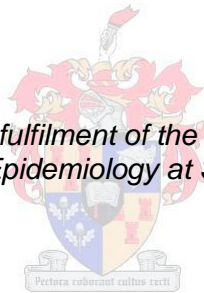


**The health status of the elderly receiving an
old age pension in urban communities in the
City of Cape Town**

by

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*Thesis presented in partial fulfilment of the requirements for the degree
Master of Science in Epidemiology at Stellenbosch University*



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Faculty of Medicine & Health Sciences

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Declaration

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

T. Govender

Signature

30 August 2012

Date:

Abstract

In developing countries the increasing number of the aged are often viewed as a problem. In particular, the indigent elderly residing in poor urban areas are at risk of becoming marginalised and underserved. The Western Cape has the third largest elderly population in proportion to the total population in the country. Social assistance in the form of a monthly pension is paid out to all elderly who pass a national means test carried out by South African Social Security Agency (SASSA).

An assessment of the characteristics and health status of the elderly collecting old age pensions living in low-income urban poor communities in the City of Cape Town was carried out at pension pay points across four communities, i.e. Gugulethu, Khayelitsha, Mitchells Plain and Bonteheuwel.

In community health surveys, choices regarding the methodology have to be made that can have profound effects on the study design and study outcomes. The milieu of the present study is one of urban poverty and specifically those urban elderly who qualify for non-contributory pensions (also called social cash transfers or government grants). The paucity of existing community-based studies on old-age pensioners in the City of Cape Town meant that a cross-sectional survey with wide-ranging coverage of demographic, social and health factors was the most logical design to employ in order to determine the extent of present needs and generate hypotheses for further controlled studies.

A systematic random sample of 703 elderly was drawn at nine pension pay-out points in Cape Town Metropole. No pensioners refused to participate in the study. Structured interviews were carried out covering demographics, number of dependents, living conditions, socioeconomic circumstances, health status and needs and utilisation of health services.

A reported 43% of participants lived in shacks and 88% reported regularly eating less than 3 meals a day. Eighty-seven percent of respondents reported waiting 3 hours or longer for medication at a clinic while 90% reported being dissatisfied with the service at their clinic. Fifty-eight percent of pensioners reported not being able to see well while 83% did not know where to get their eyes tested. Almost 70% of pensioners said that they have been ill-treated by a family member and 64% scored as severely depressed on the geriatric depression scale. In this study, 266 pensioners solely supported 471 children of which 65 (14%) were disabled children. In 95% of cases the pensioner does not receive any support from the child's parents.

The study found that the elderly on a state grant had considerable unmet health needs and required assistance with activities of daily living. The indigent pensioners in this study bore a huge

duty of care for minor children as custodial grandparents while not receiving a high level of health support themselves.

Opsomming

Die toenemende aantal bejaardes word dikwels in ontwikkelende lande as 'n probleem gesien. In die besonder loop die bejaardes wat in lae-inkomste stedelike gebiede woon die risiko om gemarginaliseer te word en swak dienslewering te ondervind. Die Wes-Kaap het die derde grootste populasie van bejaardes in verhouding tot die totale bevolking in die provinsie. Sosiale bystand in die vorm van 'n maandelikse pensioen word betaal aan alle bejaardes wat die inkomstetoets slaag wat deur die Suid-Afrikaanse Agentskap vir Maatskaplike Sekerheid (SAAMS) uitgevoer word.

'n Ondersoek na die eienskappe en gezondheidstatus van bejaardes wat hulle ouderdomspensioene in lae-inkomste stedelike gemeenskappe in die Stad Kaapstad kom afhaal is uitgevoer. Die studie is gedoen by pensioen-uitbetaalpunten in vier gemeenskappe, naamlik Gugulethu, Khayelitsha, Mitchells Plein and Bonteheuwel.

In gemeenskapsgesondheid-opnames moet keuses gemaak word ten opsigte van die metodologie wat diepgaande gevolge vir die studieontwerp en -uitkomst kan inhou. Die milieu van die huidige studie in dié van stedelike armoede en spesifiek die leefruimte van stedelike bejaardes wat kwalifiseer vir nie-bydraende pensioene (ook genoem sosiale kontantoordragte of staatstoelaes). Die gebrek aan bestaande studies van ouderdomspensioenarisse in Kaapstad het beteken dat 'n dwarsdeursnit-opname van die demografie, sosiale en gesondheidsfaktore die mees logiese ontwerp was om uit te voer. Dit is gedoen om die omvang van huidige behoeftes te bepaal en verdere hipoteses te genereer wat deur vergelykende studies ondersoek behoort te word.

'n Stelselmatige ewekansige steekproef van 703 bejaardes is getrek by nege betaalpunten in die Kaapse stadsgebied. Geen proefpersone het geweier om deel te neem nie. Gestruktureerde onderhoude is gevoer wat die volgende aspekte gedek het: demografiese eienskappe, aantal afhanklikes, gezondheidstatus en benutting van gesondheidsdienste.

Van die deelnemers het 43% in informele behuising ("shacks") gewoon en 88% het gerapporteer dat hulle gereeld minder as 3 daaglikse maaltye eet. Daar het 87% gerapporteer dat hulle 3 uur of langer gewag het om medikasie by hulle plaaslike kliniek te ontvang terwyl 90% ontevrede was met die diens wat hulle by die kliniek ontvang het. Daar het 58% van die bejaardes gerapporteer dat hulle nie goed kan sien nie terwyl 83% van hulle nie geweet het waar hulle hulle oë kan laat toets nie. Omtrent 70% van bejaardes het gesê dat hulle deur 'n familielid mishandel word en 64% kon as ernstig depressief geklassifiseer word op die geriatriese depressieskaal. In hierdie studie was 266 pensioenarisse die enigste sorg en voog van 471 kinders van wie 65 (14%) gestremd was. In 95% van gevalle het die pensionaris geen geldelike of ander bydraes van die kind(ers) se ouers ontvang nie.

Die studie het bevind dat bejaardes wat 'n staatstoelaag ontvang aansienlike onvervulde gesondheidsbehoefte het en hulp benodig met aktiwiteite van daaglikse bestaan. Die behoeftige pensioenarisse in hierdie studie het 'n groot las gedra aan die versorging van minderjarige kinders as toesighoudende grootouers ("custodial grandparents") terwyl hulleself nie 'n hoë vlak van ondersteuning geniet nie.

Dedication

To my grandparents, whose quiet support and sacrifices made it all worthwhile, and to my supervisor, Dr J.M. Barnes, who never doubted that I could do it, even when I doubted myself.

“There are only two lasting bequests we can give our children... one is roots, the other wings.”

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Heartfelt thanks to my family for all of the support, faith and generosity over the years.

Above all, salutations and prostrations to God for having blessed me with happy endings.

Jai Hind!

सरस्वति नमस्तुभ्यं वरदे कामरूपिणि ।
विद्यारम्भं करिष्यामि सिद्धिर्भवतु मे सदा ॥

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List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
CASRO	Council of American Survey Research Organization
CDL	Chronic Disease of Lifestyle
DSD	Department of Social Development
EU	European Union
GDS	Geriatric Depression Scale
HIV	Human Immunodeficiency Virus
ICF	International Classification of Functioning, Disability and Health
OECD	Organization for Economic Corporation and Development
SAAMS	Suid-Afrikaanse Agentskap vir Maatskaplike Sekerheid
SASSA	South African Social Security Agency
SAMHS	South African Migration and Health Survey
SRH	Self-rated Health
StatSA	Statistics South Africa
TB	Tuberculosis
UNICEF	United Nations Children Fund
UNPD	United Nations Population Division
WHO	World Health Organization

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CHAPTER 1

Literature review

1.1 Background

"In a world in which much change is unpredictable and immediate, global ageing - the unprecedented increase in global population over the age of 60 - is a highly foreseeable long-term trend. It is also, of all global issues, one of the most amenable to risk management in terms of identification, measurement and mitigation of possible consequences. Yet ageing is seen as one of the most significant risks to global prosperity in the decades ahead because of its potentially profound economic, social and political implications."

Klaus Schwab¹

The average age of the world population has been slowly increasing over the past century.² This growth in number of persons who reach the age of 60 years and over is regularly viewed as a global public health success, but has many concomitant challenges, particularly in lower- and middle-income countries.³ In lower and middle income countries the majority of the population did not collect enough assets before growing old as is the case in some higher-income countries.²

Population ageing can be seen as a direct consequence of socioeconomic development.¹ With improved living conditions, enhancements in access to health services and falling mortality rates, more and more of the world population reach the age of 60 years and over.¹

Elderly persons in almost all populations are becoming an important topic of discussion and occupy a special place in many planning strategies and policies for health and social services. International groups, such as the World Health Organization (WHO) dedicated its annual World Health Day in 2012 to ageing, and the European Union (EU) has designated 2012 as the Year of Active Ageing and Solidarity between Generations.¹ Why is the greying (ageing) of the population attracting so much attention now? One of the main reasons is that the impact of ageing on public health and national economies will be dramatic², and so awareness of ageing is paramount for all countries, including South Africa.

A substantial increase in persons getting over 60 years of age occurred in lower income groups, especially in the developing world.² According to the United Nations Population Division (UNPD), one fifth of the population in low income countries is 60 years or older. By 2050, that proportion is expected to increase to almost a third, resulting in two elderly persons for every child. The proportion of the older population is expected to rise from about 9% in 2005 to about 20% by 2050.³ This will place a severe economic burden on the already pressurized state fiscus, because the social grants needed to ensure a basic survival compatible with a decent existence are increasing to economically unsustainable levels in many countries.³

In Africa, a major proportion of the elderly who are underprivileged reside in urban low-income areas and find themselves in living conditions that contribute to their deteriorating health and increase their risk of dying.⁴ There are however a number of gaps in our knowledge on the health situation of the urban poor.⁵ There are opposing forces at work that affect the elderly in the urban setting - some of these are termed 'urban advantage' (e.g. better access to jobs, health services, etc.), while others are termed 'urban penalty' (e.g. living in crowded, contaminated settlements with failing sanitation services and located near polluting factories or waste dumps).⁵

"Environmental damage almost always hits those living in poverty the hardest".⁶ According to the United Nations Development Programme's Human Development Report⁶ there is an irony in these statements. Even though poor people 'bear the brunt' of environmental damage, they seldom are the principal creators of that damage. The affluent generate far more waste and consume far more resources.⁷ Yet, there are also environmental challenges that stem from growing poverty, not growing affluence. As a result of increasing impoverishment and the absence of alternatives, a swelling number of poor and landless people migrating to peri-urban areas are placing unprecedented pressure on the natural resource base as they struggle to survive.⁵

Urban poverty is a convoluted matter, intricately compounded with health issues, spatial heterogeneity (not all poor people live in uniformly poor neighbourhoods) and progressive complexities (the recently impoverished, the borderline poor and the chronic poor face different risks).⁵ Research on these issues only recently attracted some attention and many of the variables have not been investigated or quantified, especially with regard to various subgroups in the community such as the elderly.⁸ The prevalence of poverty (defined as having less than 60% of the national median income) among people older than 65 years varies widely across Europe.⁹ For EU countries, for example, the prevalence is 4% in

Hungary, 5% in Luxembourg and 7% in the Czech Republic, but 51% in Latvia, 49% in Cyprus and 39% in Estonia.⁹

Very little attention has been given to living conditions and health issues of elderly persons living in low-income urban areas. In the present study the situation regarding aged living in urban poverty in the City of Cape Town is investigated with a particular focus on individuals receiving a state pension.

1.2 Ageing as a global issue

1.2.1 'Greying' (Ageing) of the world

The WHO defines “the aged or elderly” as all persons over the age of 60.¹⁰ The world experienced a modest increase in the proportion of people aged 60 and older since the 1950's from 8% to 10% (800 million), but from 2010 to 2050 this group is expected to rise to 22% (2 billion) of the total population.¹ Should the increased pace of life expectancy in developed countries over the past two centuries continue through the 21st century, a large proportion of babies born since 2000 in high-income first world countries will celebrate their 100th birthday.¹¹

Although trends differ between countries, populations of nearly all such countries are gaining an increased number of elderly as a result of low fertility, low immigration, and longer survival.^{1,11} While this ageing trend started in the developed world, Table 1.1 illustrates that it is now a global phenomenon, that it is accelerating especially in the developing world.⁴

Table 1.1: Data on the global population of older people, 2012⁴

Region	Total Population (Millions)	%60+	%60-69	%70-79	%80+	60+ as % of 15-59	% female among 60+	% female among 80+
More developed regions	1244.6	22	11	7	4	37	57	66
Less developed regions	5807.6	9	5	3	1	15	53	59
Africa	1070.1	6	3	2	0	10	54	59
Asia	4250.4	11	6	3	1	16	53	59
Europe	740.2	22	10	8	4	36	58	67
Latin America & Caribbean	603.2	10	0	3	2	17	55	61
Northern America	350.6	19	10	5	4	32	55	64
Oceania	37.7	16	8	5	3	26	53	60
World	7052.1	11	6	4	2	18	54	62

While Europe and Japan were among the first in the world to experience significant population ageing, the most dramatic change is now occurring in countries such as Cuba, the Islamic Republic of Iran and Mongolia.¹⁰ In developing countries, the segment of those 60 and older has risen from 6% in 1950 to 9% in 2010 and is expected to reach 20% (1.6 billion) by 2050 (Table 1.2).¹ The pace of this change means that developing countries will have briefer periods to adjust and establish infrastructure and policies necessary to meet the needs of their rapidly shifting demographics. It also means that unlike high-income countries, they will need to cope with many more citizens who are getting old before they get affluent.³

Table 1.2: Percentage of population aged 60 and older⁴

Region	1950	1970	1990	2010	2030	2050
More developed regions	12	15	18	22	29	32
Less developed regions	6	6	7	9	14	20
Africa	5	5	5	5	7	10
Asia	7	6	8	10	17	24
Europe	12	15	18	22	29	34
Latin America & Caribbean	6	6	7	10	17	25
Northern America	12	14	17	19	26	27
Oceania	11	11	13	15	20	24
World	8	8	9	11	17	22

Population ageing can be seen as a major achievement for public health policies and for socioeconomic development, but it also challenges society to adapt in order to maximize the health and functional capacity of older people as well as their social participation and security.¹ While population ageing presents challenges for even the highest income countries, low and middle income countries face particular issues in constructing policies that address cumulative elderly populations.³

Particular issues that come with an ageing population have been highlighted by the Population Reference Bureau as follows:³

Strain on informal support systems. The elderly in developing countries previously relied heavily on their extended families for personal care and material support.³ Today, however, such support is under pressure from trends that include falling fertility rates (which translates to fewer children as caregivers); changing cultural norms; the changing labour market (decreasing job security), increased longevity of the elderly; and the migration of rural young people to cities and away from elderly relatives.^{2,3} The loosening of family ties, even in urban areas, often mean that the elderly living in urban areas are left without close ties to their few remaining relatives who could be called upon to care for them.^{2,3}

Imminent impact on formal support systems. The proportion of the elderly who are divorced or never married will likely increase, reflecting the marriage patterns of today's younger cohorts. In addition, the proportion of the elderly who live alone with only their spouse (without any adult children), or in institutional settings will most likely increase in

developing countries. Changing norms of familial support, improved joint survival of couples and a potentially growing acceptance and availability of institutional care for the elderly contribute to this change in community status of the elderly.³ Thirdly, rapid urbanization and growing out-migration of young adults to urban areas imply that their parents will age in rural areas, without the direct support of the children, and will face challenging living conditions without access to various essential services.¹²

Pressure on health care systems. The health care systems of many low to middle income countries are still focused on childhood and infectious diseases as well as reproductive-health services. But population ageing leads to growing demand for care that addresses chronic health conditions. Per capita health expenditures also tend to be considerably higher for elderly than they are for younger adults in Organization for Economic Cooperation and Development (OECD) countries (mainly high and middle income countries).¹³ This may not be true for low-income countries. The growing size of elderly populations - combined with the disproportionately large consumption of health care per capita of these populations - will place increasing pressure on health care systems, especially in low-income countries.³

Growing demand for pensions relying on diminishing productivity in the economy. Growth in elderly populations may pressurise developing economies by the growing demand for pension payments, while the global economy is facing a downturn and the productivity of the work force is diminishing due to uncertain employment.² The relatively high level of labour force participation among older adults in low income countries at present is partly due to the lack of comprehensive old-age pension systems in these countries.² Labour force participation rates for the elderly are projected to decline wherever economies expand and societies become wealthier.¹²

Increasing feminization of ageing populations. Women generally make up the majority of elderly populations around the world, and the number of women surviving to older ages will probably increase further in the developing world, especially as gender gaps in education and economic opportunities narrow in future.¹⁴ Still, elderly women are generally more likely to be disabled, widowed, living alone and to have fewer financial resources compared with elderly men at any given age.¹⁵ These factors should be taken into account when creating policies on the elderly. Women - the neediest of the poor segment of the population - will continue to increase in absolute numbers as well as proportionally in low-income countries, whose economies are least able to withstand the growing demand for social assistance.²

Situated on the least developed and poorest continent, most African economies are still profoundly dependent on raw materials and subsistence agriculture, and the average income per capita is now lower than it was at the end of the 1960s.¹⁶ Subsequently, the African region contains a growing share of the world's poor.¹⁷ A decrease in fertility and child mortality have further meant that, despite the massive impact of the HIV/AIDS epidemic across much of the region, both the size and proportion of the population aged 60 and older have grown and will continue to grow.¹⁷

1.2.2 Ageing in South Africa

South Africa has one of the most rapidly ageing populations in Africa and it is anticipated that, despite the demographic impact of the AIDS epidemic, the South African population will continue ageing over the next two decades.¹⁸ Over the past 20 years South Africa's population has grown rapidly: 1990 - 36.1 million, 2010 - 49.1 million (i.e. by 13 million) as a result of high fertility and in-migration rates (Figure 1.1).¹⁸

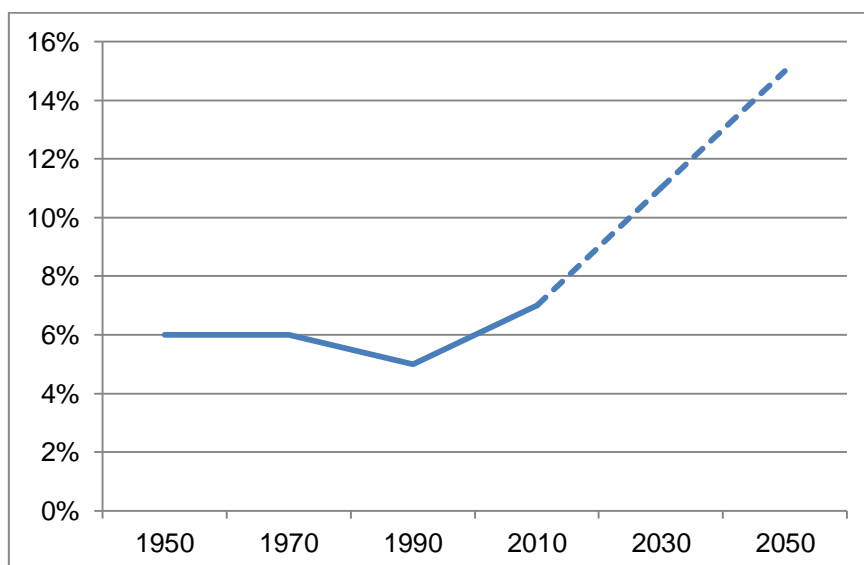


Figure 1.1: Percentage of population aged 60 and over in South Africa (dotted line = projection)⁴

Although the population is estimated to continue growing in absolute numbers over the next 18 years, reaching ± 53.8 million by 2030, the growth will be significantly slower than over the past two decades.¹⁸ Key demographic indicators for the South African population for the period 2010 - 2040 are summarised by the Futures Group¹⁹ in Table 1.3.

Table 1.3: Key demographic indicators for the South African population for the period 2010 - 2040¹⁹

Demographic indicator	2010	2015	2020	2025	2030	2035	2040
Population size (m)	50 725	52 015	52 971	53 565	53 809	53 741	53 288
<i>Racial composition:</i>							
% Asian/	2.4	2.4	2.4	2.4	2.4	2.3	2.3
% Black African	79.5	79.7	79.9	80.2	80.5	80.8	81.0
% Coloured	9.1	9.2	9.3	9.3	9.3	9.3	9.4
% White	9.0	8.7	8.4	8.1	7.8	7.6	7.3
Sex ratio (males/100 females)	98.0	99.4	100.6	101.6	102.4	103.3	104.0
Annual population growth rate (%)	0.60	0.39	0.29	0.17	0.07	-0.03	-0.15
Total fertility rate	2.38	2.31	2.23	2.15	2.15	2.07	1.98
Crude mortality rate	15.1	16.1	16.4	16.7	17.1	17.4	17.7
Life expectancy at birth (years): Total	50.8	50.4	50.8	51.4	51.8	52.4	52.8
Male	51.4	51.5	51.9	52.4	53.0	53.5	54.1
Female	50.2	49.2	49.7	50.2	50.7	51.1	51.6
Age composition: % <15	29.1	27.7	26.6	25.6	24.7	23.7	22.8
% 15-64	65.2	65.8	65.8	65.3	64.8	64.7	64.8
% 65+	5.7	6.5	7.6	9.1	10.5	11.6	12.4
Median age (years)	26.1	27.6	29.2	30.7	32.1	33.4	34.6
Age dependency ratio	53.3	51.9	52.1	53.2	54.3	54.5	54.3
Old-age dependency ratio	8.7	9.8	11.6	13.9	16.3	17.9	19.2

(Note: The projection model was based on the study period 1985 to 2040).

