index of men aged 15 and older - South Africa 2008

	BMI categories					Body mass index		
	Underweight	Normal	Overweight	Obese	40+	Mean	Missing	Number valid
Population group								
African	0.126	0.611	0.172	0.090	0.015	23.1	0.099	4355
Coloured	0.175	0.406	0.286	0.133	0.033	24.3	0.144	721
Indian	0.165	0.328	0.326	0.181	0.001	24.8	0.159	73
White	0.018	0.394	0.359	0.229	0.026	26.9	0.220	291
Location								
Rural	0.156	0.615	0.157	0.072	0.019	22.7	0.073	2876
Urban	0.098	0.537	0.232	0.133	0.016	24.2	0.145	2622
Per capita income								
Quintile 1	0.178	0.663	0.100	0.059	0.026	22.2	0.084	947
Quintile 2	0.173	0.634	0.140	0.053	0.014	22.3	0.109	1027
Quintile 3	0.168	0.619	0.140	0.073	0.014	22.6	0.113	1060
Quintile 4	0.112	0.601	0.192	0.095	0.015	23.4	0.116	1382
Quintile 5	0.049	0.435	0.325	0.191	0.019	25.8	0.143	1082
Education								
None	0.154	0.608	0.162	0.076	0.022	22.9	0.170	624
Grade 1-6	0.131	0.572	0.186	0.111	0.021	23.6	0.131	941
Grade 7-9	0.167	0.596	0.146	0.091	0.022	22.8	0.079	1533
Grade 10-11	0.138	0.597	0.185	0.080	0.010	22.9	0.081	1230
Grade 12	0.069	0.581	0.228	0.122	0.015	24.5	0.149	770
Tertiary	0.022	0.375	0.388	0.215	0.022	26.7	0.157	376
Age								
15-24	0.195	0.677	0.089	0.039	0.011	21.6	0.082	1947
25-34	0.066	0.622	0.222	0.090	0.015	23.6	0.110	1083
35-44	0.087	0.499	0.280	0.133	0.010	24.5	0.143	863
45-54	0.112	0.384	0.296	0.208	0.024	25.6	0.151	668
55-64	0.072	0.422	0.288	0.218	0.055	26.6	0.176	486
65+	0.103	0.458	0.250	0.189	0.022	25.2	0.133	430
Total	0.121	0.568	0.202	0.109	0.017	23.6	0.118	5498

Table 3. Body mass index of women aged 15 and older - South Africa 1998

	BMI categories					Body mass index		
	Underweight	Normal	Overweight	Obese	40+	Mean	Missing	Number valid
Population group								
African	0.051	0.378	0.264	0.307	0.053	27.4	0.042	5906
Coloured	0.103	0.357	0.261	0.280	0.054	26.9	0.040	968
Indian	0.030	0.442	0.276	0.253	0.027	26.6	0.061	571
White	0.153	0.360	0.274	0.214	0.017	25.2	0.056	262
Location								
Rural	0.067	0.419	0.269	0.246	0.036	26.4	0.048	3485
Urban	0.051	0.358	0.264	0.327	0.058	27.7	0.042	4231
Education								
None	0.059	0.345	0.285	0.312	0.060	27.6	0.026	1245
Grade 1-6	0.063	0.320	0.259	0.358	0.064	28.0	0.059	1588
Grade 7-9	0.053	0.376	0.249	0.322	0.056	27.5	0.044	2135
Grade 10-11	0.058	0.434	0.260	0.247	0.041	26.6	0.031	1383
Grade 12	0.064	0.415	0.300	0.220	0.022	26.2	0.053	1017
Tertiary	0.032	0.450	0.240	0.278	0.049	27.0	0.069	316
Age								
15-24	0.097	0.611	0.202	0.089	0.007	23.5	0.052	1987
25-34	0.054	0.389	0.294	0.263	0.034	27.0	0.067	1522
35-44	0.027	0.270	0.314	0.389	0.065	29.1	0.037	1342
45-54	0.040	0.240	0.270	0.449	0.083	29.6	0.027	1066
55-64	0.027	0.256	0.264	0.452	0.095	29.8	0.021	921
65+	0.077	0.326	0.274	0.323	0.065	27.5	0.040	878
Total	0.057	0.381	0.266	0.296	0.050	27.2	0.044	7716