The distribution of poverty among the elderly in South Africa largely follows the national poverty profile with the Limpopo Province, Eastern Cape, Free State and North West Provinces identified as the poorest areas, while Gauteng and the Western Cape the least poor.²⁰ Table 1.4 illustrates ageing index across the nine provinces in South Africa.¹² As far as the geographic movements of the chronically poor elderly are concerned, studies have shown that older people continue to migrate, largely due to the availability and quality of health services; going to stay with children or relatives; physical infrastructure and/or pension systems.¹⁶

Table 1.4: The ageing index of the number of people 65+ to the number under 15 years¹²

Year	Eastern Cape	Free State	Gauteng	Kwazulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape
2001	13	12	12	10	10	9	13	12	14
2002	14	12	13	10	11	9	13	13	15
2003	14	13	13	11	11	9	14	13	15
2004	15	13	13	11	12	10	14	13	16
2005	16	14	14	11	12	10	15	13	16
2006	16	14	15	12	13	11	17	14	17
2007	17	15	15	12	13	11	18	14	17
2008	17	16	16	12	13	12	19	14	18
2009	18	17	17	13	14	12	20	15	19
2010	18	17	17	13	14	12	21	15	19
2011	18	17	17	13	15	13	20	16	21

(Note. a value of 16 means there are 16 people aged 65 and over for every 100 under 15 years of age)¹²

According to a 2007 report commissioned by the Western Cape Directorate of Research and Population Development, “the distribution of the elderly population within the country across the nine provinces showed that the Western Cape province has the third largest elderly population in proportion to the total population in the province (7.8%), following the Northern Cape (8.24%) and the Eastern Cape with the largest elderly population (9.2%). The age distribution of the Western Cape Province for the different population groups shows that the majority of individuals within all age groups up to 69 years fall into the Coloured population group. The majority of those individuals 70 years or older are classified as being part of the White population group. As is the case on a national level, the majority of the elderly group in the Western Cape are female.”²⁰

In the early 1990s, high income countries had about as many children under 15 years of age as people aged 55 and over (almost 22% of the total population in each category).²¹ The developing world, by contrast, still had a high number of children (35% of all people were under the age of 15) and a relatively low proportion (10%) of people aged 55 and over.²¹

However, at present, the number of older people in low income countries is often large and increasing. Well over half of the world's people aged 65 and over now live in developing nations (62%, or 313 million people, in 2008).¹ By 2040, this share is projected to exceed three-quarters, with the absolute number of older people in developing countries topping 1 billion.¹

As the population changes from being classified as 'epidemiologically young' to 'epidemiologically old', the numbers and relative proportions of older persons increase.²² Such changes in a society's age composition affect numerous social and economic circumstances and structures in that society.²² Common concerns emanating from population ageing are those relating to the country's social security systems and patterns of resource distribution.¹⁵ These concerns embrace intergenerational support systems, workplace pension funds, retirement policies, social welfare assistance, health insurance/medical aid funds, and health-care provision.²² While gerontology is still in its infancy throughout Africa, there is a growing recognition of the phenomenon of population ageing, especially in South Africa, and the social benefits and difficulties associated with this process.¹⁷

In 2002, the South African Policy for Older Persons and the accompanying South African Plan of Action²³ were developed, which formed the basis of the new legislation for older persons. The new Act on Older Persons, No. 13 of 2006 is the cornerstone of the provision of services to older persons and the implementation of the International Plan of Action on Ageing, to which South Africa is a signatory.²⁴ The Act on Older Persons maintains and promotes the status, well-being, safety and security of older persons; maintains and protects the rights of older persons; provides for the shift of emphasis from institutional care to community-based care to ensure that an older person remains in his or her home within the community for as long as possible; regulates the registration, establishment and management of services and residential facilities for older persons; combats the abuse of older persons and protects older persons in both the community and residential facilities.^{23,24}

1.2.3 Ageing in the City of Cape Town

Since 1994 there has been a national adoption of a social agenda, channelling substantial effort and resources towards identifying vulnerable groups in society, crafting legislation that would protect their interests and developing and implementing programmes and strategies to support them.²⁵ Ageing is recognised as an inevitable life stage which brings with it special needs, and today the aged are a primary target group for service delivery in the Western

Cape.²⁵ The developmental paradigm aims to enable older persons to live active, healthy and independent lives for as long as possible.

Almost 40% of all older persons can be found in Gauteng, followed by almost a quarter in the Western Cape.²⁶ Black South Africans comprise the majority of the elderly populations in 6 of the 9 provinces. In 2009 the proportional racial distribution of the aged living in the Western Cape was: Coloured (46.5%), White (44.2%), Black (8.6%) and Asian (0.7%).²⁶ Due to apartheid policies of the past most of the non-white elderly have lived a lifetime of being disadvantaged and most lived in conditions of poverty.²⁶ The communities selected to be included in this study are home to most of the non-white elderly in the City of Cape Town in order to better understand the needs of a group of elderly living in urban poverty.

The age distribution of the Cape Town population points towards an increase in the percentage of the population in the potentially economically active group (aged 15 to 64 years) since 1996 while that of the youth (aged 0 to 14 years) decreased (Figure 1.2).¹⁸ The Statistics South Africa (StatsSA) data in Figure 1.2 indicated that the percentage of the aged (65 years and older) remained constant in 1996 and 2001, and increased in 2007.²⁷

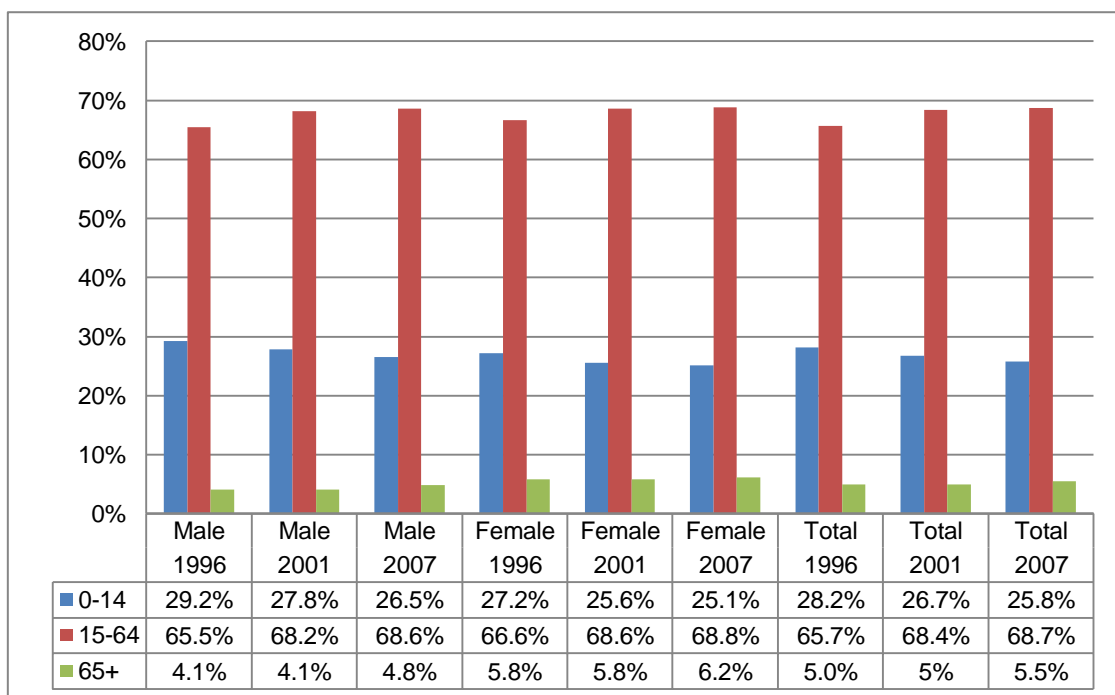


Figure 1.2: The percentage of the aged (65 years and older) in the City of Cape Town²⁷

These observations are corroborated by data from the Health Systems Trust, where the ageing index for the Western Cape has been increasing every year since 2001 (Figure 1.3).

The ageing index (also referred to as the elder-child ratio) is the number of persons aged 65 years and older per 100 persons aged under the age of 15 years.

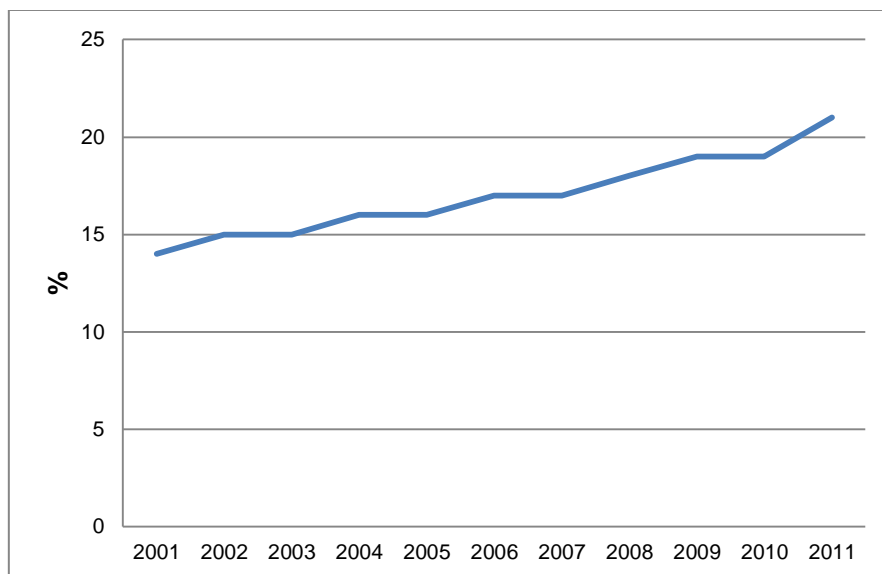


Figure 1.3: The ageing index for the Western Cape¹²

The ageing index increased from 14 in 2001 to 21 in 2011, which means that for every 100 young persons below the age of 16 years¹² there were 14 old persons above the age of 65 years in 2001, while for every 100 young persons below the age of 16 years there were 21 old persons above the age of 65 years in 2011.¹² The Western Cape is one of two 'net receiving provinces' for migration of rural persons to the cities.²⁸ In many cases, the age group most likely to migrate are the young adults in search of employment, hence the increase in the age group 15-64 years of age.²⁸

1.3 Urbanization

Internationally, rapid urbanization is stimulated by economic opportunities in urban areas as well as poverty and inequality in the rural vicinity of cities.⁵ This has led to sharp divisions in growth not only between cities and rural areas, but also between social groups. An illustration of this increased urbanization of poverty is the one billion poor urban residents living in slums globally.⁶ Across the world many local authorities could not possibly meet the challenges of generating sufficient employment, providing adequate housing and meeting the basic needs of citizens.²² The problem is not urbanization per se, but the fact that urbanization in many developing regions has not resulted in greater prosperity or a more equitable distribution of resources.²²

Urbanization, in the form of the rural-urban drift has affected provinces across South Africa, contributing to the housing backlog and posing major challenges in aspects of economics, education, housing and public health.²⁶ There are two major forces impacting the City of Cape Town. The first is one of decreasing contribution of the formal economy since a shift is occurring towards the growth of the informal economy in the City.¹⁸ The second is urban in-migration - which has, and will, result in the increase of the urban poor in the city, resulting in growing demand for infrastructure and services.¹⁸

Between 1996 and 2006 the population of Cape Town has grown fairly rapidly with an increase of 700 000 people, with an annual average growth rate of 3% in 1996.¹⁸ By 2006, this had decreased to 1.61%.²⁶ The city's population growth is expected to slow down dramatically over the next 15 years, mainly due to reduced fertility, the impact of HIV/Aids and reduced migration to the city.¹⁸ A growth of 300 000 people is instead predicted for the period between 2006 and 2021 with a growing proportion of the aged and youth relative to total population.¹⁸ It is unsure whether this expectation actually has materialized thus far as no follow-up data have been published yet.

Cape Town is a sprawling city, characterized by a relatively low average urban population density with approximately 2 644 people per square kilometre in 2001.²⁹ The population density of Mumbai, for instance, is approximately 11 times higher than that of Cape Town, while the density of Rio de Janeiro is 1.8 times higher than that of Cape Town.³⁰ Although the density of cities like Cairo and Mumbai are obviously not ideal, the higher density range of other world cities indicated that the Cape Town density is low by international comparison with some scope to increase density.^{29,30} The highest densities in Cape Town are in the south-east of the metro, which represents many of the lowest income areas in the city. These areas are often characterized by overcrowding and housing with poor ventilation, predisposing to Tuberculosis (TB) and especially HIV-related TB. On the other extreme, 20% of housing value in the city takes up 40% of developed land.²⁹ Land availability for low-income housing is a restraining factor, with the present situation leading to unsustainable patterns of development in city neighbourhoods.²⁹

Population growth will impact on the amount and type of infrastructure and services which will have to be provided in the city while the age distribution is a significant determining factor for city planning.^{26,27} An increasingly ageing population will need appropriate neighbourhood design planning, social and healthcare facilities, while mechanisms will also have to be found to simultaneously and effectively cater for the large proportion of youth through sport, recreation and employment.

According to Roux (2009), “it is unclear what role access to healthcare facilities in the proposed area of destination plays in attracting migrants to particular areas, or indeed what role health information plays in migration decision-making.”²⁸ What is clear from the South African Migration and Health Survey (SAMHS) which was conducted among the African population of South Africa between 1999 and 2000, is that very few individuals (less than 0.5%) moved to destination areas primarily to improve their access to social and public (including health) services. Less than 60% of migrants obtained information before moving regarding health and public services in their proposed destination areas. It would, however, seem that refugees (fleeing from violence) were least likely to obtain information regarding health and public services before departure.²⁸ By contrast, migrants who were involved in more structured and probably better-planned movements were far more likely to have obtained some information before their most recent move. Not unexpectedly, the likelihood of having acquired information before the previous move increased with level of education: highly educated migrants were much more likely to have obtained prior information than illiterate migrants.²⁸ It is interesting to note that migrants involved in urban–urban relocations were much more likely to have obtained information than rural–urban migrants.²⁸

1.4 Living conditions of the urban poor

Beyond the shortage of money, poverty encourages a certain approach to decision-making - a world view - which influences choices made, activities and behaviour undertaken that affects living conditions. Poverty deprives people of material resources and as a result the loss of prestige and status in society. Health conditions and issues of the urban poor have been masked by urban averages for all socio-economic groups in traditional large data sets.³¹ The results demonstrated that urban dwellers appear to be better off than rural populations, with lower morbidity and mortality rates and better access to health services, confirming the supposed ‘urban advantage’ to health programmers.³² But these advantages are only exhibited in large urban areas.³¹ Studies have found that smaller urban areas i.e., those under 100 000 in population size are considerably underserved.³¹

In the developing world, more than 1 billion people, including the aged, continue to lack an adequate supply of clean water and adequate disposal of excreta.³³ The overall global burden of water, sanitation and hygiene related diseases remains high even though oral rehydration therapy has led to reductions in mortality.³³ Despite this demonstrated need for water, sanitation and hygiene improvements, our understanding of integrated control strategies remains poor and vulnerable populations such as children and the aged have to find ways of coping under such conditions.

The hypothesis that poverty and deprivation exert intense pressure on a significant proportion of the aged has been a recurring theme of research on ageing in all industrialized societies.³⁴ In the United Kingdom, older people have been described as the largest group in the population living in poverty, ever since data was first collected systematically.³⁴ The problem of poverty in old age is not peculiar to industrialized societies; it is endemic among both Western and Eastern countries as well as third world countries.³⁴ Research demonstrates that the risk of experiencing poverty is three times greater for older adults than it is for other age groups.³⁴ Not only does poverty affect a substantial proportion of older people, but it is likely to be an enduring experience (i.e. chronic poverty). The high incidence of poverty and low income among older people is reflected in other measures as well.³⁴

The prevalence of poverty among older people is also linked to education levels, including differing levels of literacy.³⁵ Poverty, especially in old age is not a gender-neutral condition, with older women more likely to be poor than older men. Furthermore, women and men experience poverty in different ways.³⁶ Another consequence is the inability to participate effectively in economic, social and political life.³⁴ Older people living in poverty find themselves socially excluded and isolated from decision-making processes.³⁴ This affects not only their income and wealth but also contributes to poor housing, ill health and personal insecurity.³⁴

The environment in which they live has a profound impact on people's lives.³¹ This is particularly important for older people, since they spend more time being home-bound than many other age groups in society. Thus the quality of their living area forms an increasingly large part of the everyday world of many aged people. Poverty and inadequate incomes are often associated with housing deprivation among older people and often reflect housing provision patterns in earlier life.³⁷ Moreover, housing deprivation suffered by the urban poor is also the result of past arbitrary, politically driven planning policies with few appropriate housing options available to poverty-stricken elderly persons.³⁷

Achieving equitable universal health coverage requires the provision of accessible essential services for the entire population without imposing an unaffordable burden on individuals or households.⁸ In South Africa health-care access for all is constitutionally enshrined; yet considerable inequities remain, largely due to distortions in resource allocation.³⁸

Socio-economic status, race, insurance status and urban-rural location are associated with access to care, with black Africans, the poor, uninsured and rural respondents, experiencing greater barriers to access.^{38,39} As people age, they become more vulnerable to ill-health and

more dependent, with chronic diseases emerging as a serious problem.⁹ In terms of growth of health care expenditure, ageing recipients of health care are often cited as the main contributing factor, notably in the developed countries.^{2,38}

An individual's decision to utilize health care services is a result of complex interaction of factors relating to the person's health or self-perceived health status, and the availability of health care services on offer. One's experience, values and beliefs with the health care system also play a role in the decision making about health care seeking. Self-perceived health status has consistently been found to be associated with the occurrence of hospital admissions among the elderly both in developed countries and developing countries.^{40,41}

1.5 The inevitable effects of ageing

Globally the demographic ageing of populations is directly related to fundamental changes in the health and disease patterns within that population - as epidemiological change ensues with a change from the predominance of infectious, parasitic and nutritional diseases to the growing weight of Chronic Diseases of Lifestyle (CDL).⁴²

From a clinical perspective, the ageing process is commonly associated with disease and disability.⁴³ This hypothesis has been challenged as there are many older persons who do not suffer from chronic illness or disability, and many others claiming to be in good health despite the presence of chronic illness.⁴³ However, this notion is supported by morbidity and cause of death statistics showing that chronic diseases are more common among older than younger people, and that the prevalence of disability and chronic disease increases with advancing age.⁴³ Mortality statistics in South Africa are an important and often-used source of evidence on the health status of the population, while it is difficult to find reliably measured population-based morbidity information about disease, disability and health risks.⁴³ Given the recent emphasis on reproductive, child, adolescent and maternal health in the country, it is likely to be increasingly difficult to find reliable representative information about disease, disability and health risks in the older population.⁴³

At present, the South African population suffers an unique quadruple burden of disease, consisting of the dual infectious/chronic disease burden, with the addition of high rates of injury and HIV/AIDS.⁴³ In the older population (60+ years), the majority of the mortality burden comes from CDL, which were responsible for approximately 84% of deaths in 2000.⁴³

Frailty is a key concept in geriatric medicine and is described as the age-related decline in function and well-being.⁴⁴ Frailty is known to increase with ageing and confers a high risk for falls, disability, hospitalization, and mortality.⁴⁴ In a systematic review of the association with frailty and survival in old age, Shamliyan *et al.* (2012) found a prevalence of 14% when frailty was defined as a phenotype exhibiting three or more of the following: weight loss, fatigue/exhaustion, weakness, low physical activity/slowness and mobility impairment.⁴⁵ They reported a pooled prevalence of 24% when frailty was defined by accumulation of deficit indices that included 75 possible diseases and impairments.⁴⁵

Frailty has been linked with disability, concomitant diseases and other characteristics, but it is recognized that it may have a biological basis and be a distinct clinical syndrome in itself.⁴⁶ Frailty has been associated with a high risk for falls, hospitalization and mortality.⁴⁶ The process of becoming frail due to ageing appears to be a dynamic transition from robust state of health to functional decline.⁴⁶ "During this process, total physiological reserves decrease and become less likely to be sufficient for the maintenance and repair of the ageing body. Central to the clinical concept of frailty is that no single altered system alone defines it, but that multiple systems are involved."⁴⁶ Clinical consensus is that the characteristics include wasting (loss of both muscle mass and strength and gradual weight loss), loss of endurance, decreased balance and mobility, slowed performance, relative inactivity and, potentially, decreased cognitive function.⁴⁶

Frailty is a distinct clinical entity that is easily recognised by geriatricians, but demonstrates multiple manifestations with no single sign or symptom being sufficient or essential for a consistent diagnosis. "Manifestations include appearance (consistent or not with age), nutritional status (thin, weight loss), subjective health rating (health perception), performance (cognition, fatigue), sensory/physical impairments (vision, hearing, strength) and current care (medication, hospital)."⁴⁶ Although the early stages of the frailty process may be clinically silent, the syndrome usually becomes detectable by assessing clinical, functional, behavioural and biological markers.^{45,46} This undetected early stage of frailty implies that responses by aged participants in surveys are likely to be an under-recognition of the true extent of frailty in any community-based study of the aged. A better understanding of the clinical process and its underlying mechanisms is needed to confirm the intuitive perception of many clinicians that progressive frailty is distinguishable from ageing and in consequence is potentially reversible.^{45,46}

The number of frail older people living independently will continue to increase over time.⁴⁴ It is unclear however; exactly which subset of the population is referred to when speaking

about the frail elderly, as conditions for independent living are dissimilar in different community settings.⁴⁴ The frail elderly in informal settlements find themselves in an extremely vulnerable position due to a number of factors, namely, their increasing dependency status, limited resources and a seriously adverse physical environment.⁴⁴

Most Black and Coloured South Africans in urban dense settlements enter old age after a lifetime of poverty and deprivation, poor access to health care and a diet that is usually inadequate in quantity and quality.^{26,47} However, nutrition interventions aimed at alleviating the plight of the poor in African countries are directed primarily toward infants and young children, as well as pregnant and lactating women.⁴⁷ Information on micronutrient status in older people in Africa is sparse, yet it appears that anaemia related to suboptimal folate status is a particular problem.⁴⁷ Important determinants of poor nutritional status in the elderly in the African context include inadequate household food security, social unrest (war and famine), and the indirect impact of HIV infection and AIDS.⁴⁹ The rapidly increasing size of the older population, combined with their increased burden of care-giving responsibilities and severe socioeconomic hardship, indicate an urgent need for increased attention to this group, including applied research on nutrition problems and the development and evaluation of nutrition interventions.^{47,49}

Older persons in already deprived communities with mental health disorders represent a vulnerable group of people with extensive and complex needs. The older population is rapidly increasing worldwide and, as a result of deinstitutionalization of mental health care, older persons are remaining at home for longer periods until their condition has deteriorated and they become a danger to themselves or their environments.⁴⁸ This is in part due to the dire lack of assisted-care institutions.⁴⁸ Added to this, the rate of urbanisation of the rural poor has increased the population of urban dwellers in low-income environments, where mental health care facilities are no better than in the underserved rural areas that they left behind.

1.6 Burden of the ageing on health and wellbeing

The demographic ageing of populations throughout the world is directly related to fundamental changes in health and disease patterns¹⁰ within that population. Changes from the predominance of infectious, parasitic and nutritional disease, to growing cases of lifestyle diseases and CDL occur as a country progresses to a higher-income economy.⁵⁰ This has profound epidemiological effects on the population. This phenomenon is usually referred to

as 'epidemiological transition' - as opposed to demographic transition - and is also a real force in the overall health situation of the aged of such a country.⁵¹

As people age, they become more susceptible to disease and disability.⁴² The WHO reported that much of the burden of ill health among older people can be reduced or prevented by adequately addressing specific risk factors, including:⁹

Injury. Falls often result to injuries in the elderly. These injuries make up a large percentage of the burden of disease and disability in older people.⁹ The risk of falls increases steeply with age. Injuries from falls (such as femur fractures) usually require hospitalization and costly interventions.⁹ These include rehabilitation, and cause much of the functional limitations that lead to the need for long-term care, including admission to nursing homes.⁹

Development of non-communicable diseases. Healthy ageing is a lifelong process. Patterns of harmful behaviour, often established early in life, can reduce the quality of life and even result in premature death.⁹ Poor nutrition, physical inactivity, tobacco use and harmful use of alcohol contribute to the development of chronic conditions.⁹ Diabetes, cardiovascular diseases, cancer, chronic respiratory diseases and mental disorders account for an estimated 77% of the disease burden and 86% of deaths in the EU. The most disadvantaged groups carry the greatest part of this burden.⁹

"While the total South African population is affected by a combination of injuries, HIV/AIDS, other communicable diseases and non-communicable diseases, the major cause of death in the older population are non-communicable (or chronic) diseases. These diseases were responsible for an estimated 84% of older person deaths in the year 2000."⁵²

When single causes of death were grouped together in disease categories, cardiovascular disease was the primary cause of death in this mortality review, accounting for 43% (over 62 000) of the deaths in persons older than 60 years.⁵² Malignant neoplasms (16%) were the second-largest category, followed by respiratory disease (10%), infectious/parasitic diseases excluding HIV/AIDS (8%) and diabetes mellitus (6%).⁵² Ischaemic heart disease and stroke were the two leading single causes of death, with the order for men and women reversed. These two conditions accounted for almost a third of deaths in the older population.⁵²

Poverty. Older people are consistently among the poorest in all societies, and material security is therefore one of the greatest preoccupations of old age.³⁵ Many experience the same lack of physical necessities, assets and income felt by other poor people, but without

the resources that younger, fitter and more active adults can use to compensate.³⁵ An individual is considered poor if his/her living standard indicator is lower than a given threshold, known as the poverty line.⁵³ The practical implementation of this definition requires the choice of a proxy for measuring individual well-being and a poverty line. The risk of poverty increases with older age and is much higher among women than men.⁵³

Although poverty is increasing amongst elderly white South Africans due to early retirement and retrenchment on account of employment equity and Black Economic Empowerment, the overwhelming face of poverty in South Africa remains that of older black people.²⁴ They are the generation that lived through apartheid; who were not educated or incorporated into the formal economy so that they could provide for their retirement.²⁴ Educational disadvantages are prominent among older black South African persons, with over half (58%) having had no formal education.²⁴

Social isolation and exclusion, mental health disorders. Loneliness, social isolation and social exclusion are important social determinants and risk factors of ill health among older people.⁹ They affect all aspects of health and well-being, including mental health, the risk of maltreatment and the risk of emergency admission to hospital for avoidable conditions, such as severe dehydration or malnutrition. In all countries, older women have a higher risk of social isolation than older men.⁹

Elder maltreatment. Elder maltreatment is defined as physical, sexual, mental and/or financial abuse and/or neglect of people aged 60 years and older. The scale of the problem has not been fully investigated in the present study area, but literature^{26,54,55} indicates that this problem occurs extensively internationally and in South African communities.⁹

Custodial role of elders in the community. The legacy of race and gender based discrimination continue to affect the living conditions of older people in South Africa, and most remain dependent on government transfers.⁵⁶ Older persons are relied upon by others to share their social grants and they are increasingly called upon to take over the nurturing responsibilities that their children are unable to perform due to illness or absence as a result of labour migration.⁵⁷ The burden that children present to female headed households, particularly those headed by older women, can be illustrated by the high proportion of “skip-generation households”.⁵⁷ Whereas 6% of South African households are considered to be skip-generation (where a grandparent lives with his/her grandchildren in the absence of their parents), this type of household constitutes almost 10% of all female headed households.²⁶ The prevalence differs by age and population group, and African and in particular African

females are much more likely to head skip generation households than either male or female heads from other population groups.²⁶ This represents a significant burden to households that are often devoid of employed adults and who are largely dependent on social grants.^{26,27,57} While households with three or more generations, including skip-generation households, are relatively common amongst Africans and Coloureds, it is much less widespread amongst whites and Indians where nuclear households containing two generations or fewer predominate.²⁶

1.7 Health care and support of the elderly

As is the case for reliable population-based information about disease, disability and health risks in the older population in South Africa, there is limited data about geriatric service provision and utilization.⁴³ A recent South African government report to the United Nations Second World Assembly on Ageing makes the following claims, “older persons have free access to primary health care at over 3500 primary health-care clinics; recipients of social grants receive secondary health-care services free of charge at public hospitals; five departments of geriatric medicine exist in the country; and a range of health promoting guidelines, some specific to older persons are in place”.⁴³

South African studies among older persons have shown dissatisfaction with the quality of health care at primary health care facilities.⁵⁸ Distance, inefficient appointment systems, long waiting times, and apparent lack of interest from nursing staff at health facilities are problems facing older clients.⁵⁹ A qualitative study among 240 older persons in both rural and urban areas of three provinces revealed that the quality of treatment that they received at public health-care services was a major concern among older persons.⁶⁰ This study referred among other things to shortages or unavailability of medication, unavailability of assistive devices, and perceived lack of thoroughness, respect and sharing of information by the health personnel who attended to them.⁶⁰

In order to determine the impact of population ageing on health care systems, understanding of the following relationships are needed:⁶¹

The association between population ageing and the scale of health needs. One can assume that each individual who survives into advanced old age will probably have increasingly serious health problems.⁶¹ As countries improve on their population life expectancy, so too will the proportion of the population with serious health problems

increase, unless there is an improvement in the health of successive birth cohorts which shows up as a decrease over time in age-specific prevalence rates of disease.⁶¹

The association between increasing health care needs and levels of health care spending. The relationship between the extent of ill-health in the population and the consumption of health care resources is mediated by a host of non-demographic factors.⁶¹ Leeson (2004) stated that although numerous cross-national studies have considered the determinants of health care costs, only one has found that the age structure of the population (that is the proportion of population aged 65 and over being taken as the age structure indicator) is the explanatory factor.⁶² It is the wider effects of income, lifestyle characteristics and new technology, alongside the effects of environmental factors which are driving up the demand for new advanced medical applications.⁶¹ The second impediment in the relationship between population ageing and the level of health care spending concerns the relative significance of age and remaining life expectancy (or proximity to death) in establishing the age profile of health care spending in the population as a whole.⁶¹ Even though it is clear that per capita health spending does increase steeply once people reach their 60s, repeated analyses of age-related data on health spending have shown that proximity to death is more important than age *per se* as a forecaster of the usage of health resources.^{63,64} Health care spending is severely concentrated in the last few years of life, so much so that some analysts have argued that ageing has almost no effect on the way the usage of health care resources increased with age.⁶³

South Africa has a pluralist medical system, with traditional and western healers operating side-by-side.⁶⁵ Only a few elderly persons in the general population belong to medical insurance schemes and hence have access to private doctors and hospitals.⁶⁶ Basic primary health care is free for all South Africans but this service does not include all the services and health needs that the elderly require.⁶⁷

1.8 Government financial assistance

Woolard (2010) explained that the economic downturn and the sharp increase in social assistance expenditure in recent years, have shown the importance of the social security system for South Africa as a public safety net in order to alleviate poverty and to prevent more people from falling into poverty.²⁴ The size, shape and design aspects of the social assistance system make South Africa an interesting case study, and has a direct bearing on the present study since the aim is to investigate the health status of elderly in Cape Town who are receiving a state pension.

The transformation of social welfare in South Africa since 1994 is underpinned by the social development macro policy framework, aimed at poverty alleviation, which combines social and economic goals. The South African Constitution (1996) makes provision for social assistance to people without any means.⁶⁸ The White Paper for Social Welfare (1997) advocated a comprehensive and integrated social security system, which included social assistance, and social insurance and co-responsibility between employers, employees, citizens and the state to ensure universal access and coverage of social security.⁶⁸ It also promoted the idea of creating new models of social security, which combined social security with community and social development strategies and employment programmes such as public works programmes.

A social security system delivers an important safety net for the population of the chronic poor and for the mitigation of economic shocks.⁶⁹ Social grants can provide transfers for the most vulnerable population groups, such as the elderly, disabled and children, while forms of social insurance such as unemployment benefit provide support to workers who lost their jobs.⁶⁹ Non-contributory cash transfers are an important income support for poor households in South Africa. At the time of the transition to democracy in 1994, the South African social security system was already notably well developed for a middle-income country.⁶⁹

The South African government had over the years been faced with a number of challenges in social security provisioning and benefit administration. Some of these challenges were:⁷⁰

- Unorganized institutional arrangements and the absence of uniformity;
- gaps and inconsistencies in coverage;
- integrity of the system/poor application of rules;
- inefficient processes and high administrative costs;
- budgetary and financial pressures;
- fraud and corruption, and
- the poor quality of service delivery.

In 2005, the administration of grant programs was consolidated under the South African Social Agency (SASSA).²⁴ This move saw the establishment of a specialist institution responsible for the management, administration and payment of social security benefits.

Table 1.5 describes the social grants paid out in South Africa. To qualify for any of the grants in Table 1.5, a person must be a South African citizen or permanent resident. For most grants, the applicant will have to undergo a means test.^{24,70} The means test changes every

year for each of the grants, and depends on the applicant's income, assets, and whether or not the applicant is married. If married, it is based on the income of both the applicant and spouse. An application form is completed with the aid of the following supporting documents: a 13 digit South African identity book, a copy of proof of residence and proof of marital status (marriage certificate, divorce order and agreement or death certificate of the late spouse, if widow/er).²⁴

Table 1.5: Several grants paid out monthly in South Africa by SASSA²⁴

Grant program	Description of Recipients	Eligibility	Value as of April 2012
Old Persons	The elderly over the age of 60	Means test	R1200*
War Veterans	Veterans over the age of 60	Means test	R1220
Disability	Disabled persons between the age of 18 and 59	Means test	R1200
Foster Care	Legal foster parent of the children under the age of 19	None	R770
Care Dependency	Severely disabled child under the age of 18	Means test	R1200
Child Support	Child under the age of 18	Means test	R280
Grant in aid	Older persons, veterans, disabled grantees	Unable to care for them selves	R280

**At the time of the study, the amount for the grant was R1140*

In South Africa, social grants are promulgated under the Social Assistance Act, Act 13 of 2004 which is meant to streamline and improve service to social grant recipients. The National Treasury funds social assistance.²⁴ The National Department of Social Development (DSD) is responsible for policy development in respect to social assistance. SASSA is the implementing agency responsible for administering the disbursement of about 15 million social grants. SASSA contracts payment service providers (Net1, All Pay or Empilweni) to deliver 'cash' payments at pay points around the country.⁷⁰ These pay points are scheduled monthly either in community halls, churches or civic centres, under strict security.

More than half of the current 9 million recipients receiving cash pay-outs already have the benefits deposited into bank accounts that they have chosen as their preferred payment means (either ABSA or Standard Bank accounts).⁷⁰ Figure 1.4 summarizes the electronic (bank) and cash pay-outs per province for social grants in South Africa.

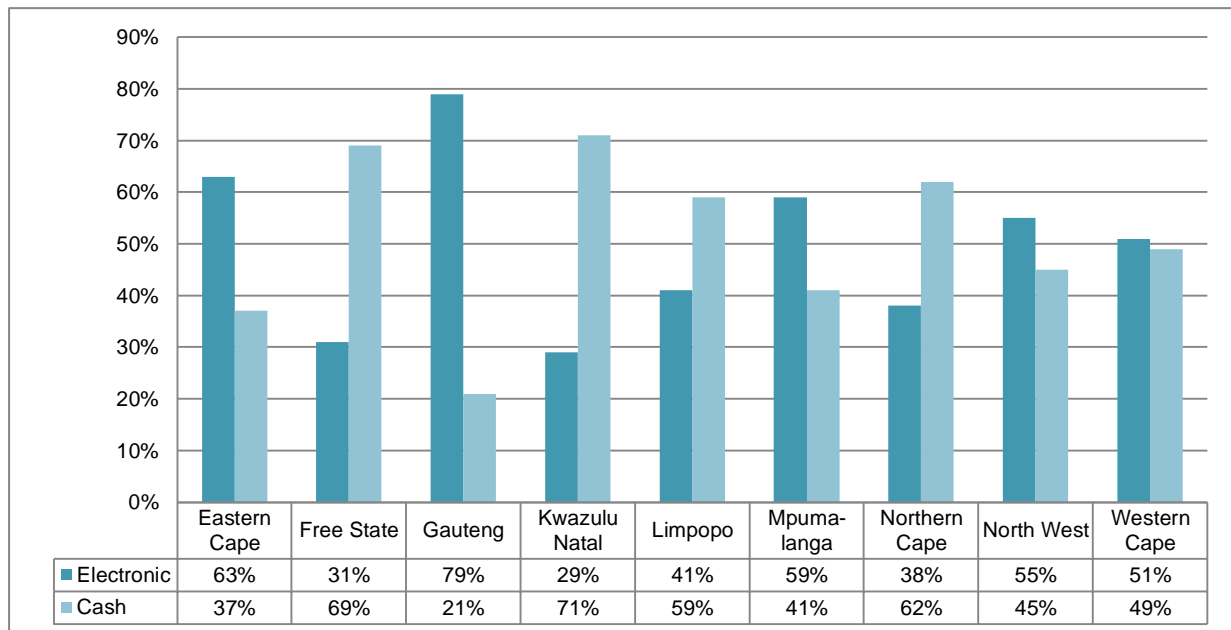


Figure 1.4: Cash and electronic (bank) pay-outs per province for grants in South Africa⁷⁰

By April 2011, about 15 million people (out of a population of 49 991 470) were benefiting from social assistance grants.²⁴ The Child Support Grant is dominant and accounts for more than 10 million of the nearly 15 million beneficiaries from the six other programs, all of which have monthly pay-outs, some to the same recipient.⁷⁰ In the case of Child Support Grants, the grant is paid to a caregiver who does not have to be the biological parent of the child as there is acknowledgment that large numbers of South African children are cared for by persons other than their parents due to the migrant labour system and historical factors.⁷⁰ It is also responsive to the situation of orphaned and vulnerable children affected by health conditions such as the HIV/AIDS epidemic. Of the remaining 5 million beneficiaries, about 2.5 million were receiving old age pensions, about 1.3 million were receiving disability grants, and 570 000 children were benefiting from foster care grants.²⁴ The present study concentrates only on the state pensions received by the elderly.

1.9 Custodial role of elders in the community

Key demographic trends, such as the large population share of school-going youth, very high unemployment rates and the devastating impact of the HIV/AIDS epidemic on younger age cohorts, have placed the social old-age pension and the elderly at the centre of livelihood strategies of many South African households. In this context, the social pension plays a vital role as a poverty-alleviation mechanism, with the effect of pension income on the welfare of other household members being strongly conditioned on whether or not the pensioner is female.⁵⁷ While elderly women benefit significantly from the pension system, important

external factors such as changes in household composition and allocation of labour time, as well as changes in child health and educational status, are also associated with pensioner receipt, especially if the pensioner is female.⁵⁷

There is evidence that additional pension income supports a change in household living arrangements to maximize the comparative advantage of prime age women in labour markets, allowing out-migration in search of work, leaving the elderly, (elderly women in particular) to care for children.⁷¹ Such changes have been shown to be positively associated with changes in child health and educational status^{57,71}, particularly for girl children living with maternal grandmothers.

One of the strongest recurring themes in the body of literature concerning the South African pension scheme is the importance of gender. Not only does the pension reach significantly more women than men, but the effect of pension income on the welfare of other household members and changes in the intra-household allocation of labour, depends vitally on whether or not the pensioner is female.^{57,72}

A recent study carried out by the United Nations Children Fund (UNICEF) aimed to survey rural and urban areas of five South African provinces, supporting the rigorous impact assessment of how access to a child support grant affects key aspects of child and adolescent well-being.⁷³ The results of this study identified the positive developmental impact of the Child Support Grant in promoting nutritional, educational and health outcomes.⁷³ Early receipt significantly strengthened a number of these important impacts, provided an investment in people that reduced multiple dimension indicators of poverty, promoted better gender outcomes and reduced inequality.⁷³ The study also found that adolescents receiving the Child Support Grant were more likely to have had some positive educational outcomes, were somewhat less likely to experience child labour, and were significantly less likely to engage in behaviours that put their health and well-being at serious risk.⁷³

1.10 Methodological issues

In community health surveys, choices regarding the methodology have to be made that can have profound effects on the study design and study outcomes. The milieu of the present study is one of urban poverty and specifically urban elderly who qualify for non-contributory pensions (also called social cash transfers or government grants). The participants in the present study had a low level of literacy and on the whole occupied dwellings of poor quality that they most often shared with other persons, not all of whom were family members. The

paucity of existing community-based studies on old-age pensioners in the City of Cape Town meant that a cross-sectional survey with wide-ranging coverage of demographic, social and health factors was the most logical design to employ in order to determine the extent of present needs and generate hypotheses for further, controlled studies.

The following is a brief review of the main considerations or issues that were taken into account when the present study was designed.