Table 4. Body mass index of men aged 15 and older - South Africa 1998

	BMI categories					Body mass index		
	Underweight	Normal	Overweight	Obese	40+	Mean	Missing	Number valid
Population group								
African	0.141	0.610	0.173	0.076	0.008	22.8	0.016	4220
Coloured	0.117	0.567	0.221	0.094	0.018	23.7	0.017	761
Indian	0.049	0.384	0.365	0.202	0.012	26.2	0.050	479
White	0.166	0.507	0.237	0.090	0.005	23.1	0.033	176
Location								
Rural	0.165	0.616	0.158	0.060	0.005	22.4	0.015	2380
Urban	0.110	0.556	0.224	0.110	0.012	23.8	0.025	3269
Education								
None	0.124	0.582	0.213	0.081	0.003	23.1	0.024	643
Grade 1-6	0.152	0.584	0.184	0.081	0.018	23.1	0.022	1120
Grade 7-9	0.150	0.614	0.169	0.068	0.007	22.6	0.015	1678
Grade 10-11	0.157	0.577	0.183	0.084	0.007	22.9	0.023	1053
Grade 12	0.076	0.571	0.228	0.126	0.010	24.2	0.019	821
Tertiary	0.035	0.410	0.360	0.194	0.010	26.0	0.027	303
Age								
15-24	0.216	0.675	0.084	0.024	0.004	21.0	0.011	1828
25-34	0.086	0.630	0.209	0.075	0.007	23.4	0.018	1076
35-44	0.086	0.533	0.252	0.129	0.011	24.4	0.019	1001
45-54	0.093	0.453	0.283	0.171	0.022	25.2	0.035	690
55-64	0.091	0.474	0.288	0.147	0.013	24.9	0.018	519
65+	0.100	0.479	0.286	0.135	0.011	24.4	0.049	535
Total	0.131	0.579	0.199	0.092	0.009	23.3	0.021	5649

Table 5. Body Mass Index, Obesity and Socio-Economic Status - respondents aged 15 and older - South Africa 2008

	Dependent variable:			
	Body Mass Index		Obese	
	Women	Men	Women	Men
African	3.08	-0.608	0.113	0.008
	[0.694]**	[0.559]	[0.044]*	[0.025]
Coloured	2.129	-0.593	0.074	0.001
	[0.772]**	[0.740]	[0.059]	[0.031]
Indian	0.095	-0.872	-0.081	0.024
	[1.069]	[0.980]	[0.078]	[0.062]
Urban	0.928	0.277	0.063	0.025
	[0.287]**	[0.215]	[0.019]**	[0.012]*
Years of completed education	0.055	0.166	0	0.003
	[0.041]	[0.034]**	[0.003]	[0.002]
Count of assets	0.13	0.168	0.009	0.006
	[0.037]**	[0.032]**	[0.003]**	[0.002]**
Adults often or always hungry	-0.652	-1.294	0.002	-0.061
	[0.596]	[0.324]**	[0.046]	[0.013]**
Age	0.547	0.277	0.035	0.009
	[0.029]**	[0.032]**	[0.002]**	[0.002]**
Age squared	-0.005	-0.002	0	0
	[0.000]**	[0.000]**	[0.000]**	[0.000]**
Observations	7934	5388	8138	5379

Robust standard errors in brackets

** significant at 5%; ** significant at 1%*

Table 6. Hypertension of women aged 15 and older - South Africa 2008

	Any hypertension	Moderate to severe hypertension	Diagnosed with high blood pressure	Taking blood pressure medication	Systolic blood pressure	Diastolic blood pressure	Missing	Number valid
Population group								
African	0.337	0.252	0.165	0.123	121.4	80.7	0.093	6651
Coloured	0.455	0.359	0.243	0.182	126.0	84.5	0.118	1166
Indian	0.374	0.262	0.165	0.144	121.6	81.5	0.154	110
White	0.463	0.326	0.231	0.191	124.7	83.1	0.293	339
Location								
Rural	0.332	0.248	0.154	0.118	122.4	80.9	0.054	4576
Urban	0.381	0.285	0.193	0.146	121.9	81.6	0.161	3765
Per capita income								
Quintile 1	0.306	0.224	0.123	0.087	120.0	79.9	0.074	1790
Quintile 2	0.355	0.276	0.183	0.143	122.5	80.9	0.098	1959
Quintile 3	0.380	0.291	0.204	0.151	123.2	81.4	0.096	1897
Quintile 4	0.423	0.317	0.224	0.170	124.1	82.9	0.111	1688
Quintile 5	0.338	0.240	0.155	0.124	120.8	81.1	0.203	1007
Education								
None	0.632	0.528	0.354	0.290	139.0	88.7	0.071	1333
Grade 1-6	0.537	0.429	0.313	0.256	130.3	86.1	0.092	1411
Grade 7-9	0.341	0.264	0.186	0.137	121.0	80.2	0.094	2032
Grade 10-11	0.268	0.186	0.119	0.087	117.0	78.5	0.114	1882
Grade 12	0.264	0.153	0.086	0.058	116.5	78.8	0.149	1125
Tertiary	0.267	0.193	0.113	0.080	117.3	80.2	0.193	536
Age								
15-24	0.107	0.049	0.024	0.008	109.6	73.2	0.100	2408
25-34	0.195	0.117	0.058	0.030	115.4	78.7	0.113	1536
35-44	0.420	0.296	0.209	0.130	123.6	84.3	0.114	1424
45-54	0.601	0.486	0.319	0.267	131.6	87.7	0.117	1215
55-64	0.702	0.592	0.426	0.367	141.2	90.1	0.137	845
65+	0.784	0.665	0.453	0.402	147.1	90.3	0.182	865
Total	0.361	0.269	0.177	0.135	122.1	81.3	0.118	8341

Table 7. Hypertension of men aged 15 and older - South Africa 2008

	Any hypertension	Moderate to severe hypertension	Diagnosed with high blood pressure	Taking blood pressure medication	Systolic blood pressure	Diastolic blood pressure	Missing	Number valid
Population group								
African	0.277	0.166	0.064	0.043	123.8	78.8	0.101	4342
Coloured	0.402	0.266	0.114	0.088	131.2	82.0	0.161	728
Indian	0.397	0.316	0.189	0.155	128.6	80.8	0.230	69
White	0.431	0.245	0.179	0.124	129.7	82.0	0.215	294
Location								
Rural	0.277	0.168	0.066	0.048	123.7	78.4	0.076	2859
Urban	0.324	0.196	0.094	0.065	125.8	80.0	0.150	2633
Per capita income								
Quintile 1	0.244	0.148	0.054	0.034	122.1	76.9	0.089	940
Quintile 2	0.279	0.161	0.060	0.042	124.1	77.5	0.116	1027
Quintile 3	0.296	0.202	0.092	0.063	123.8	79.0	0.097	1076
Quintile 4	0.280	0.178	0.085	0.064	124.8	79.2	0.116	1376
Quintile 5	0.375	0.212	0.102	0.071	127.8	81.9	0.158	1073
Education								
None	0.473	0.346	0.144	0.116	133.9	84.2	0.147	647
Grade 1-6	0.411	0.283	0.143	0.103	129.5	82.0	0.121	957
Grade 7-9	0.259	0.161	0.068	0.049	121.9	77.3	0.084	1510
Grade 10-11	0.249	0.134	0.054	0.031	122.7	77.1	0.095	1215
Grade 12	0.287	0.156	0.051	0.038	123.8	79.4	0.160	767
Tertiary	0.313	0.167	0.117	0.074	127.1	82.3	0.158	373
Age								
15-24	0.115	0.049	0.006	0.002	116.9	73.2	0.089	1929
25-34	0.239	0.103	0.031	0.007	122.6	78.3	0.121	1071
35-44	0.341	0.184	0.060	0.042	125.5	81.9	0.148	862
45-54	0.496	0.298	0.172	0.119	133.4	86.2	0.157	676
55-64	0.629	0.538	0.285	0.231	140.4	88.2	0.152	492
65+	0.709	0.565	0.327	0.270	141.8	86.3	0.127	441
Total	0.305	0.185	0.083	0.058	125.0	79.3	0.122	5492