1.10.1 Cross-sectional Survey study design

A cross-sectional survey design aims to describe the relationship between illnesses and other health-related states and other variables of interest such as social, economic and demographic factors.⁷⁴ The cross-sectional design means that a picture is built up of the specific population at a specific point in time by observational means, but analytic elements can be included in such a design.⁷⁵ The timeframe of the "point in time" refers to the once-off nature of the encounter between the data-gatherer and each participant. Obviously the survey will be completed over time, but should be done in the shortest time practically possible so as to preserve the 'snapshot' nature inherent in this design.⁷⁵

Surveys are studies aimed at determining the extent, frequency or degree of a particular attribute such as health status in a defined population and at a specific point in time.⁷⁶ Subjects are contacted at that specific point in time and the relevant information obtained from them, usually by face-to-face interviews, telephone surveys, web-based surveys or mailed questionnaires. Some surveys go further than the descriptive and also collect information on risk factors or explanatory variables in order to draw inferences on the association between the variables.⁷⁶ It is vitally important to stress at this stage that, because of the cross-sectional nature of the design, the temporal scale (i.e. 'single point in time') does not allow any inferences on causality between health conditions and risk factors, only the associations between them.⁷⁵ Cross-sectional surveys are however very good for the identification of candidate risk factors that can be investigated subsequently by comparative designs such as case-control studies.⁷⁵

Health surveys are vital in building the evidence base needed for identifying needs and understanding health disparities between various groups in a population. Such surveys are a valuable approach to health planning, since they can gather information not readily available from other sources and, with proper attention to representative sampling and standardisation of measurements, it can provide significant input to improve policies and programmes in the

health services.⁷⁷ The quality of the data that can be gathered with face-to-face interviews are generally very good and the response rates are also regarded as the best that can be achieved, given the topic and the populations involved.⁷⁸

"Health surveys are a very important component of the epidemiology toolbox, and play a critical role in gauging population health, especially in developing countries. Research on health survey methods, however, is sparse".⁷⁹ Sampling methods used in health surveys are not well suited for certain challenging settings, such as isolated or poverty-stricken regions without available or reliable sampling frames, hidden and vulnerable population groups, urban slums and populations living under strong political pressure.⁷⁹

The primary limitation of a cross-sectional design lies in its inherent design. Since the condition(s) of interest and the possible risk factors or exposure factors are assessed simultaneously, there is no evidence that can support causal inferences.⁸⁰ Face-to-face surveys are generally seen to be time-consuming and expensive, but providing data with the highest precision and validity.^{77,78,80} "Response rates vary substantially by the mode of contact and data collection. The typical pattern is that f-to-f surveys have the highest response rates, followed in order by telephone, mail, and Web surveys. The presence of interviewers is critical to the higher rates, especially in the f-to-f mode".^{77,78,80} There are also concerns regarding the interaction of the interviewer with the participants, which will be reviewed below in the section entitled 'Structured (face-to-face) interviews' (Section 1.10.4)

1.10.2 General data quality and sampling matters

For a sampling procedure to be unbiased so that the survey conclusions can be seen as valid, the subjects must have been selected with an element of randomisation in the selection procedure.⁷⁵ Since the target population under study in this thesis is one of urban poor elderly persons gathering at pension points in Cape Town to receive their monthly pensions, the other sampling procedures that are not applicable will not be mentioned (i.e. simple random sampling, cluster sampling, etc.). In essence a multistage sampling procedure is needed, since the pay-out points need to be selected first and then a procedure for random unbiased selection of participants. The pay-out points were selected with the aid of the SASSA officials involved in the management of the pay-out system on the basis of representivity of the low-income areas in the City. Then a procedure of systematic sampling with random starting points was chosen for selecting the sampling units, i.e. the participants. More study-specific information will be given in the Methods chapter.

Systematic sampling involves selecting a random start point (the only random element about this sampling method) and selecting every x^{th} item from the list (or in the case of the present study the pay-out queue).^{81,82} Randomisation in the field is easily achieved by rolling dice or using a pre-printed set of random number tables. The calculation of the size of x depends on the eventual size of the sample, but a convenient integer to use is 10.⁸² This way a 10% sample is achieved, making estimation of the size of any observed prevalence in the sample easy to relate to the population.⁸² Systematic sampling is more efficient than simple random sampling when one needs to select a large sample and if a natural order exists in the sampling frame such as a queue.^{81,82}

Systematic sampling is used as a proxy for simple random sampling where no list of the population exists or when the elements present themselves in roughly random order.⁸³ Systematic sampling is not the same as simple random sampling (the gold standard against which other sampling strategies are measured).⁸³ It does not have the property that every possible group of x units has the same probability of being selected for the sample as is found with simple random sampling. If the units of the population present in a roughly random order (as can be assumed in the case of pensioners in the queue) then systematic sampling will behave much like simple random sampling.⁸³

Systematic sampling has the disadvantage that underlying periodicity of any characteristic occurring at regular intervals in the population can impair the validity of the strategy.⁸² For example, if every 10th person in the queue happens to live in the only old age home in the area, then this selection will be biased. The likelihood of such bias in the present study was however deemed to be small.

The decision on what sample size to employ for a valid survey has no definitive answer - large samples with rigorous selection are more powerful as they will yield more accurate results, but data collection will be proportionately more time-consuming and expensive.⁸⁴ According to Kelley *et al.* (2003) there are three main considerations to keep in mind when deciding on a target sample size: the resources available, the aim of the study and the statistical quality needed for the intended data analysis.⁸⁴ Large sample sizes yield better statistical estimates but in many community-based studies it is difficult to obtain a high enough response rate.⁸⁴

Response rates can be a possible source of bias. A large non-response can yield unreliable answers leading to misleading conclusions.⁸⁴ For this reason it is advisable to build in a margin of expected non-response when community surveys are planned.

Sampling issues go beyond the narrow concerns of statistical design and sample size.^{84,85} The responses obtained in studies with a large 'stay-away vote' will only be representative of those who did answer, which may be very unrepresentative of the target population. Kelly *et al.* (2003) mentioned - with some hesitation - that, depending on many local factors, in general an achievable and acceptable response rate for interview-based studies is $\pm 75\%$ and for self-completed postal questionnaires $\pm 65\%$.⁸⁴ Final response rates should always be provided in the final report and an analysis of the non-responders provided, if at all possible.

1.10.3 Self-Rated Health (SRH) Assessments

The use of self-rated health assessments (also called self-assessed or self-perceived health) is common in community health research of the aged to determine their overall health status.^{86,87,88} There is however no consensus on exactly what SRH measures and how reliable such a determination may be.⁸⁶

SRH is the process of asking a participating individual to evaluate their health status on a given scale, or to compare their perceived health with that of their peers.⁸⁷ This action has two components - the actual or underlying health status and the reporting behaviour of the individual.⁸⁸ The intrinsic or latent health of an individual may be modified by the individual's reporting behaviour, much like a filter through which the true health status passes when the individual is asked to rate his or her health.⁸⁸ Thus the reporting behaviour can be seen as a form of systematic measurement error between SRH and true underlying health status.

There are varying notions of what SRH assessments actually include. In order to create a conceptual framework of SRH and its components, Arnadottir *et al.* (2011) used the International Classification of Functioning, Disability and Health (ICF) to create a better understanding of factors associated with SRH among community-dwelling older people in urban and rural areas in Iceland.⁸⁹ Associations of explanatory variables with SRH were analysed with ordinal logistic regression.⁸⁹ Explanatory variables included aspects of body functions, activities, participation, environmental factors and personal factor components of the ICF.⁸⁹ Univariate analysis revealed that SRH was significantly associated with all analysed ICF components through 16 out of 18 explanatory variables.⁸⁹ Multivariate analysis, however, demonstrated that SRH had an independent association with five variables: the likelihood of a better SRH increased with advanced lower extremity capacity, upper extremity capacity, household physical activity and older age; but decreased with more depressive symptoms.⁸⁹ Physical capacity, depressive symptoms, and habitual physical activity are of particular interest due to their potential for change through public health interventions.

The exact question construction and the response options given during SRH assessments vary considerably, but the question construction most often used in the United States were to ask the respondents to rate their overall health on a ordinal scale, for example very good, good, fair and poor.⁸⁷ The disadvantage of not having a pivotal or turning point is that it forces the respondent to choose between an option that is positive ("good") and one that is negative. The negative option in this case is called "fair", which is arguably closer to an actual neutral position, leaving only one truly negative option namely "poor". The options recommended by the WHO (1996) are very good, good, fair, bad and very bad.⁹⁰ The WHO scale has a pivotal point namely "fair" flanked by two positives and two negatives, giving a more balanced range of options.⁹⁰

SRH is associated with mortality and this has been confirmed by several reviews of the available literature for the past two decades.^{87,91,92,93,94} Even though the latest findings⁸⁷ expand on the findings of earlier studies, the basic message remains unchanged: "... self-rated health, adjusted for age, shows a graded association with mortality and this association is usually attenuated, but seldom disappears when other factors, primarily health indicators, are controlled for." SRH is regarded as an independent predictor of mortality⁸⁷ and this seems quite consistent across populations.⁹⁴ In a Japanese study, illnesses and functional status accounted for 35% to 40% of variances in the fair/poor self-rated health.⁹⁴ A logistic regression analysis of the data in this Japanese study found that, although illnesses and functional status were major determinants of SRH, economical, psychological and social factors were also related to SRH.⁹⁴

Assessing the validity of SRH is a complex task. SRH can be 'valid' in more than one way, depending on one's hypothesis and with reference to its particular use.⁹⁵ Jylhä (2009) argued that "... the absence of a direct objective measure of 'true health' means that there is no gold standard, no clear criterion for the validity of self-rated health".⁸⁷ Mortality is not a perfect outcome criterion since it reduces health to the probability of survival.⁸⁷ Even so, Jylhä (2009) reported that in population studies, self-rated health is probably the most feasible, most inclusive and most informative measure of health status. "In a given cultural environment, it is a powerful predictor of future health and use of health services".⁸⁷

In clinical trials and clinical practice, SRH is a measure that is truly sensitive to the patient's opinion and perspective. In this way it can meaningfully contribute to specific and more detailed determinations.⁹⁶

Crossley and Kennedy (2002) analysed a unique Australian survey in which a random sub-sample of respondents answered a standard self-assessed health question twice - before and after an additional set of health-related questions.⁸⁶ After answering the detailed questions, 28% of respondents changed their reported health status. It is important to note that a total of 13.6% of respondents reported a higher level of health while a total of 14.8% reported a lower level of health - the 'error' is thus distributed around the central value.

Most studies of SRH originate in the Western world and can be influenced by social and cultural factors. Gilbert and Soskolne (2003) analysed SRH in Soweto, South Africa which is a relatively deprived urban community similar to the present study.⁹⁷ It is thus reassuring to note that they affirmed the already established connections between social differentials and self-assessed health.⁹⁷ They found a clear relationship between health and a range of socio-economic indicators of inequalities, such as the living environment and access to social resources.⁹⁷

Observed heterogeneity in SRH amongst the aged in India indicated that almost a quarter of participants rated their health as poor and that there were considerable interstate variation in the ratings.⁹⁸

A note of warning is sounded by Powdthavee (2009) who argued that SRH suffers from systematic reporting bias and also confounding health norm effects (negative effects of other family members' health problems).⁹⁹ However, the study found that the relative health bias is small and came to the conclusion that measures of SRH may not suffer seriously from health norm bias. This is an important finding for researchers working with such data "as it shows that we do not have to worry too much about controlling for confounding influences from the health of other household members".⁹⁹

1.10.4 Structured (face-to-face) interviews

The study milieu posed challenges to the design of the data collection procedure. At the planning stage the particular prevalence's of serious impediments to any data gathering strategy was unknown, but it was common knowledge that a substantial proportion of these elderly respondents were poorly literate or completely illiterate, while others had impediments to using a pen or pencil such as severe arthritis or hand tremors. Some participants had poor eyesight while others were completely blind. Due to their financially disadvantaged position, very few of these respondents owned or had access to a telephone; therefore face-to-face interviews were the only option to gather data of sufficient reliability for a valid

research project. No other interviewing techniques will therefore be reviewed in this brief consideration of the methodological aspects.

For the purposes of community health surveys face-to-face interviews can be seen as a standardised data collection procedure, often using a structured format by following a pre-set measuring instrument such as a questionnaire.¹⁰⁰ Such interviews can be totally structured, i.e. only utilising the questions as set out in the questionnaire and only allowing the predetermined answer options, but it can also be semi-structured, i.e. following the questionnaire, but allowing spontaneous input or comments from respondents.¹⁰⁰ The present study utilised the latter approach, namely presenting the participants with the questions and answer options in standardised format, while also allowing time for any extra questions or comments and expansion as offered spontaneously by the respondents. All such spontaneously offered information was noted as part of the qualitative data gathering in the study.

According to the recommendations for health surveys of the WHO (1996), structured interviews, usually by means of a structured questionnaire, are the preferred mode of data collection in community health surveys.⁹⁰ The response rates are said to be higher and the questions completed more fully than with other methods such as postal surveys and telephone interviews. It was also noted that in general people will tolerate long interviews better than long self-completed questionnaires.⁹⁰

Hébert (1996) compared the responses elicited in a postal questionnaire with those provided in a face-to-face interview by subjects over 75 years of age in 842 community-dwelling elderly participants.¹⁰¹ They came to the conclusion that non-response bias occurred when postal questionnaires were used in this aged population and that care should be taken when interpreting health data obtained by this technique.¹⁰¹ They found refusal bias from face-to-face interviewing to be less important in this population.¹⁰¹

Response inconsistency is an issue that has to be taken into account when analysing data obtained in face-to-face interviews with elderly persons. Thorslund and Wärneryd (1990) surveyed an elderly population in Sweden twice on issues of health, medical care and home conditions.¹⁰² They also used two data collection methods - interviews and a postal survey.¹⁰² They concluded that more ailments were mentioned during face-to-face interviews, thus eliciting more detailed information.¹⁰² Face-to-face interviews were however noted to be much more expensive and took more time to complete.¹⁰²

A face-to-face interview can also be seen as an "interactional situation produced by the interpretations and actions of the people involved".⁸⁷ It was reported that some interviewees did not simply opt for one of the preset alternative answers but inserted their own descriptions and explanations. In a study on the interactions of different interviewers with elderly participants, Randall, Prior and Skarborn (2006) termed it "How listeners shape what tellers tell".¹⁰³ They found that the quality of information gathered depended inter alia on the relationship that the interviewee establishes with the interviewer.¹⁰³ They postulated that different 'listeners' elicited different reminiscences from the elderly participants in their study.¹⁰³

Marginalised subgroups may interact in different ways to being interviewed in health surveys than members of more dominant social groups. Van den Hoonaard (2005) explored older widows' strategies as participants in qualitative interviews.¹⁰⁴ She observed that older women often did not regard their experiences as valuable and their comments reflected this opinion.¹⁰⁴ She found that they attempted to transform the interview into a social occasion. Their strategies included asking whether or not they are doing a good job as research participants, suggesting that their talk may be unimportant, expressing concerns that their stories might be too negative.¹⁰⁴ She reported that these widows tried to alter the social context by taking on the role of hostess during the interview. When interviewing members of particularly disadvantaged or stigmatized subgroups whose opinions are often unspoken or ignored, researchers should be aware of the uncertainty with which such participants approach the research interview.¹⁰⁴

1.10.5 Questionnaire design

"Perhaps the most important part of the survey process is the creation of questions that accurately measure the opinions, experiences and behaviours of the public. Accurate random sampling and high response rates will be wasted if the information gathered is built on a shaky foundation of ambiguous or biased questions. Creating good measures involves both writing good questions and organizing them to form the questionnaire."¹⁰⁵

Questionnaire design is a complex procedure that requires the interrelationship of many factors.¹⁰⁶ At one end of the scale questionnaires can be very simple and short, but normally research questionnaires are complicated measuring instruments that enquire about many related subjects in varying depth, in different ways, and questions asked earlier may be repeated as a measure of quality control.¹⁰⁶ Questions appearing early on in the questionnaire may influence how people respond to later questions.¹⁰⁶

McColl *et al* (2001) in an extensive review of questionnaire methodology quoted insightful conclusions from Moser and Kalton (1971, now out of print) that is worth quoting here:¹⁰⁷

- Respondents will give some kind of answer to most questions, even if they are ill-informed, and will offer opinions on matters to which they have given little thought.
- Response accuracy will be limited by memory errors.
- Faced with sensitive or threatening questions, respondents may mislead, understate or exaggerate.
- Respondents' attitudes may be latent, many sided, inconsistent and of variable strength.

Drawing on these principles, they cautioned against the use of questions that:¹⁰⁷

- are insufficiently specific
- are hypothetical
- employ technical words and jargon
- are leading or presuming
- are vague or ambiguous

There are two main types of question designs and each with their own advantages and disadvantages - open-ended questions and closed questions.¹⁰⁸ There are many intermediate formats of questions where these two main designs are employed in innovative permutations and combinations.

Open-ended questions do not provide any answer options and allow the participant to answer in his or her own words. This design does not lead participants to suggested answers and generally provides more detailed or in-depth answers. They are highly suitable for qualitative aspects of a survey. They are however time-consuming to answer, difficult to administer since the burden of recording falls on the interviewer and are very difficult to code and analyse statistically. In many cases surveys with open-ended question formats are eventually coded in some form of classification by the researcher in order to obtain data that can be compared, thereby raising the real risk of interviewer/analyst bias (Personal communication, J Barnes, Faculty of Health and Health Sciences, University of Stellenbosch, Tygerberg). Open-ended questions are a very good way of probing the intended participants during a pilot study to ascertain the best answer options to use in closed questions.

Closed questions can take many forms but they all have one design feature in common - standardised ways of answering are presented to the participant from which to choose an option.¹⁰⁸ Closed questions can inter alia take the form of multiple choice, Likert scale, numerical options, ordinal options or categorical options. Rating scales are often used to quantify responses so that groups can be compared or persons compared over time.¹⁰⁸ Closed questions are simple to answer and are time efficient. Depending on the answer options and the survey mode (face-to-face, postal or internet based) they can, however, lead to answers that are biased or invalid.¹⁰⁸ Illiterate participants and elderly participants for instance may have difficulties with intricately designed answer options.

1.10.6 Ethics in Research by means of Surveys

Conducting research on human subjects is governed by a strict code of ethics that is enforced by the Faculty of Health and Health Sciences of the University of Stellenbosch. All studies have to be validly registered and the Ethics Committee of the Faculty ensures that the relevant principles as included in the ethical guidelines and principles of the International Declaration of Helsinki¹⁰⁹, the South African Guidelines for Good Clinical Practice and the Ethical Guidelines for Research of the Medical Research Council of South Africa.¹¹⁰

The ethical aspects of survey research using questionnaires are extensively reviewed in the monograph on standards for such research published by the Council of American Survey Research Organizations (CASRO).¹¹¹ Apart from the evident aspects of validity, accuracy and precision, the main aspects governing a code of good practice regards confidentiality, absence of coercion, non-intrusiveness, respect for human dignity and rights.¹¹¹ The WHO (2004) stated that the following four principles should be taken into account: (1) a duty to show respect for persons, (2) a duty to be sensitive to cultural differences, (3) a duty not to exploit the vulnerable, and (4) a duty to alleviate suffering.¹¹²

Researchers have professional and legal responsibilities to their respondents that are embodied in the procedures of a research study.¹¹¹ The fundamental ethical principles are that respondents should be willing participants in survey research and appropriately informed about the survey's intentions and how their personal information and survey responses will be used and protected.¹¹² They should be able to decline to participate at any time with no detriment to themselves. Their privacy should at all times be respected.¹¹²

Anonymity should be guaranteed and this should be explained to the participants. This is part of the all-important process of gaining informed consent before any gathering of information

can begin.¹¹² "A prospective participant in the survey must be informed about the proposed survey before any consent to participate can be considered to be valid. They must be informed about the contents of the interviews, should understand the procedures and give their full approval. To obtain genuine consent, information should be communicated accurately and in an understandable and appropriate way. The information must include matters such as the nature and the purpose of the survey, the procedure involved and the potential risks and benefits. It is important to give potential participants enough time to ask questions, obtain answers and to reflect and give due consideration to their participation".¹¹²

CHAPTER 2

Study Aims, Design and Methods

2.1 Background to study aims and objectives

Over the past seventeen years the South African government has implemented a raft of poverty alleviation measures, with social assistance being the most extensive of those – aiming to achieve the goal of a better life for all. The social pension in South Africa is a largely unintended consequence of the country's recent history.¹¹³ The demand for social pensions is driven by poverty among the elderly as multi-generation living arrangements break down, when the young are either no longer willing or unable to care for aging parents.¹¹⁴

As of April 2012 a pension is set at R1200 (about US\$144), is paid monthly in cash to people who qualify by a means test and age, i.e.: older than 60 years of age.⁷⁰ Primarily the social pension is a tool of providing assistance to vulnerable and underprivileged members of the South African population.¹¹³

There are many problems facing indigent elderly in urban areas in South Africa. There has been a rise in “custodial grandparents” in South Africa that care for young children, mainly due to the HIV/AIDS pandemic.¹¹⁵ The social pension is a way of injecting money into households where children live.^{113,115} In most countries, social expenditures on the elderly and social expenditures on children are alternatives, but South African living arrangements mean that, at least to some extent, the pension is an instrument that simultaneously reaches both groups (i.e. children and the aged).^{113,114}

The passing of the Older Persons Act by the South African government in June 2006 emphasized “access to community-based care and support services within a supportive environment, the regulation of residential facilities for older people, and protection against abuse, ill treatment and neglect”.¹¹⁶

This study was undertaken in order to investigate the health status of old age pensioners collecting a pension at pay points in impoverished areas in the City of Cape Town.

2.2 Aims and objectives of the present study

Overall aim:

An assessment of the health status of the elderly collecting old age pensions living in low-income urban communities in the City of Cape Town

Objectives:

- a) To investigate the basic epidemiological characteristics reported by the study participants on old age pensions (e.g. demographics, socio-economic status, and literacy level).
- b) To investigate the physical living conditions and day to day living reported by the study participants on old age pensions (e.g. housing type, use of a care-giver, mobility around the home).
- c) To describe the health status reported by the study participants on old age pensions (e.g. recent illnesses, chronic disease profile, blood pressure, nutrition, mental health status).
- d) To assess the health needs reported by the study participants on old age pensions (e.g. food supply, mobility devices, hearing aids, spectacles, dentures, care-givers, medication).
- e) To establish the accessibility and utilization of health care facilities reported by the study participants on old age pensions (e.g. location of clinic, transportation to clinic, cost implication, satisfaction of services).
- f) To explore the number and extent of persons dependent on the study participants' old age pensions (e.g. children, grandchildren, extended family and friends in need of support).

2.3 Ethical aspects of the study

This study was approved on 27 October 2011 by the Committee for Human Research of the Faculty of Medicine and Health Sciences of the Stellenbosch University. The study was conducted according to the ethical guidelines and principles of the International Declaration of Helsinki¹⁰⁹, South African Guidelines for Good Clinical Practice and the Ethical Guidelines for Research of the South African Medical Research Council (SA MRC).¹¹⁰ The ethics registration number for this study is N11/09/276.

The study was endorsed on 2 November 2011 by the Western Cape Regional Executive Manager of SASSA. Permission to gain access to the pension pay points in the study was received from SASSA and the vendor paying out the grants at the various pay points, namely AllPay.

The random selection of the pensioners who participated in the study was done according to the WHO requirements for sample selection.¹¹² All structured interviews and surveys carried out by the investigator (who was also the candidate for this Masters' study) at the pension pay points were done anonymously. The candidate is an experienced community health survey interviewer who has conducted many such interviews for research purposes in the recent past.

After pensioners had collected their grant, the investigator introduced himself and invited the pensioner to join him at a quiet area in the venue where the pay-outs were being done. This was a private corner in the venue which was safe and out of earshot from other people. The pensioner was seated and provided with information about the study and was then offered an opportunity to decide if he or she would like to take part in the study. Upon agreeing to take part in the study, the consent form was explained to the pensioner. The consent form (refer to Appendix A) in the inhabitant's home language was completed by all participants in the study and a copy was handed to all participants. Consent was also obtained from inhabitants for the photographing of themselves or their walking aids (refer to Appendix C for some of the photographs taken at the pension pay points in the respective study areas). For pensioners that were unable to write, an "X" was used as a signature. The information obtained from the questionnaires is reported and discussed in Chapter 3. No conflicts of interest were declared for the present study.

2.4 Background of the study area

The study took place from November 2011 to January 2012 at eight pension points in four districts within the City of Cape Town Metropole (Table 2.1). These pension points were selected with the help of information received from officials at SASSA in order to include a representation of the areas that were predominantly black or so-called coloured and mainly housing urban elderly poor pensioners. The elderly receiving a grant at these pension points were classified as the study population for this cross-sectional study.

Table 2.1: The following pension pay-out points formed part of the study

District	Pay point	Date of data collection at pension point	Average no. of pensions paid out per day at site*
Bellville	Bonteheuwel Community Hall	16-18 January 2012	989
Gugulethu	Ikwezi Community Hall	9-11 November 2011	1035
	Gugulethu Community Hall	9-13 December 2011	1100
Mitchells Plain	Tafelsig, Thusong Community Hall	5-7 December 2011	1200
	Lentegeur Community Hall	3-5 January 2012	900
	Eastridge Sport and Recreation Centre	1-2 December 2011	720
	Beacon Valley: VGK Church	3 November 2011	540
Khayelitsha	Solomon Tshuku Hall	5-12 January 2012	1500

* *The estimated pension pay outs per site was received by AllPay (the service provider of the pension pay outs). These numbers are estimated as the averages expected to be paid out at the time of the survey with an added margin to cope with contingencies. The number of recipients varies as sometimes pensioners do not attend the pension point on the scheduled date and collect their grants from the local SASSA offices.*

All participants who took part in the study qualified to receive a grant and collected their pension from the pay points themselves. While cash payments are predominant nationally, especially in low income areas, SASSA reported that 51% of grant pay outs were made electronically at banks or Automated Clearing Bureau (ACB).⁷⁰

2.5 Design of the study

The research design employed in this study was a cross-sectional survey with both quantitative and qualitative elements, carried out by means of face-to-face interviews. The study was not originally designed with a qualitative component in mind. During the pilot study it was realised that very valuable information was *spontaneously* supplied by the participants and best efforts at capturing these comments were made at each interview. All the objectives of the present study were aimed at assessing the pensioners' health status, unmet health needs and numbers of dependents.

2.6 Sampling

Sample sites

In selecting the sites for the present study, officials from SASSA were consulted to identify pay points best representing the geographical spread of pay-points in low-income areas for black and so-called coloured persons in the Cape Town Metropole.

The pension pay-out points were selected to constitute a fair representation of the points serving the indigent portion of the city population. This geographical selection was the only effort at obtaining a representative ethnically based sample as no reference was made to ethnicity in the actual interview with each pensioner and no participant was overlooked or deselected because of race.

This spread of study sites is also chosen to take into account the different days of the month on which pensions are paid out in these areas. The selection of individuals at each pension point was done according to strict sample selection at least meeting the WHO requirements.¹¹² The eight sample sites that were earmarked to participate in this study met the following criteria:

1. Pension points situated in urban poor communities within the Cape Metropole.
2. Pension points that are situated in communities that are predominantly populated by:
(a) the African community - (b) the so called Coloured community - (c) community with a mixed population with more than one cultural grouping. If a 'mixed' model community is not easily identifiable, then the third community will again be predominantly coloured, as per the racial demographics of the aged in the Cape Metropole.
3. All participants in the study must be 60 years or older and receive a monthly old age grant.
4. Participants visiting the specified pension points will be interviewed once on their respective pension pay-out day.

Table 2.2 provides information on the characteristics of the sample sites selected for the study and the actual sampling numbers achieved.

Table 2.2: Sample site characteristics and actual sampling numbers achieved in the study

Pay point	Estimated no. of pensions paid out per day at site*
Bonteheuwel Community Hall	989
Ikwezi Community Hall	1035
Gugulethu Community Hall	1100
Tafelsig, Thusong Community Hall	1200
Lentegeur Community Hall	900
Eastridge Sport and Recreation Centre	720
Beacon Valley: VGK Church (Pilot study)	540
Solomon Tshuku Hall	1500
Total	7764

*Estimations were provided by AllPay site managers of the respective sites

The number of pensioners collecting their pensions at any given pay point varies from month to month and the numbers expected at any point in the table above are estimations provided by AllPay site managers. If these estimations are correct, then an actual systematic sample percentage of 9.1% has been achieved in this study. The true percentage probably lies closer to 10% since practicalities demand that a slight overestimation of numbers be used in order to ensure that all comers are catered for.

Sample strategy and size

The study population is defined as the proportion of pensioners receiving old-age grants who come to collect their pensions at pension pay-out points in the selected areas. This population formed the base 'pool' of persons from which the samples were selected. No attempt is made to extrapolate the findings to other classes of pensioners, such as, those who are bed-ridden or those who possess bank accounts into which their grants could be deposited electronically.

No *a priori* comparative hypotheses were constructed (that was not the intention of the survey) and therefore no calculations of minimum sample sizes were warranted as is the case for inferential statistics where the usual requirements of sufficient accuracy and statistical power are demanded. The objectives in survey methodology are first and foremost to obtain a sufficiently representative and unbiased sample to provide reliable findings and

secondly, to obtain information from enough sampling units to permit inclusion of the less common instances of the variables under investigation.¹¹⁷ In this study, sampling was approached in the same way as employed in empirical research to utilize the largest possible but realistic sample size, given the constraints of time and money.^{117,118} Sampling in such study designs intends to obtain as true a picture of the conditions to be studied as possible without the necessity of obtaining data from an entire population, for reasons of practicality and cost-effectiveness.^{81,118,119}

There are sampling size calculations for surveys designed to provide the data from which statistical estimates can be inferred with predetermined accuracy and confidence intervals, especially surveys for the prediction of national and household censuses.^{118,119,120} There are however no sampling size calculations available to determine optimal sampling sizes for once-off cross-sectional surveys providing information on the existence and extent of characteristics such as health status. There are also no direct methods to estimate the sample sizes required by systematically sampled surveys.

In this study a systematic sampling strategy was used with random starting points. Systematic sampling is a probability sampling selection method in which the sampling units are acquired by "selecting every k th element of the population where k is an integer greater than 1. The first number of the sample must be selected randomly from within the first k elements".¹²⁰ Probability sampling allowed statistical analysis of the results obtained from the survey. Systematic sampling is a popular method of selection where the sampling units are too numerous to list on an individual basis.^{118,119}

The sampling strategy for the present study was a two-stage one. In the first stage of the sampling, the four study sites (eight pension pay points) were selected to be as representative of pensioners living in recognized urban poor communities in the City of Cape Town. The second stage of sampling was the selection of pensioner participants in the queue by means of a systematic sampling strategy with $k=10$. Thus in the present study, a dice was rolled to determine the position of the first participant in the queue and thereafter every 10th pensioner queuing to receive a grant was asked to participate in the study. While none of the pensioners approached to participate in the study declined, in that instance the strategy would have been that the next person would then be invited to participate in the survey and the systematic sampling adjusted to move on by one person. Many pensioners requested to join the survey, but they were all turned down to avoid volunteer bias.

2.7 Research Tools

The use of questionnaires is an indispensable tool in community health research.^{118,119,121} Findings in community health studies are often based partly or completely on data obtained by means of questionnaires or structured interviews (so-called 'verbal questionnaires') with data captured on data capture forms (Appendix B). Information on outcomes, exposures and confounding variables are collected in this way.^{119,122}

The questionnaire was piloted on 3 November 2011 at the Beacon Valley pay point in Mitchell's Plain with 25 pensioners (as indicated in Table 2.2). No misunderstood questions or other problems were encountered and thus no modifications were made to the research tool. The data collected from the pilot study was therefore pooled with data collected in the actual study.

The questionnaires were administered by means of structured interviews by the candidate. The interviews were conducted in any of three official languages prevalent in the area, namely isiXhosa, Afrikaans and English, depending on the home language of the respondent.

A large amount of qualitative data had been gathered during the interviews and noted in abbreviated form on the data capture sheet for each respondent. This qualitative data included the participant's freely expressed opinions and attitudes about a variety of subjects, such as their health, their experiences of the health services, family members, and their day to day needs.

During the survey, the pensioner was asked to place his or her hand in a box and choose a pill bottle. Three labelled pill bottles that are routinely used at clinics were in the box. The pensioner was asked to read the label of the pill bottle. This exercise was completed to establish if pensioners were able to read the directions of their medication. This activity was not done with pensioners who were blind or informed the interviewer that they were illiterate.

A blood pressure reading of the pensioner was taken during the survey using a battery operated digital blood pressure device. Blood pressure was measured using an electronic, automatic blood pressure monitor (Rossmax brand, model number MJ150f). The electronic device used pulse wave oscillometry and a proprietary algorithm to estimate blood pressure. Individual blood pressure measurement commenced after the person had given informed consent, the inclusion criteria were satisfied, and personal information was obtained.

Diastolic and systolic blood pressures were recorded once, on the left arm only. The device is designed for use on adults only, not new-borns or infants. All pensioners were seated comfortably at a table when the blood pressure reading was taken. If the pensioner was wearing a jersey or clothing covering the arm, it was removed or the sleeve was loosely rolled up. The pensioner was asked to rest his or her arm on the table and relax for about five minutes before the blood pressure measurement was taken. The centre of the cuff was placed at the same height as the heart of the pensioner. The pensioner was asked to remain still and keep quiet during the measurement. The blood pressure reading was then recorded on the questionnaire. The reading was not repeated as the time used for the interview (taken together with the completion of the questionnaire) would have been too long for the more frail elderly to sustain. The blood pressure measurement was only taken as an indication and not as an essential variable for clinical treatment decisions.

The Geriatric Depression Scale (GDS) is a 30-item self-report assessment used to identify depression in the elderly. The scale was first developed in 1982 by J.A. Yesavage.¹²³ The GDS questions are answered "yes" or "no". This simplicity enables the scale to be used with the ill or moderately cognitively impaired individuals. The scale is commonly used as a routine part of a comprehensive geriatric assessment. One point is assigned to each answer (blocks shaded grey below) and the cumulative score is rated on a scoring grid. The grid sets a range of 0-9 as "normal", 10-19 as "mildly depressed", and 20-30 as "severely depressed". The GDS has not been validated for use in groups with cultural backgrounds (such as in South Africa) that are different from the first world environment where the test was developed. Although no other test exists that can be used, the results reported in the study need to be interpreted with great caution.

2.8 Qualitative information

During the pilot phase of the study, it was apparent that many of the participants wanted to provide more detailed information on their particular situation and their concerns. After consulting with the supervisor of the study, the researcher decided to note, in condensed form, the major points that the respondents raised spontaneously. No effort was made to elicit information from those who did not share qualitative information on their own accord. These notes were transcribed and sorted into 'themes' of similar content. Table 3.19 in the results section reports the themes of the qualitative comments received from respondents. The following themes were used to group the qualitative information:

1. Gender issues,
2. Being old,

3. Transport and getting around,
4. Pension applications and ID document problems,
5. Lack of education,
6. Employment issues,
7. Dependency in old age and the need for care,
8. Caregiver responsibility,
9. Housing and sanitation issues,
10. Dealing with the youth,
11. Gangs and crime,
12. Health services,
13. Special needs - eye health and vision,
14. Special needs - ear health and hearing,
15. Special needs - walking aids (walking stick),
16. Special needs - wheelchair,
17. Special needs - dental issues,
18. Financial needs,
19. Mobility and self-sufficiency,
20. Social integration and social issues,
21. General health status of respondent,
22. Health status of others in the home.

The allocation of each comment to one of the 22 themes was done by the researcher and checked by the supervisor. In the few cases of uncertainty, consensus on the classification of the comment was reached by the researcher and the supervisor. The mood or state of mind reflected in the qualitative comments was also adjudged to be basically positive or negative in tone and this was noted and the totals aggregated. Again, consensus decision-making was used to assess the tone of the comments. The percentage of comments with a positive or negative tone was calculated for each theme. The rationale for this was that the comments could represent a respondents feeling. It should be noted that the allocation of positive or negative tone evaluation could be open to assessor bias, so every effort was made to clarify all instances of disagreement so that the candidate and supervisor agreed on the final allocation.

2.9 Data analysis

Data were captured into a Microsoft Excel spread sheet and transferred by a statistician at the Centre for Statistical Analysis at the University of Stellenbosch into Statistica version 9.0

(StaSoft Inc. 2009, USA) for further analyses. The candidate entered the data himself and verified all entries with the statistician. Samples of data entry forms were cross-verified by the supervisor. Data integrity was monitored by the study supervisor and the statistician during the analysis and reporting of the data.

The statistical analyses were selected in conjunction with and the data analysed by Professor M. Kidd of the Centre for Statistical Services at the University of Stellenbosch. The data were cross tabulated and Chi-square analyses were carried out as first order non-parametrical analyses. For ordinal variables Mann-Whitney U-test calculations were carried out.

CHAPTER 3

Results of the Study

In this chapter, the quantitative results from the survey are reported first, followed by a summary of the qualitative observations and information volunteered by the participants. The data gathering from pensioners at the various pension points took place on the pension pay out days between November 2011 and January 2012. All pensioners randomly selected and asked to take part in the study, agreed to complete the questionnaire. The response rate for the study was 100% since no participant approached to participate refused to do so. Table 3.1 provides a breakdown of the respondents who took part in the study:

Table 3.1: Participants in the study from the respective pay points

District	Pay point	Number actually participated in the study per site	Percentage	Total per district
Bellville	Bonteheuwel Community Hall	82	12	82
Gugulethu	Ikwezi Community Hall	83	12	167
	Gugulethu Community Hall	84	12	
Mitchells Plain	Tafelsig, Thusong Community Hall	79	11	266
	Lentegeur Community Hall	82	12	
	Eastridge Sport and Recreation Centre	80	11	
	Beacon Valley: VGK Church	25	4	
Khayelitsha	Solomon Tshuku Hall	188	27	188
Total participants		703	100	

3.1 Demographic information of participants in the study

The median age of the participants in the study was 68 years and the mean 69.55 years (standard deviation 6.41 years). The youngest participant in the study was 60 years of age and the oldest 90 years (Table 3.2).

Table 3.2: Gender ratio of sample for age categories

Age category	No. of males	No. of females	Gender ratio (no. males/ 100 females)
60-69	165	254	64.96
70-79	96	113	84.96
80-89	31	43	72.09
90-100	1	0	-
Overall	293	410	71.46

Summary statistics of the data in Table 3.2 provided the following means and standard deviations (Table 3.3).

Table 3.3: Summary age statistics of sample

Gender	No. of respondents	Mean age (yr)	Standard deviation (yr)	Standard error (yr)	95% confidence interval (yr)
Female	410	69.35	6.36	0.31	68.72 - 69.96
Male	293	69.85	6.46	0.38	69.11 - 70.59
Total group	703	69.56	6.41	0.24	69.09 - 70.03

The difference in numbers between the two genders was statistically significant, with significantly more women than men in the sample (Chi square test, $p < 0.01$). The gender ratio of sample for age is reported in Table 3.4.

The statistical analysis of the age difference between genders is illustrated in Figure 3.1.

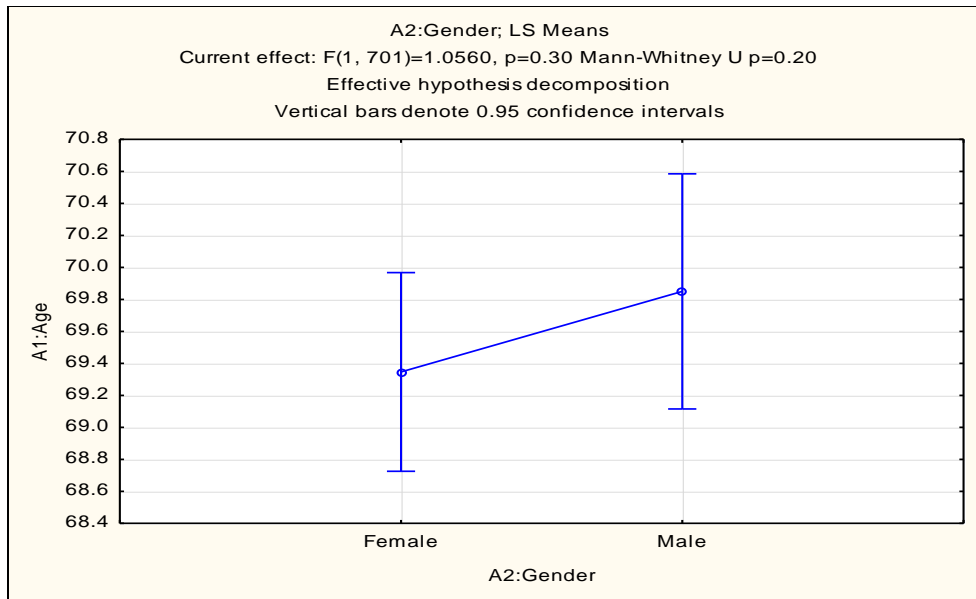


Figure 3.1: Mann-Whitney analysis of age difference between genders

The normal probability plot (Figure 3.2) revealed the following information when the age difference between genders was tested.

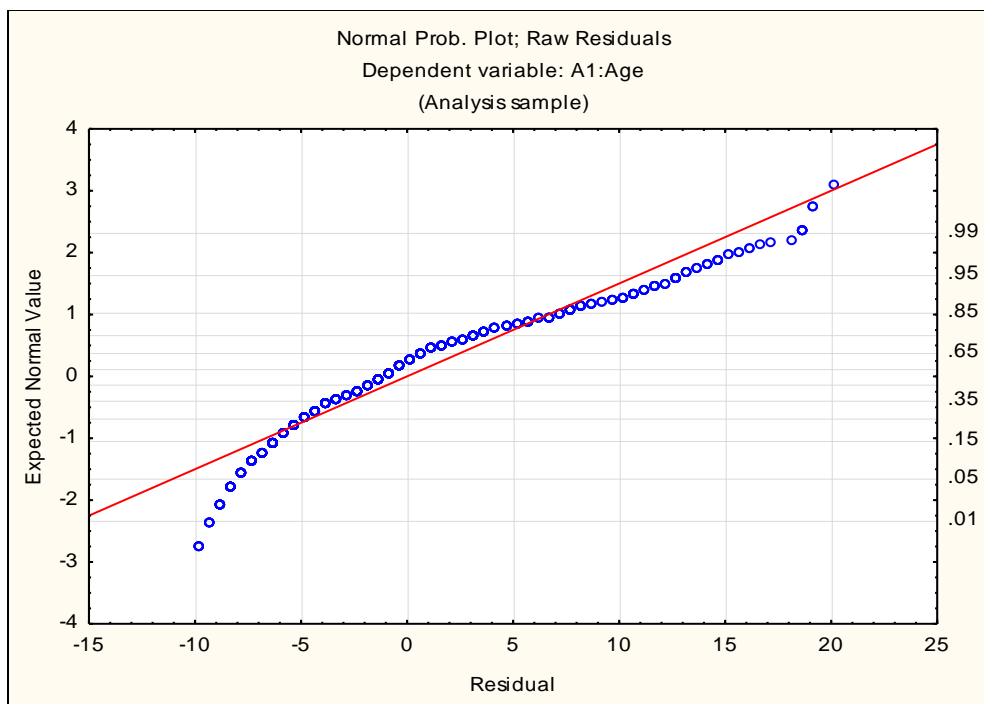


Figure 3.2: Normal probability plot, analysis of raw residuals

As can be seen from the analysis above (Figure 3.1. and 3.2), there was no difference in age between the male and female members of the sample. Levene's test for homogeneity of variances for the analysis of age vs. gender with 1 and 701 degrees of freedom produced a

p-value of 0.94. There was therefore no significant difference. The marital status of participants in the study is reported in Table 3.4.