Table 8. Hypertension of women aged 15 and older - South Africa 1998

	Any hypertension	Moderate to severe hypertension	Diagnosed with high blood pressure	Taking blood pressure medication	Systolic blood pressure	Diastolic blood pressure	Missing	Number valid
Population group								
African	0.252	0.161	0.177	0.077	118.1	75.0	0.045	5913
Coloured	0.297	0.223	0.226	0.143	122.3	77.4	0.017	994
Indian	0.304	0.242	0.217	0.185	120.7	75.7	0.056	569
White	0.231	0.191	0.238	0.159	113.6	72.6	0.066	261
Location								
Rural	0.241	0.146	0.156	0.062	118.6	75.0	0.045	3501
Urban	0.273	0.195	0.209	0.119	118.6	75.4	0.043	4246
Education								
None	0.422	0.277	0.275	0.130	129.6	80.3	0.033	1232
Grade 1-6	0.347	0.230	0.256	0.119	123.0	77.9	0.056	1603
Grade 7-9	0.259	0.187	0.190	0.106	118.7	75.2	0.042	2147
Grade 10-11	0.171	0.110	0.135	0.075	112.8	71.9	0.040	1385
Grade 12	0.137	0.091	0.095	0.054	110.8	71.6	0.041	1030
Tertiary	0.164	0.122	0.148	0.093	114.9	73.9	0.052	320
Age								
15-24	0.042	0.017	0.038	0.000	106.3	67.2	0.035	2029
25-34	0.108	0.056	0.082	0.019	110.9	72.9	0.037	1580
35-44	0.230	0.141	0.154	0.069	118.0	77.4	0.036	1348
45-54	0.420	0.301	0.309	0.186	125.9	80.9	0.060	1030
55-64	0.542	0.413	0.415	0.257	133.5	81.8	0.049	897
65+	0.650	0.455	0.427	0.251	140.7	81.8	0.064	863
Total	0.261	0.176	0.188	0.097	118.6	75.2	0.044	7747

Table 9. Hypertension of men aged 15 and older - South Africa 1998

	Any hypertension	Moderate to severe hypertension	Diagnosed with high blood pressure	Taking blood pressure medication	Systolic blood pressure	Diastolic blood pressure	Missing	Number valid
Population group								
African	0.208	0.109	0.059	0.031	121.3	74.8	0.037	4125
Coloured	0.262	0.135	0.091	0.043	128.5	79.0	0.012	763
Indian	0.395	0.257	0.213	0.146	131.9	80.3	0.056	477
White	0.257	0.157	0.119	0.095	122.1	76.4	0.038	175
Location								
Rural	0.215	0.109	0.056	0.027	121.7	74.9	0.041	2318
Urban	0.246	0.141	0.095	0.058	124.1	76.5	0.034	3235
Education								
None	0.346	0.210	0.118	0.048	129.2	79.7	0.044	630
Grade 1-6	0.256	0.144	0.077	0.049	124.3	76.9	0.038	1098
Grade 7-9	0.215	0.094	0.061	0.026	121.5	74.6	0.033	1651
Grade 10-11	0.184	0.119	0.069	0.051	121.2	74.3	0.034	1038
Grade 12	0.219	0.120	0.082	0.057	122.7	75.5	0.032	809
Tertiary	0.259	0.153	0.133	0.081	125.1	78.5	0.053	296
Age								
15-24	0.077	0.018	0.002	0.000	115.4	68.8	0.033	1786
25-34	0.150	0.049	0.027	0.007	119.9	74.9	0.029	1067
35-44	0.250	0.133	0.076	0.037	123.0	78.9	0.040	979
45-54	0.390	0.261	0.183	0.103	129.6	82.7	0.052	678
55-64	0.446	0.276	0.171	0.127	133.6	82.3	0.024	515
65+	0.538	0.368	0.252	0.157	139.8	82.0	0.054	528
Total	0.235	0.129	0.081	0.046	123.2	75.9	0.037	5553

Table 10. Hypertension, Body Mass Index and Socio-Economic Status - respondents aged 15 and older - South Africa 2008

	Dependent variable:						
	Any hypertension		Moderate to severe hypertension		Any hypertension		Diagnosed with high blood pressure
	Women	Men	Women	Men	Women	Men	
African	0.03	-0.002	0.074	0.056	0.028	-0.002	-0.028
	[0.054]	[0.051]	[0.037]*	[0.029]	[0.058]	[0.052]	[0.034]
Coloured	0.095	0.07	0.141	0.124	0.096	0.073	0.014
	[0.062]	[0.063]	[0.056]*	[0.051]*	[0.066]	[0.064]	[0.036]
Indian	0.013	0.069	0.028	0.181	0.039	0.07	0.081
	[0.088]	[0.102]	[0.072]	[0.104]	[0.095]	[0.104]	[0.074]
Urban	0.086	0.029	0.07	0.025	0.078	0.024	0.088
	[0.019]**	[0.021]	[0.016]**	[0.016]	[0.020]**	[0.021]	[0.017]**
Years of completed education	-0.008	-0.001	-0.006	-0.002	-0.009	-0.002	-0.004
	[0.003]**	[0.003]	[0.002]**	[0.002]	[0.003]**	[0.003]	[0.002]
Count of assets	-0.001	-0.001	0.001	0.002	-0.003	-0.002	0.007
	[0.003]	[0.003]	[0.002]	[0.002]	[0.003]	[0.003]	[0.002]**
Age	0.029	0.02	0.026	0.011	0.025	0.017	0.035
	[0.003]**	[0.003]**	[0.002]**	[0.002]**	[0.003]**	[0.003]**	[0.003]**
Age squared	0	0	0	0	0	0	0
	[0.000]**	[0.000]*	[0.000]**	[0.000]	[0.000]**	[0.000]*	[0.000]**
BMI					0.008	0.008	
					[0.001]**	[0.002]**	
Female							0.207
							[0.014]**
Observations	8371	5472	8371	5472	7813	5284	5135

Robust standard errors in brackets
** significant at 5%; ** significant at 1%*

Table 11. Obesity and chronic illness

	All		Women		Men	
	BMI<30	BMI>=30	BMI<30	BMI>=30	BMI<30	BMI>=30
			South Africa 2008			
Hypertension						
Any hypertension	0.268	0.518	0.269	0.513	0.268	0.539
Moderate to severe hypertension	0.167	0.396	0.185	0.401	0.151	0.377
Self reported conditions						
Stroke	0.007	0.010	0.006	0.011	0.009	0.006
Heart disease	0.022	0.053	0.029	0.054	0.016	0.052
Diabetes	0.020	0.082	0.024	0.081	0.017	0.086
			South Africa 1998			
Hypertension						
Any hypertension	0.206	0.419	0.203	0.407	0.209	0.474
Moderate to severe hypertension	0.119	0.299	0.127	0.298	0.110	0.303
Self reported conditions						
Stroke	0.007	0.015	0.006	0.015	0.007	0.014
Heart disease	0.039	0.077	0.052	0.080	0.025	0.060
Diabetes	0.023	0.065	0.026	0.062	0.019	0.077