Table 3.4: Marital status of the participants in the study

Gender	Marital status			Total number
	Widowed (number, %)	Single (number, %)	Married* (number, %)	
Female (row %)	217 52.93%	128 31.22%	65 15.85%	410
Male (row %)	168 57.34%	72 24.57%	53 18.09%	293
Total number	385	200	118	703

*Denotes any kind of permanent co-habiting arrangement, traditional or legal marriage

Further analysis on the marital status of participants in the study, by means of a Chi square test revealed a p-value at the 95% confidence level of 0.149 (Figure 3.3). Therefore, there were no differences in the marital status between the males and females in the sample.

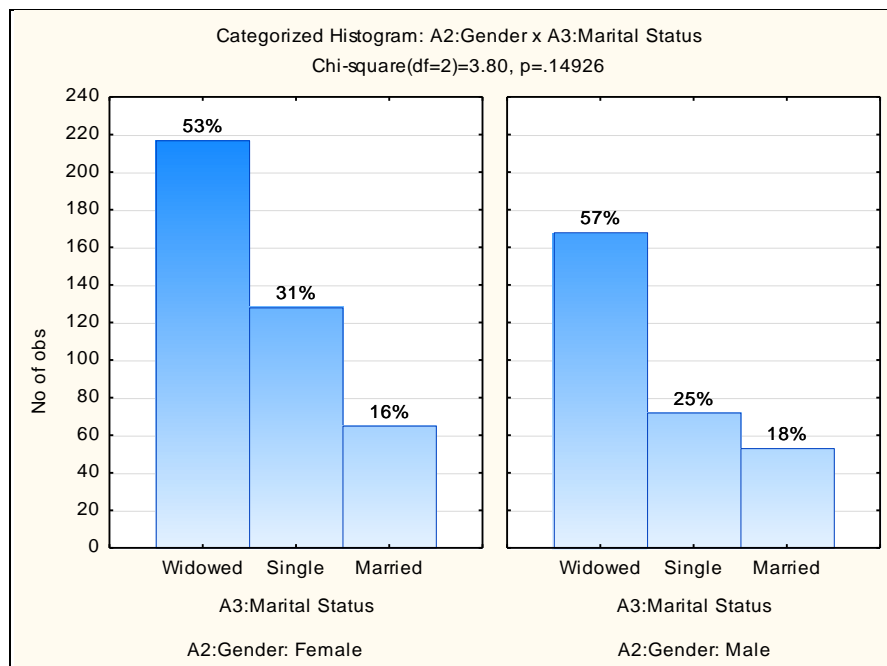


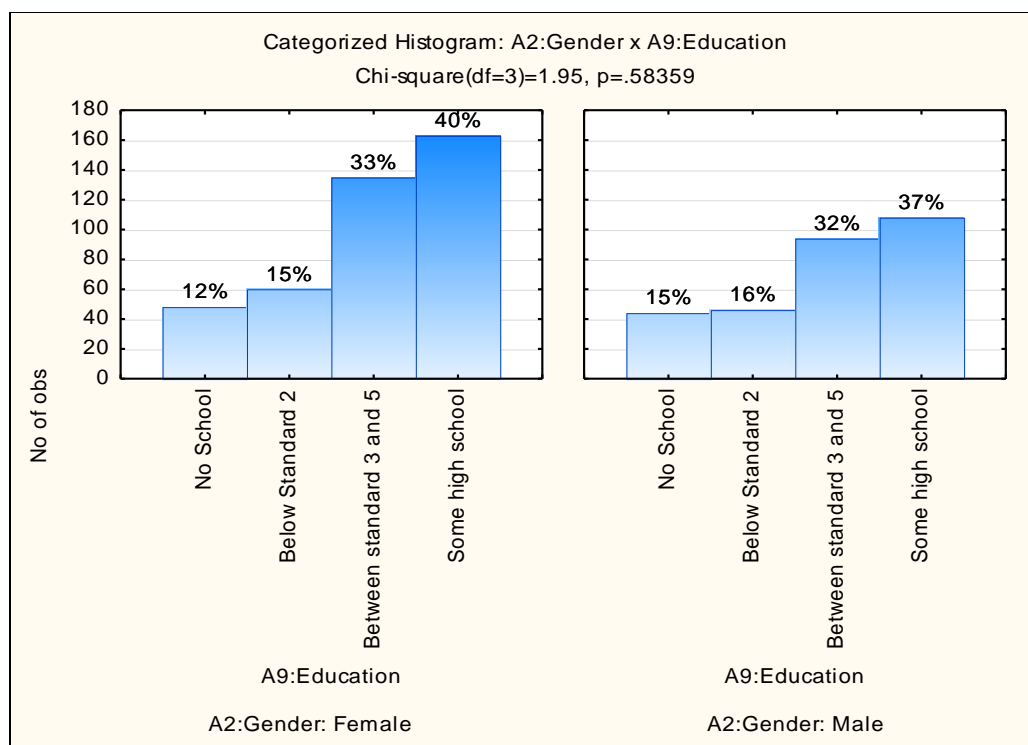
Figure 3.3: Breakdown of marital status by gender

The educational status of the respondents that participated in the study is presented in Table 3.5. Note that a total of 464 (66%) of respondents reported that they could not read well and 499 (71%) of the pensioners reported that they are unable to write well (data to be reported later in this section).

Table 3.5: Breakdown of educational level by gender

Gender	Educational standard achieved				Total number
	No schooling	Up to Standard 2 (Grade 4)	Standard 3-5 (Grade 5-7)	Some high school education (Grade 8-12)	
Female (row %)	48 11.82	60 14.78	135 33.25	163 40.15	410
Male (row %)	44 15.07	46 15.75	94 32.19	108 36.99	293
Total number	92	106	229	271	703

A statistical comparison of the educational levels by gender is illustrated in Figure 3.4. The Chi square test produced a p-value at the 95% confidence level of 0.584 and there were therefore no differences in the educational status between the genders in the sample.

**Figure 3.4:** Analysis of educational level of respondents by gender

3.2 Access to an old age pension and the pension point

Ninety-seven percent of participants in the study reported waiting at least six months from the date of the application, before receiving their pension. Three percent (23 participants)

who found it difficult to access a pension, waited for at least two years before receiving their pension. All of these pensioners could not access their pension due to the lack of a green bar-coded South African identity book. The maximum number of years that a pensioner reported collecting a pension was 13 years with a mean of 7.5 years and a standard deviation of 3.8 years.

A reported 55% of pensioners walked to the pension point to receive their pension, while 23% used public transport such as a taxi or bus and 22% travelled by car. It should be noted that all of those who travelled by car, did not own a car, but were rather unable to walk to a taxi or bus rank and had to be assisted in getting to the pension point. This means that a car was hired from a hire car system that offered a door to pension point service. This was the case in Gugulethu, where pensioners pay R20.00 (US\$2.50) for a return trip from their home to the pension point.

3.3 Economic Status of participants in the study

All 703 participants in the study expressly stated that they were dependent on the pension from the South African Social Services Agency and would not have been able to afford their daily expenses if the pension was discontinued. An overwhelming majority (687 or 98%) of pensioners reported that the pension of R1080.00 (US\$135) per month is their only source of income. All 16 (2%) respondents who reported having other sources of income were employed part time (Figure 3.5). This income was considered as “extra money” by the pensioner to supplement their living expenses.

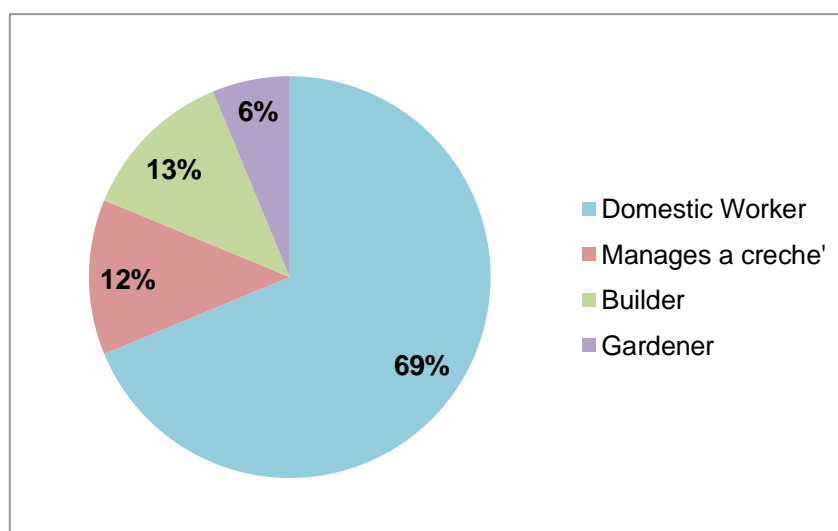


Figure 3.5: The type of part time employment of the 16 pensioners who had part time work.

3.4 Domicile of participants in the study

All the participants in the study reported living in some form of freestanding (single-family) home, but not all homes were of a formal brick-and-mortar kind. Table 3.6 describes the type of homes that pensioners lived in. A reported 83% of pensioners had electricity at home. Forty-eight percent of pensioners reported having a problem moving around in their home. Thirty six percent of pensioners had a cell phone and 61% of pensioners had a radio in the home.

Table 3.6: The type of housing that pensioners in the study lived in

Description of home	Number	Percentage
Informal dwellings:		
Shack	195	28
Shack in the back yard of a state funded house	102	15
Formal dwellings:		
State funded low-cost house	190	27
State funded flat	25	4
House that is rented	126	18
House that is owned	65	9
Total	703	100

All respondents reported that the dwelling had a toilet and a water supply. However, when asked to describe where the toilet and tap were located, only 32% of respondents reported the toilet being inside the house while 40% reported having a tap inside the home (Figure 3.6). Fifty-two percent of homes have a formal bathroom with a tub or shower, while the other 48% of pensioners use a plastic dish or bucket when washing themselves.

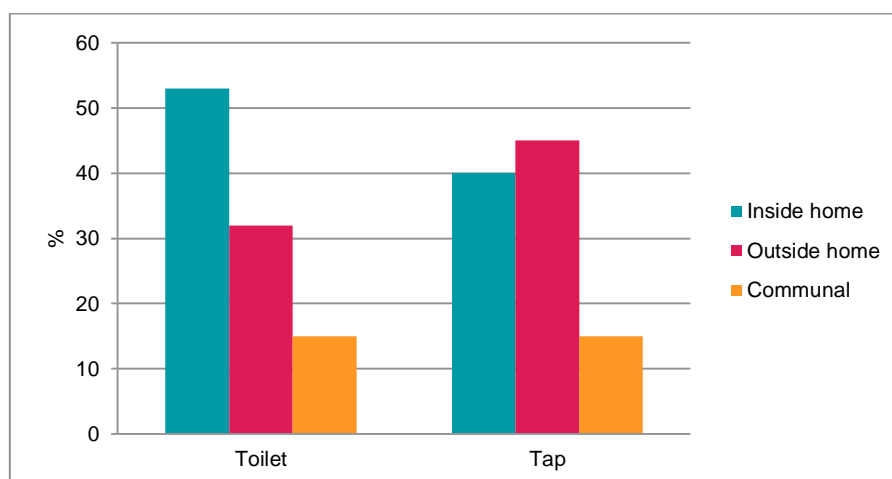


Figure 3.6: Location of toilet and tap that pensioners use daily

3.5 Day to day living arrangements of participants in the study

Two percent of respondents had caregivers who are family members. None of these family members were paid to look after the pensioners. Table 3.7 describes the reported assistance required by pensioners.

Table 3.7: Reported assistance required by pensioners in the study

Assistance required with:	Number	Percentage (n=703)
Bathing (washing him or herself)	195	28
Using the toilet	234	33
Dressing	196	28
Grooming	138	20
Preparing food	185	26
Cleaning the home	202	29
Washing clothes	272	39
Reading letters (n=559)*	246	44
Taking medication	240	34

*65 blind persons and 190 persons deemed functionally illiterate (schooling below Grade 4) were excluded in this calculation. 19 persons were both blind and functionally illiterate.

Table 3.8 and Figure 3.7 reports the number of daily activities pensioners in the study reported needing assistance with. Statistical analysis showed no difference between the genders on the number of activities needing assistance (Mann-Whitney U test, $p=0.38$), but showed a statistical difference between age and number of activities needing assistance ($p=0.027$).

Table 3.8: Numbers of respondents needing assistance with activities of daily living

No. of activities needing assistance	No. of respondents	% out of total group (n=703)	Age range	Mean (standard deviation)
None	33	4.7	61 - 88	70.70 (7.61)
One activity	182	25.9	60 - 88	69.91 (6.38)
Two activities	168	23.8	60 - 88	69.55 (6.02)
Three activities	170	24.1	60 - 85	69.93 (6.25)
Four activities	77	10.9	60 - 86	68.49 (5.68)
Five activities	46	6.5	61 - 77	67.00 (4.49)
Six activities	19	2.7	60 - 83	68.00 (6.06)
Seven activities	4	0.6	66 - 69	68.00 (1.41)
Eight activities	3	0.2	68 - 80	72.33 (6.65)
Nine activities	1*	0.1	67	-

* This was a widowed male respondent aged 67 years

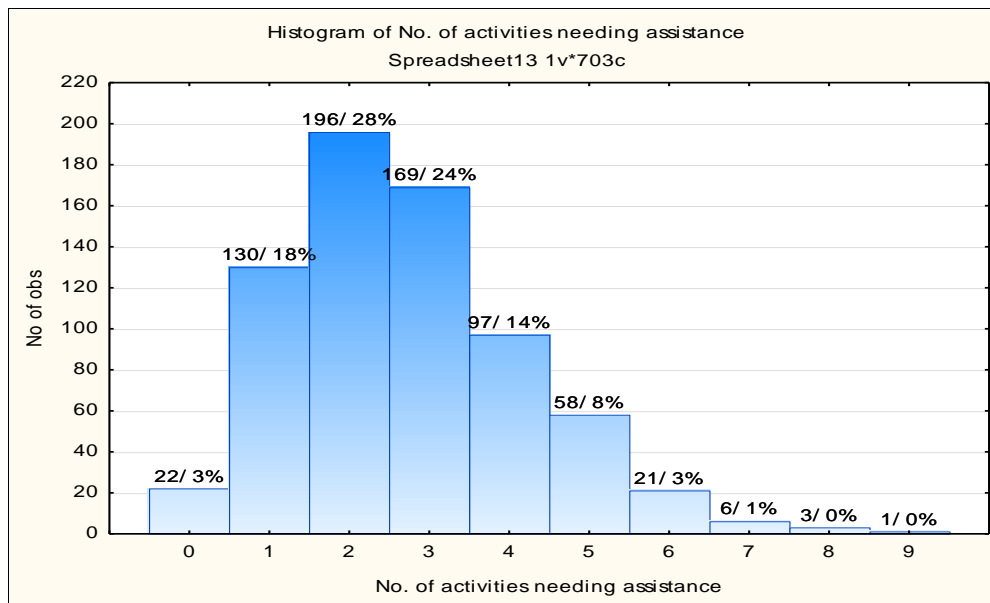


Figure 3.7: Number of activities pensioners required assistance with daily

Ninety eight percent of pensioners go to the grocery store themselves on the day of the pension pay out. A reported 24% of pensioners walk and 76% use a taxi or bus to commute to the nearest shopping centre to purchase groceries. One hundred and forty two pensioners in the study are members of a senior citizen club.

3.6 Health status, utilization of services and health needs of pensioners in the study

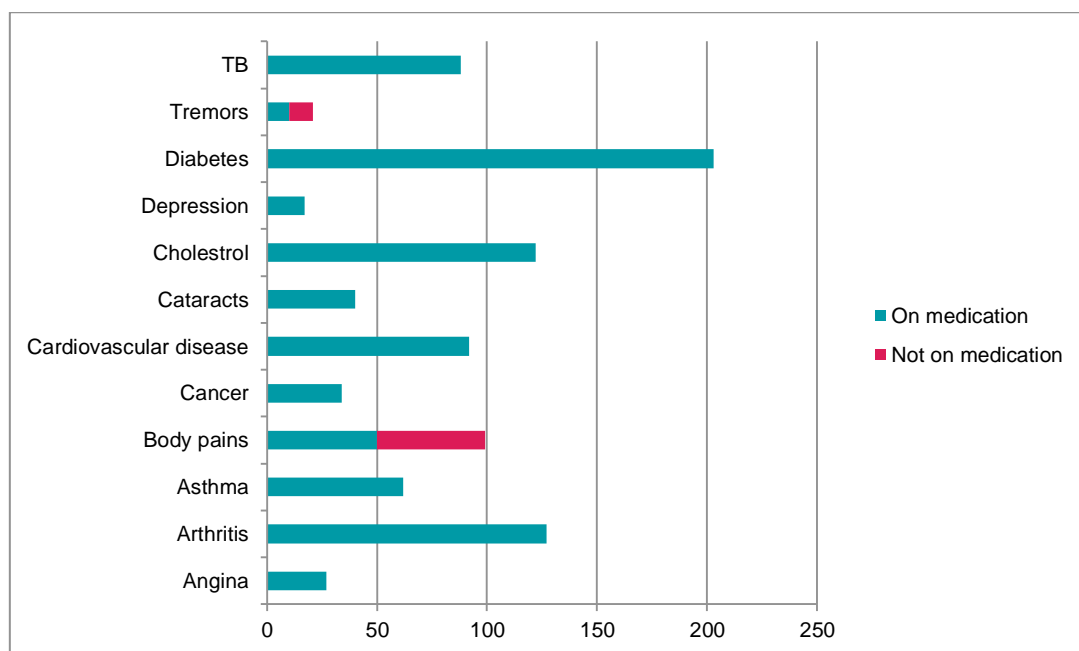
An attack of diarrhoea was reported by 32% of pensioners in the 14 days preceding the survey. The definition of the WHO was used in this study namely, “the passing of three or more liquid stools per day or more frequently than is normal for the individual.” There were no gender differences in the number of attacks of diarrhoea reported (Mann-Whitney test, $p=0.23$). The reported attacks of diarrhoea also did not show a statistical relationship with the number of persons living in the dwelling (F-test, $p=0.16$) or the number of meals eaten per day as a rough indication of under-nutrition (Pearson p -value=0.14), but did show a relationship between the number of activities of daily living needing assistance and diarrhoea (Pearson p -value=0.04).

Only 121 (17.2%) of the 703 pensioners in this study reported having not being diagnosed with an illness needing chronic medication (Table 3.9).

Table 3.9: Reported number of illnesses requiring chronic medication

Number of chronic illnesses	Number of pensioners	%
0	121	17.2
1	275	39.1
2	206	29.3
3	77	10.9
4	21	3.0
5	4	0.6

Twenty-four percent of pensioners reported having had TB at some point in the past. A reported 30% of pensioners lived with people who were suffering from TB and 19% of participants lived with people who were HIV positive. Figure 3.8 describes the chronic illnesses that pensioners reported.

**Figure 3.8:** Types of chronic illnesses that pensioners reported suffering from, with an indication of treatment status of the illnesses

A total of 171 pensioners (24.3%) reported that they had been hospitalized during the 6 months preceding the survey. Thirty-six percent of respondents reported suffering from a heart attack in the past. Twenty-two percent of pensioners previously suffered a stroke. Figure 3.9 illustrates the type of conditions that caused respondents to be admitted to hospital.

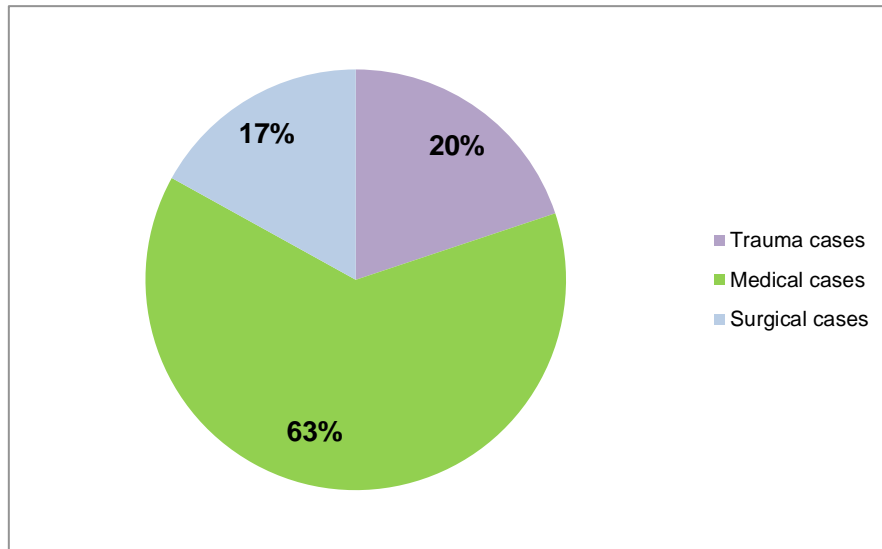


Figure 3.9: Illustrates the types of conditions leading to hospitalization in the past 6 months

Examples of trauma cases were stab wounds, sprained ankles, motor vehicles accidents, bone fractures and burns. Surgical cases reported were eye surgery, dialysis and coronary artery bypass surgery. The reported cases described as asthma, chest pains, heart attack, diabetes, hypertension, hypotension, stroke, tuberculosis and seizures were categorized as medical cases.

Fourteen percent of pensioners reported having difficulty controlling their bladder and Figure 3.10 illustrates the number of times per day participants reported visiting the toilet.