Table 12. Anthropometrics of children aged 6 months to 14 years - South Africa 2008

	BMI categories								
	Underweight	Normal	Overweight	Obese	Stunted	Underweight for age	Wasting	Missing height or weight	Number valid
Population group									
African	0.133	0.475	0.120	0.098	0.176	0.096	0.048	0.181	5982
Coloured	0.128	0.362	0.082	0.146	0.195	0.129	0.038	0.320	816
Indian	0.224	0.311	0.120	0.024	0.084	0.125	0.000	0.327	65
White	0.149	0.356	0.131	0.099	0.076	0.020	0.070	0.285	143
Location									
Rural	0.149	0.507	0.118	0.088	0.193	0.101	0.042	0.143	4370
Urban	0.123	0.409	0.117	0.113	0.149	0.090	0.052	0.253	2636
Per capita income									
Quintile 1	0.142	0.473	0.110	0.083	0.196	0.102	0.064	0.196	1951
Quintile 2	0.149	0.468	0.121	0.090	0.184	0.104	0.054	0.178	2142
Quintile 3	0.128	0.480	0.112	0.109	0.174	0.114	0.036	0.183	1570
Quintile 4	0.135	0.470	0.111	0.112	0.131	0.078	0.019	0.182	889
Quintile 5	0.110	0.337	0.141	0.134	0.130	0.050	0.041	0.307	454
Age									
0-4	0.083	0.346	0.169	0.156	0.239	0.087	0.047	0.264	2079
5-9	0.141	0.517	0.091	0.070	0.120	0.102		0.185	2374
10-14	0.174	0.485	0.100	0.090	0.172			0.160	2553
Sex									
Female	0.128	0.455	0.123	0.105	0.158	0.099	0.048	0.199	3473
Male	0.143	0.456	0.112	0.095	0.184	0.092	0.046	0.201	3533
Total	0.136	0.456	0.117	0.100	0.171	0.096	0.047	0.200	7006

Table 13. Comparison of malnutrition among children aged 6 months to 5 years in 1993 and 2008

		BMI categories									
		Height	Weight	Underweight	Normal	Overweight	Obese	Stunted	Underweight for age	Wasting	Number valid cases
South Africa 1993											
Population group											
	African	86.6	12.5	0.166	0.374	0.169	0.163	0.335	0.169	0.096	3201
	Coloured	87.5	12.7	0.119	0.514	0.173	0.088	0.225	0.112	0.057	284
	Indian	91.2	13.0	0.251	0.535	0.067	0.083	0.062	0.056	0.117	87
	White	93.7	14.4	0.109	0.555	0.137	0.115	0.069	0.020	0.049	226
Sex											
	Female	86.9	12.5	0.153	0.423	0.158	0.143	0.267	0.141	0.072	1859
	Male	87.7	12.9	0.167	0.385	0.175	0.158	0.333	0.161	0.107	1916
All		87.2	12.7	0.159	0.401	0.165	0.151	0.300	0.151	0.090	3798
South Africa 2008											
Population group											
	African	88.0	14.9	0.085	0.352	0.169	0.161	0.247	0.092	0.048	1815
	Coloured	88.3	14.2	0.081	0.331	0.149	0.087	0.263	0.098	0.038	239
	Indian	90.0	13.4	0.066	0.471	0.161	0.033	0.014	0.006	0.000	20
	White	78.8	12.6	0.077	0.216	0.188	0.198	0.114	0.025	0.070	38
Sex											
	Female	87.9	14.6	0.090	0.351	0.163	0.126	0.214	0.082	0.048	1040
	Male	87.4	14.8	0.077	0.340	0.172	0.185	0.258	0.092	0.046	1074
All		87.6	14.7	0.084	0.345	0.168	0.156	0.237	0.087	0.047	2114

Table 14. Depression, Limitations with Activities of Daily Living and Self-Reported Health Status - respondents aged 15 and older - South Africa 2008

			Self-Reported Health Status		
	Depressed	Number of limitations in ADLS	Mean	Fair or Poor	Number
Population group					
African	0.349	0.320	2.34	0.183	12106
Coloured	0.290	0.352	2.31	0.189	2211
Indian	0.236	0.342	2.43	0.212	230
White	0.138	0.239	2.22	0.122	900
Location					
Rural	0.359	0.388	2.40	0.195	8003
Urban	0.295	0.268	2.28	0.166	7602
Per capita income					
Quintile 1	0.420	0.304	2.31	0.168	2927
Quintile 2	0.364	0.424	2.47	0.211	3313
Quintile 3	0.345	0.420	2.50	0.236	3276
Quintile 4	0.318	0.318	2.38	0.203	3515
Quintile 5	0.206	0.175	2.07	0.100	2574
Education					
None	0.446	1.056	3.28	0.464	2206
Grade 1-6	0.414	0.510	2.81	0.333	2611
Grade 7-9	0.352	0.257	2.32	0.176	3926
Grade 10-11	0.300	0.192	2.18	0.118	3422
Grade 12	0.250	0.119	1.94	0.073	2241
Tertiary	0.190	0.169	1.93	0.063	1124
Age					
15-24	0.263	0.132	1.85	0.050	4756
25-34	0.317	0.128	2.09	0.099	2943
35-44	0.343	0.239	2.35	0.181	2604
45-54	0.377	0.347	2.74	0.293	2169
55-64	0.369	0.670	3.08	0.393	1532
65+	0.341	1.334	3.34	0.473	1516
Sex					
Female	0.357	0.379	2.46	0.209	9331
Male	0.272	0.232	2.16	0.137	6274
Total	0.320	0.315	2.33	0.178	15605

Table 15. Depression, Self-Reported Health and Socio-Economic Status - respondents aged 15 and older - South Africa 2008

	Score on CES-D 10 Depression scale	Score of 10 or greater on CES-D 10	Self-reported health	Self reports poor or fair health
African	1.891	0.147	0.178	0.093
	[0.363]**	[0.036]**	[0.079]*	[0.023]**
Coloured	0.726	0.099	0.03	0.105
	[0.386]	[0.050]*	[0.090]	[0.053]*
Indian	1.388	0.109	0.339	0.202
	[0.875]	[0.094]	[0.156]*	[0.090]*
ADL	0.611	0.047	0.196	0.05
	[0.064]**	[0.007]**	[0.014]**	[0.004]**
Adults often or always hungry	0.175	-0.014	0.211	0.106
	[0.909]	[0.072]	[0.142]	[0.049]*
Children often or always hungry	1.455	0.107	0.002	-0.013
	[0.997]	[0.086]	[0.163]	[0.037]
Count of assets	-0.186	-0.015	-0.007	0
	[0.023]**	[0.002]**	[0.006]	[0.002]
Age	0.028	0.002	0.022	0.005
	[0.004]**	[0.000]**	[0.001]**	[0.000]**
Female	0.687	0.071	0.196	0.04
	[0.114]**	[0.012]**	[0.028]**	[0.009]**
Years of completed education	-0.042	-0.004	-0.048	-0.012
	[0.019]*	[0.002]*	[0.005]**	[0.002]**
Urban	0.321	0.02	0.109	0.047
	[0.165]	[0.016]	[0.038]**	[0.011]**
Observations	12501	12501	12466	12466

Robust standard errors in brackets
** significant at 5%; ** significant at 1%*