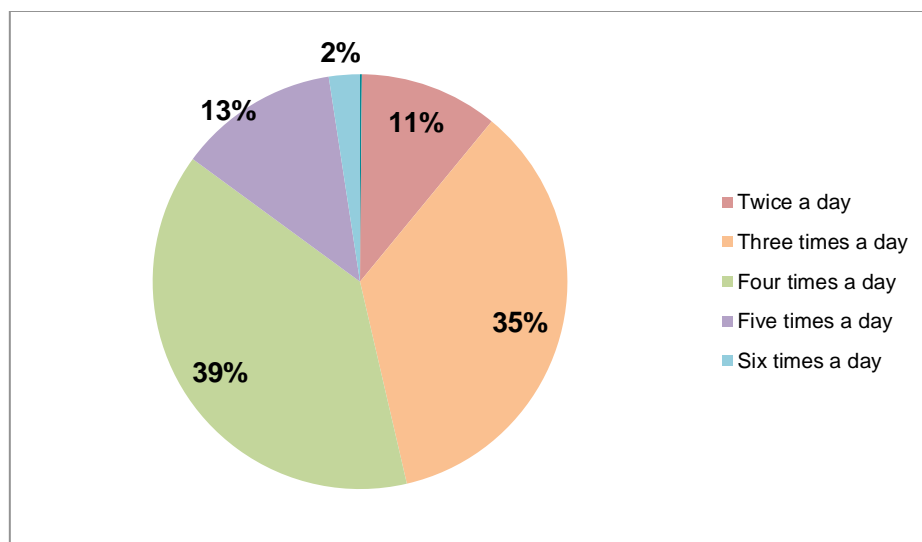


Figure 3.10: Reported frequency of toilet visits per day

The number of meals reported to be eaten per day by pensioners were: 1 meal (13%), 2 meals (75%), 3 meals (10%) and 4 meals (2%). Thirty-eight percent of pensioners reported that they were advised by a health professional to be on a special diet. All these pensioners felt that the food products recommended as part of the diet were expensive and difficult to find in stores available to them.

Nine percent of the study population reported being completely blind, while 58% reported that they were unable to see well. Thirty percent of pensioners reported wearing spectacles all of the time and 19% some of the time. The median time since pensioners last went for an eye test was 11 years. A reported 48% of pensioners felt that their spectacles needed to be changed. When asked, "where can one go for an eye test", only 17% of pensioners responded a clinic or hospital, while 83% did not know. During the survey, pensioners (excluding the blind and illiterate) were asked to read out aloud the directions on the label of a pill bottle, but 42% percent of literate pensioners were unable to do so due to poor eyesight.

A reported 56% of participants in the study reported having trouble with their hearing but none of the 703 participants have ever had a hearing test.

In the two months preceding the survey, 2% of pensioners visited a dentist. Seventy four percent of respondents had reported that they suffered from toothache, while 39% of pensioners had trouble chewing. Sixty five percent of participants reported that they were in need of dentures.

A reported 102 (14.5%) respondents said that they use a walking aid. Walking aids included wheel chairs (3%), crutches (4%) and walking sticks (7.5%). Walking aids were needed by 464 (66%) of respondents, with 77% of pensioners stating that they required a wheel chair. Seventeen percent of pensioners admitted to having fallen two or more times in the month preceding the study,

Forty nine percent of pensioners reported that they smoke tobacco in the form of cigarettes, while 15% gave up smoking. Alcohol was consumed by 71% of pensioners.

When sick, 4% of pensioners visited a private general medical practitioner with a practice in their community and paid an average of R150.00 (about US\$18.75) for a consultation. The rest of respondents visited the community clinic where the basic service was free. Six percent of pensioners use traditional medicine to treat illnesses that they suffer from. Of the

total group, 93% of pensioners walked to the clinic and 7% commuted by taxi. An average of R10.00 (US\$1.42) was paid for a return trip to the clinic. A reported 29% of the study population previously called for an ambulance during an emergency.

The minimum waiting time at the clinic for medication was reported to be 2 hours (13%) and maximum 5 hours (11%). Sixty-two percent of pensioners reported waited for three hours and 14% waited for 4 hours at the clinic. A reported 14% of pensioners had to go back more than once to collect chronic medication from the clinic. The pensioners who reported waiting only two hours went to the clinic at around 4h00 and waited outside until 7h00 when the doors opened. The pensioners waiting longer reported being reliant on public transport causing them to arrive later and subsequently having to wait longer inside the clinic. Total waiting times for the outing to the clinic were not asked, but may not have been very different whether the person went very early and waited outside longer or arrived later and waited inside.

Four percent of pensioners purchased medication to treat their illnesses. A minimum of R100.00 and maximum of R200.00 with a standard deviation of R52.50 was paid for the medication. Ninety six of pensioners suffering from illness collect medication monthly, free of charge from their community clinic. Eighty-eight percent of participants in the study reported that staff was not helpful at the clinic and 90% were not satisfied with the services received at the community clinic. It should be noted that the opinions of the clinic staff on this topic have not been explored in this study.

Two percent of pensioners could recall that health promoters or community health workers had visited their home to speak to them about health issues.

Although the definition of normal blood pressure varies considerably, the upper limits of normal blood pressure is a systolic pressure of no more than 139 mmHg and a diastolic pressure of no more than 89 mmHg for non-elderly adults, but these values are not necessarily applicable to the elderly.¹²⁴ The upper limit of normal blood pressure for a healthy elderly person is considered to be 140 mmHg systolic and 90 mmHg diastolic.¹²⁵ The data for blood pressure readings were tabled in incrementally increased values so that different interpretations of 'normal' could be assessed (Table 3.10).

Table 3.10: Blood pressure readings from pensioners in the study

Blood pressure readings	<i>n</i> =703	%
<120/80	112	15.9
>120/80	147	20.9
>130/90	188	26.7
> 140/90*	114	16.2
>150/90	142	20.2
Total	703	100.0

*Target value of pressure classified as hypertension in the elderly¹²⁵

3.7 Geriatric Depression scale

Thirty percent of pensioners in the study felt that they have been ill-treated by their family members. This included both mental and physical abuse, with 20% of participants admitting to being beaten by a family member. In order to assess these circumstances and the psychological impact of their lives, a field assessment of their state of depression was carried out.

The Geriatric Depression Scale (GDS) is a 30-item self-report assessment used as a basic screening measure and to identify depression in the elderly (see Chapter 2 for details). Table 3.11, provides grouped results of the participants in the study. The shaded blocks are interpreted as described in Chapter 2.

Table 3.11: Reported answers to questions from the Geriatric Depression Scale. The blocks shaded grey

	Yes (<i>n</i> =703)	%	No (<i>n</i> =703)	%
Are you basically satisfied with your life?	458	65.1	245	34.9
Have you dropped many of your activities and interests?	361	51.4	342	48.6
Do you feel that your life is empty?	562	79.9	141	20.1
Do you often get bored?	506	72.0	197	28.0
Are you hopeful about the future?	139	19.8	564	80.2
Are you bothered by thoughts you cannot get out of your head?	537	76.4	166	23.6
Are you in good spirits most of the time?	207	29.4	496	70.6
Are you afraid that something bad will happen to you?	445	63.3	258	36.7

Do you feel happy most of the time?	272	38.7	431	61.3
Do you often feel helpless?	402	57.2	301	42.8
Do you often get restless and fidgety?	334	47.5	369	52.5
Do you prefer to stay home, rather than going out and doing new things?	366	52.1	367	52.2
Do you frequently worry about the future?	366	52.1	337	47.9
Do you feel you have more problems with memory than most?	376	53.5	327	46.5
Do you think it's wonderful to be alive now?	268	38.1	435	61.9
Do you often feel downhearted and blue?	439	62.4	264	37.6
Do you feel pretty worthless the way you are now?	399	56.8	304	43.2
Do you worry a lot about the past?	419	59.6	284	40.4
Do you find life very exciting?	231	32.9	472	67.1
Is it hard for you to get started on new projects?	429	61.0	274	39.0
Do you feel full of energy?	278	39.5	425	60.5
Do you feel that your situation is hopeless?	480	68.3	223	31.7
Do you think that most people are better off than you are?	515	73.3	188	26.7
Do you frequently get upset over things?	486	69.1	217	30.9
Do you frequently feel like crying?	526	74.8	177	25.2
Do you have trouble concentrating?	512	72.8	191	27.2
Do you enjoy getting up in the morning?	201	28.6	502	71.4
Do you prefer to avoid social gatherings?	510	72.5	193	27.5
Is it easy for you to make decisions?	175	24.9	528	75.1
Is your mind as clear as it used to be?	147	20.9	556	79.1

When assessed on each participant's complete set of answers (Figure 3.11), there was no statistical difference between gender and individual depression scores (Mann-Whitney U, $p=0.21$).

Figure 3.11: Analysis of participant's responses in the Geriatric Depression Scale

A2:Gender; LS Means (Spreadsheet2 in pensioner study.stw) Current effect: $F(1, 701)=3.6893, p=.05517$ Effective hypothesis decomposition						
Cell No.	A2:Gender	Geriatric depression scale Mean	Geriatric depression scale Std.Err.	Geriatric depression scale -95.00%	Geriatric depression scale +95.00%	N
1	Female	19.08293	0.396568	18.30432	19.86153	410
2	Male	20.26286	0.469112	19.34177	21.18383	293

According to results from the geriatric depression scale, 64% of pensioners were classified as being severely depressed (Table 3.12). In addition, 28% of respondents described themselves as forgetful.

Table 3.12: Classification of study participants according to the Geriatric Depression Scale

Score	Indicates	Number	Percentage
0-9	Normal	112	16
10-19	Mild depression	135	20
20-30	Severe depression	456	64

Figure 3.12 illustrates that there were no gender differences when the scores obtained on the depression scale were classified into categories, expected as per the scale methodology (Chi square test, $p=0.114$).

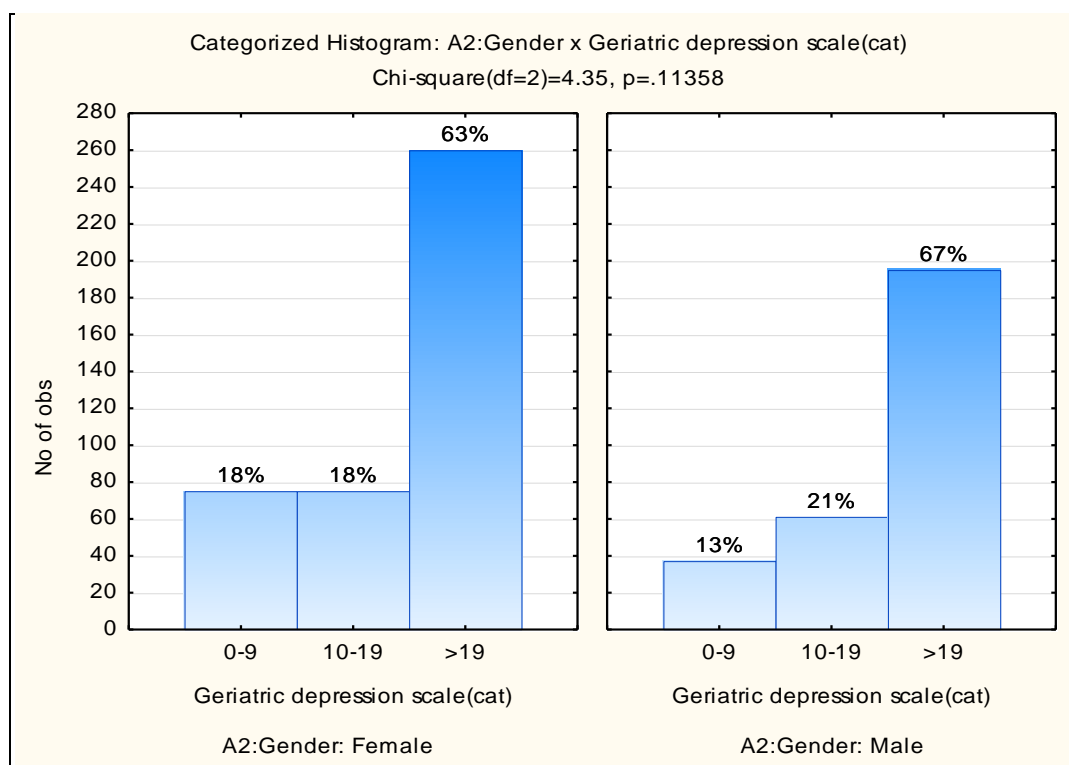


Figure 3.12: Classified scores from the depression scale - gender differences

It should be noted that the GDS has not been validated for use in groups with cultural backgrounds that are different from the first world environment where the test was developed. Although no other test exists that can be used, the results reported in the study need to be interpreted with great caution.

3.8 Persons living with pensioners

All pensioners in the study responded that members of their households all benefit from their pension. Table 3.13 describes the people sharing the household with pensioners.

Table 3.13: Demographics of persons living in the household with the pensioner

Characteristic	Number	Percentage (N=1808)
<i>Relationship to the pensioner</i>		
Husband	63	3
Wife	49	3
Son	88	5
Daughter	183	10
Sister	54	3
Brother	8	0
Daughter in law	34	2
Son in law	46	2
Niece	7	0
Nephew	4	0
Daughter's boyfriend	24	1
Son's girlfriend	44	2
Grandchild	1236	67
Friend	3	0
Cousin	3	0
<i>Age (years)</i>		
0-9	582	32
10-19	683	37
20-29	132	7
30-39	258	14
40-49	16	1
50-59	44	2
60-69	83	4
70-79	41	2
80-89	7	0

The old age pension amounted to R1140 per month at the time of the survey after deduction of administration fee. The total number of dependents sharing in the pension received by the

participants in this study was 1808 persons while the number of pensioners was 703. Thus the total amount of money paid out for old age pensions to the participants for the month included in the survey was R801 420 which was shared by 2511 persons or R319.16 per person.

Table 3.14: Employment status and financial contribution of dependents living in the household with the pensioner

<i>Employment Status</i>	Number	Percentage
Unemployed	337	18
Employed	150	8
Pensioner	127	7
Child at school	870	47
Child at home	362	20
<i>Contribute to household</i>		
Yes	283	15
No	330	18
Not applicable (Child)	1232	67
<i>How much is the contribution?</i>		
R0	1583	85
R1000	170	9
R1200	1	0
R1500	40	2
R2000	36	2
R2500	4	0
R3000	8	0

Twelve pensioners (2%) received money for their personal use from family members who do not live with them. Figure 3.13 illustrates the amount of money provided monthly to the pensioners. Eight of the 12 pensioners received money from their daughter, two from their son and two from their grandchildren.

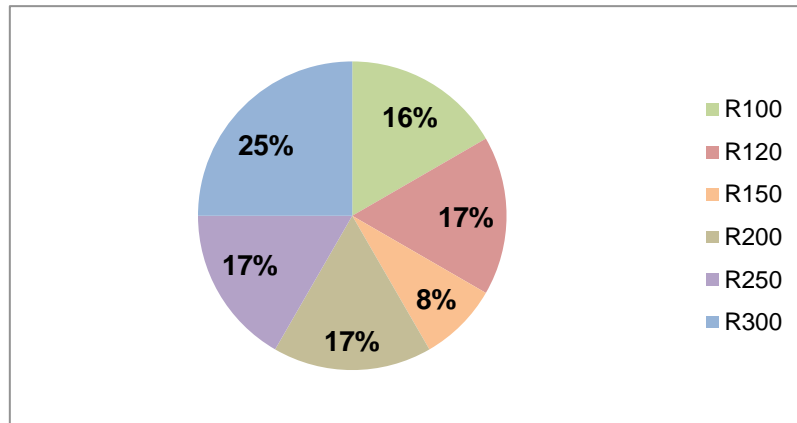


Figure 3.13: The amount contributed by family members (n=12) per month to pensioners

3.9 Pensioner headed households that are caring for children

A reported 266 of the 703 households (38%) have pensioners who care and provide for 471 grandchildren under the age of 18 years with no other adults present (Figure 3.14). Only 21% of the 266 pensioners reported receiving assistance from neighbours or other family members by looking after the child or children from time to time. These neighbours and family members however did not contribute financially to the day-to-day living expenses of the children concerned. Ninety-six percent of the children (471) live with pensioners for the entire year, while 4% of grandchildren go to their parents for 1 to 2 months of the year.

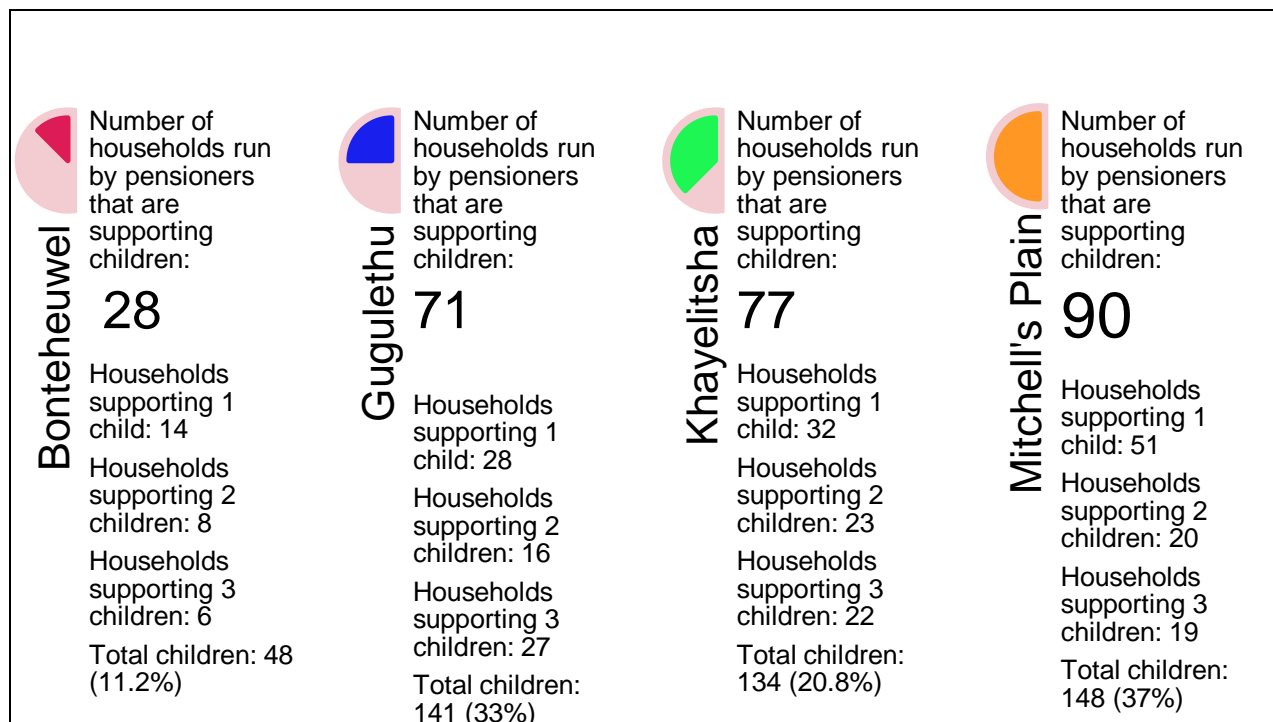


Figure 3.14: The number of pensioner headed households in each of the study areas, as well as the number of children supported per household

A reported 15% of children under the age of 6 years live in households headed by a pensioner (Table 3.15). Sixty-five (14%) of the 471 grandchildren have a disability. Sixty-four percent of pensioners provide their grandchildren with two meals per day, while 31% provide three meals and 5% four meals per day.

Table 3.15: The age of children who are solely cared for by pensioners

Age (years)	Number	Percentage
≤1	1	0.5
2	10	2
3	9	2
4	20	4
5	26	6
6	14	3
7	30	6
8	16	3
9	26	6
10	44	9
11	42	9
12	54	11
13	30	6
14	32	11
15	39	8
16	33	7
17	25	5.5
Total	451	100

Based on qualitative answers from respondents, some of the reasons provided for children ≤13 years of age not going to school (27 children) was that the children did not have a birth certificate to register them at school or the child had come to live with the grandparent after the start of the academic year and there was no “place” for the child at the school. For

children ≥ 14 (34 children) most grandparents reported that the grandchild did not want to or refused to attend school (Table 3.16).

Table 3.16: Children of school-going age who stayed at home (i.e. not attending school).

Age (years)	Number	Percentage
6	8	13.1
7	5	8.2
8	2	3.3
9	0	0
10	1	1.6
11	2	3.3
12	5	8.2
13	4	6.6
14	10	16.3
15	2	3.3
16	10	16.3
17	12	19.7
Total	61	100

Of the 703 pensioners in the study, 541 (76.9%) live with children in their home. All pensioners reported that people living with them benefit - directly or indirectly - from their pension. Pensioners with children in the home look after and take care of these children, even though the parent/s may be living in the house.

Three-hundred-and-fourteen (44.6%) grandmothers look after children, while 187 (26.6%) grandfathers look after children and only 40 (5.6%) couples look after children. Even though parents were living in the home, the grandparent(s) reported raising these children. There were 266 (37.9%) pensioners, who look after children singlehandedly, i.e.: the parents of the child are not living in the home. These 266 pensioners care for a total of 481 children.

All 266 pensioners involved in child care without other adults present reported that they provide clothing for their grandchildren, pay their school fees as well as buy books and stationery for their schooling. Forty-seven percent of pensioners admitted to being called to their grandchildren's school for the child's poor learning progress and 64% of pensioners were called to school for the child's poor behaviour. In 87% of the 266 households, the child had no one to assist him or her with school homework. The 13% of children who received assistance were helped by a neighbour, a sibling or a cousin living in the household. Only 42% of pensioners could afford to send their grandchildren to school until Grade 12 (final high school grade). None of the pensioners in the study reported being able to send their grandchildren to study at a university, a technical college or any other form of further education and training. Seventy-two percent of pensioners would like their grandchildren to work after school-leaving, so that they can help support the household.

Only 31% of the 266 pensioners are the legal guardians of the child or children in their care. When asked about any specific reason for the child staying with them, most grandparents replied "circumstances forced me to take responsibility for the child" or words to that effect. Table 3.17 sets out the information provided on whereabouts the parents of the children. A reported 46% of the 266 pensioners reported that it was their decision for the children to come live with them.

Table 3.17: Details of the whereabouts of parents of children living with their grandparents

Description	Mother		Father	
	Number	Percentage (266 households)	Number	Percentage (266 households)
Deceased	86	32	40	15
Don't know	27	10	144	54
Eastern Cape	14	5	-	-
Gauteng	20	8	-	-
In prison	4	2	15	6
Kwazulu Natal	5	2	-	-
Remarried	102	38	67	25
With boyfriend – don't know whereabouts	8	3	-	-

- denotes that no such cases occurred

Only 14 (5%) pensioners received a monthly contribution from the parent or parents for the child's daily expenses (Table 3.18). Of the 14 pensioners who reported receiving financial assistance, all replied that the money this received was not enough to support the child. Only 33% of pensioners received a social grant for the child in their care. This monthly child grant was also deemed not to be sufficient to support the child.

Table 3.18: Amounts of money received by 14 pensioners from the parents of the child/children

Amount	Number of children supported with money received from parents
R500	3
R500	2
R500	2
R500	3
R500	2
R500	3
R500	2
R750	2
R1000	2
R1000	3
R1000	2
R1000	3
R1200	1
R1500	3
Total	33

Fifty-four percent of pensioners reported that the child or children were often ill. Figure 3.15 illustrates the illnesses experienced by the dependent children in the 2 months preceding the survey.

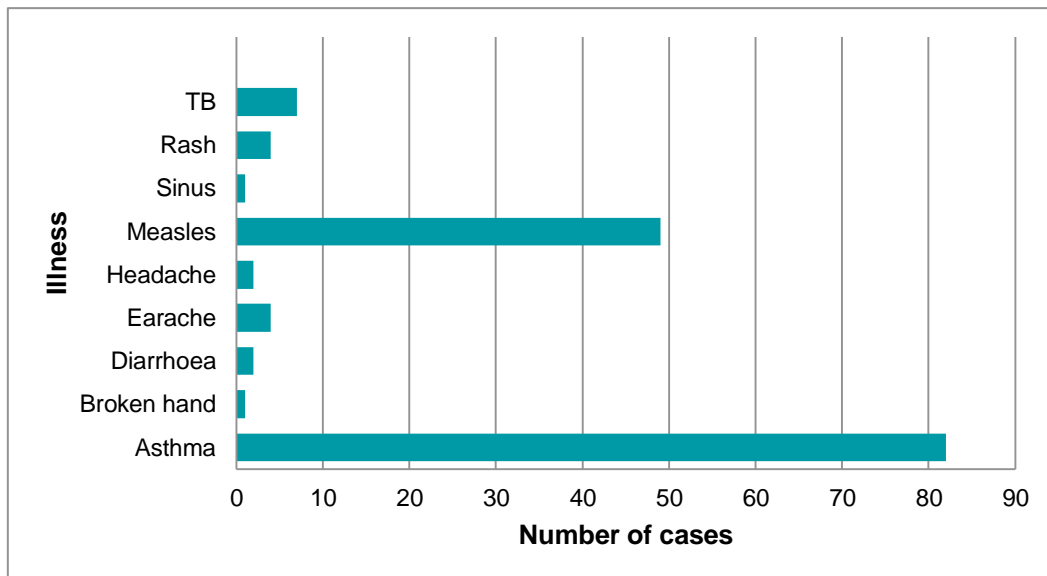


Figure 3.15: Reported Illnesses grandchildren suffered from in 2 months preceding the survey

Generally when the child was ill, all pensioners reported taking the child to the local community clinic. None of the pensioners paid for treatment of these children at the clinic. A reported 60% of pensioners used a taxi to commute to the clinic, while 40% walked. One in four children (118 of the 471) was hospitalized in the six months preceding the study (Figure 3.16).

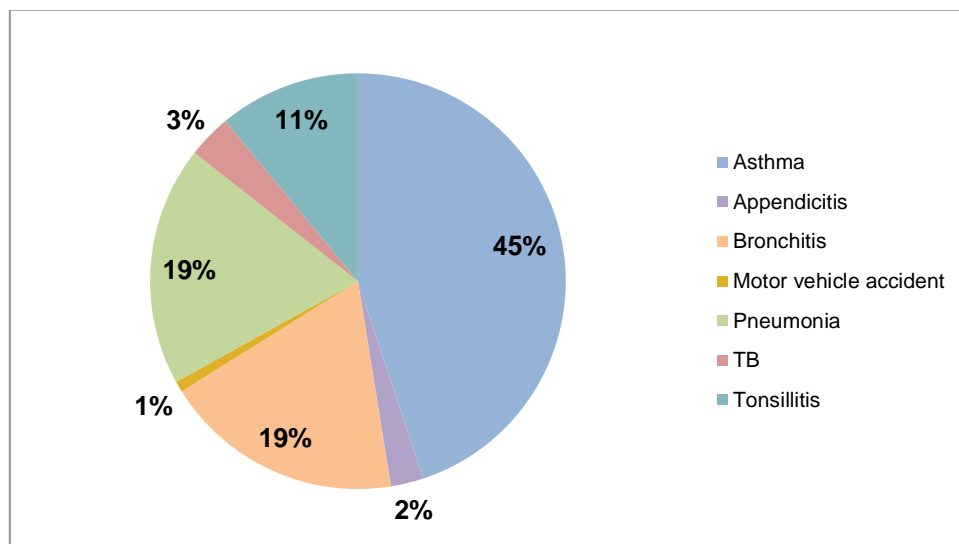


Figure 3.16: Illnesses causing hospitalisation that children cared for by pensioners suffered from during the 6 months preceding the survey

None of the respondents in the study deemed their community safe to live in and 95% of pensioners had someone in their home falling victim of crime in the past.

3.10 Effects of looking after dependents on female participants

In order to explore the hypothesis that women who were looking after dependents were worse off than those who did not, the data set was analysed for a few important variables. First it was investigated whether there was a statistically significant difference in the occurrence of diarrhoea between those women who looked after dependents and those who did not (Figure 3.17). There was no statistical difference in the occurrence of diarrhoea between these two groups (Chi square test, $p=0.775$).

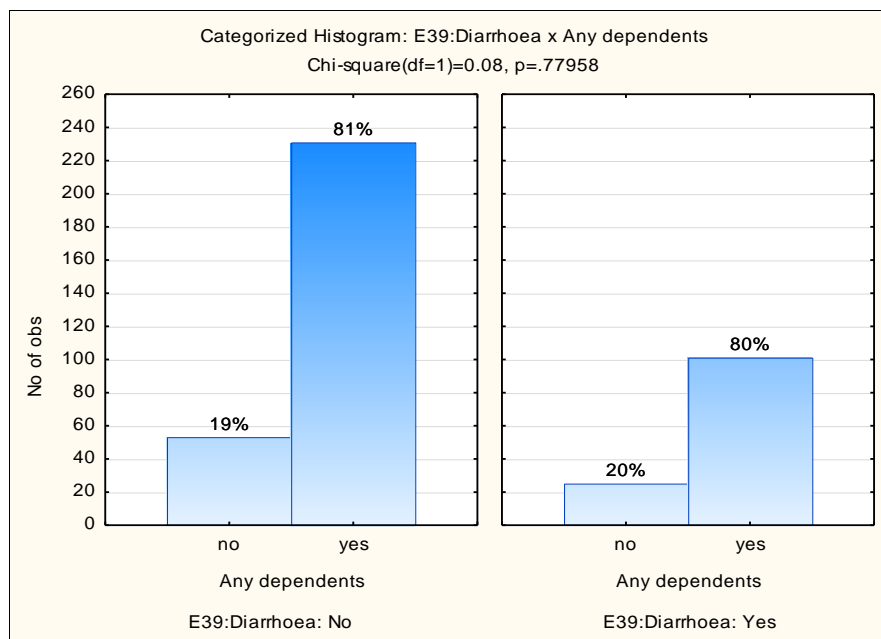


Figure 3.17: Occurrence of diarrhoea between those female pensioners who looked after dependents and those who did not

The possibility whether the two groups of women (those looking after dependents and those who did not) differed in the numbers who had a depression score >19 was investigated (Figure 3.18). There was no statistical difference in the occurrence of depression score >19 between these two groups (Chi square test, $p=0.157$).

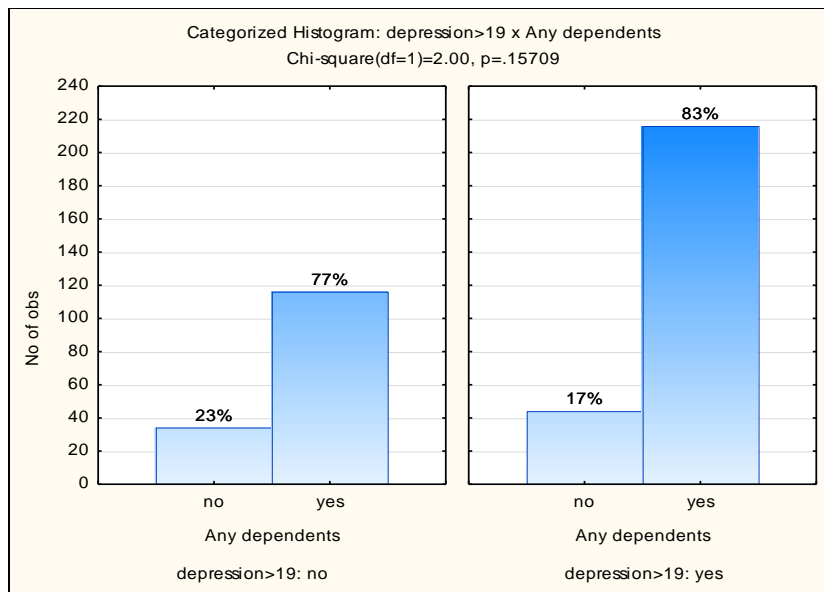


Figure 3.18: Female pensioners with a depression score >19 with and without dependents

It was investigated whether there was a statistically significant difference in the number of women who needed help with more than 2 activities of daily living between those female pensioners who looked after dependents and those who did not (Figure 3.19). There was no statistical difference in the occurrence of those who needed help with more than 2 activities of daily living between these two groups (Chi square test, $p=0.212$).

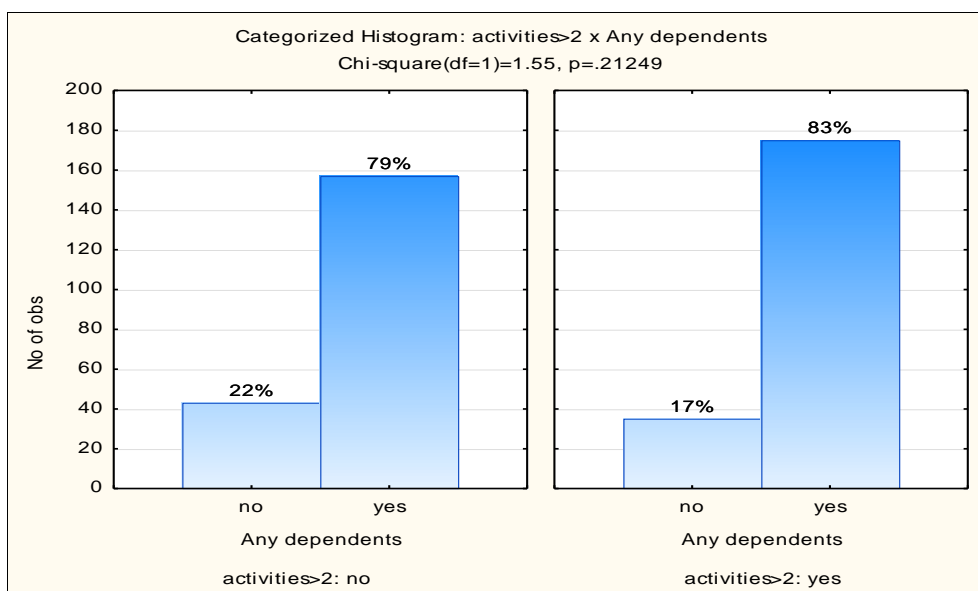


Figure 3.19: Female pensioners who required help with more than 2 activities of daily living

The possibility whether the two groups of women (those looking after dependents and those who did not) differed in numbers and who had fewer than 3 meals per day was investigated (Figure 3.20).

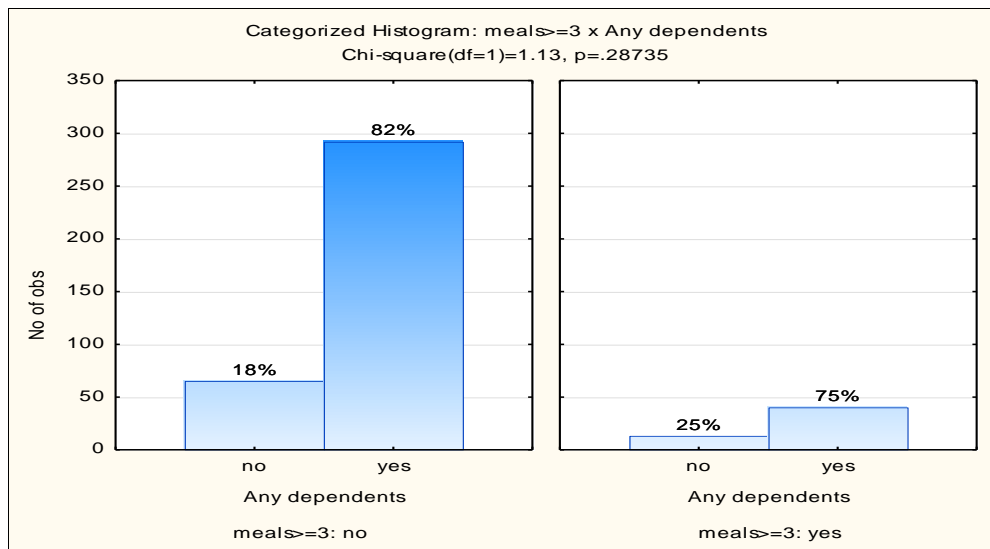


Figure 3.20: Female pensioners who had fewer than 3 meals per day and dependents

There was no statistical difference in the occurrence of those who habitually had less than 3 meals a day between these two groups (Chi square test, $p=0.287$).

3.11 Qualitative observations offered by participants during the interview

During the interview with the pensioners, spontaneous comments offered by respondents and the tone of the comments were recorded. The comments were then grouped into themes and are reported in Table 3.19.

Table 3.19: Comments offered by respondents during interview grouped into themes

Theme code	Spontaneous comments grouped into themes	Responses classified positive	Responses classified negative	Total no. responses	% negative responses per theme
A	Gender issues	1	4	5	80
B	Being old	3	10	13	77
C	Transport and getting around	1	8	9	89
D	Pension applications and ID document problems	0	5	5	100
E	Lack of education	2	23	25	92
F	Employment issues	1	6	7	86
G	Dependency in old age and the need for care	2	12	14	86
H	Caregiver responsibility	0	10	10	100
I	Housing and sanitation issues	0	15	15	100
J	Dealing with the youth, gangs	1	34	35	97

	and crime				
K	Health services	1	26	27	96
L	Special needs - eye health and vision	0	3	3	100
M	Special needs - ear health and hearing	0	3	3	100
N	Special needs - walking aids (walking stick)	0	2	2	100
O	Special needs - wheelchair	0	2	2	100
P	Special needs - dental issues	0	3	3	100
Q	Financial needs	1	16	17	94
R	Mobility and self-sufficiency	0	6	6	100
S	Social integration and social issues	0	7	7	100
T	General health status of respondent	2	18	20	90
U	Health status of others in the home	0	12	12	100
	Total of all responses	15	225	240	94

CHAPTER 4

Discussion and Conclusions

The participants in this study were all elderly recipients of social grants and therefore by implication indigent, but the overall impression that emerged from this survey is that many of them also face added burdens arising from social aspects of their lives. Theirs' is the last generation whose personal health was relatively untouched by the combined scourges of HIV/AIDS and TB. The ravages of the epidemic, as well as the social ills arising from the fractured society in which they live touched their lives nonetheless in other ways.¹²⁶

4.1 Epidemiological characteristics of elderly receiving state pensions

A major strength of this study is its use of a relatively large and representative sample of pensioners living in urban low-income communities across the city of Cape Town. The response rate of 100% was reassuringly high and it is noteworthy that none of the respondent felt uncomfortable to take part in the study after the aim and objectives of the research were carefully explained to them.

4.1.1 Gender Ratio

When interpreting the results of this study it should be borne in mind that the study group represents a systematic sample with random starting points of the pensioners arriving at the pay-out point to collect their pensions and not of all elderly persons eligible to receive a pension. According to what the participants said during their interviews, most pensioners in their areas come to the pay-out point and only those who cannot move about at all have alternative arrangements made for them. Various reasons were given for this situation; the most prominent among them was that the pensioners risked losing some or all of their total pay-out if others came to collect the money. Many pensioners also go straight to the grocery stores after collecting their pension to stock up on essential goods while they have the money.¹²⁷

The number of male participants was highly significantly different from the number of female participants - 42% males to 58% females, which is in keeping with worldwide observations in most countries with social support systems that more women receive old age pensions than men.¹²⁸ There was no overall difference in the age distribution between the genders, which was an unexpected finding since the gender ratio becomes increasingly skewed with advancing age.¹²⁹

The World Fact Book 2012 reported that the gender ratio for the whole of South Africa for persons 65 years and older was 67.8.¹³⁰ The overall gender ratio achieved in the present study was 71.46, which indicated that there were more men per 100 women in the sample than for the whole of the country. The gender ratio in the youngest age category was below the reported national average, namely 64.96, indicating that in that age group women still kept their ranking as in the rest of the country. The increased ratio over the next categories indicated that women increasingly started losing their numbers advantage. This is also borne out by a number of later findings in the data set that there were no gender differences on important aspects of health and wellbeing such as marital and educational status, help needed with activities of daily living and depression.

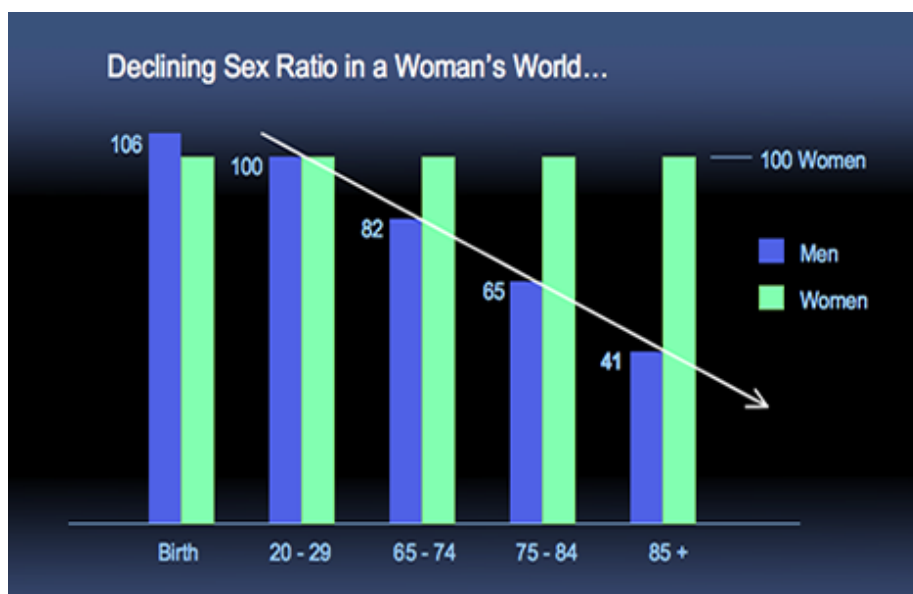


Figure 4.1: Declining gender ratio of the USA population with increasing age (statistics derived from US Census 2010)¹³¹

In Figure 4.1 the declining gender ratio of the American population is clearly illustrated. This pattern was not borne out in the present study. The narrowing of the gender gap with increasing age in the present study has serious implications for health care and the care of the dependents in the study. It also offers intriguing opportunities for speculation on the possible explanations behind this unexpected observation. Of course the sample is small in relation to the province or the country, so the first caveat is that it may simply be a sampling anomaly. The consistency of the lack of gender differences across a number of variables however, seem to indicate that this is a real phenomenon for the particular group in the study at least. It may be that the impact of a lifetime of hardship and poverty and the onerous duties associated with the care of so many needy dependents took their toll on the health of

the aged women in the study, thereby counteracting some of the protection that female gender was supposed to confer on older women. This needs further study.

A study was undertaken in rural South Africa of older women's relationships to their households where they are being asked to take on financial, emotional and physical responsibilities due to the incapacity of their adult children to care for the next generation.¹³² Like in the present study, it was found that older women provided crucial support for ill adult children and fostered and orphaned grandchildren in their households. As more adults in their prime suffer from HIV/AIDS, or faced life changes due to migration, (re)marriage and unemployment, this situation is expected to get worse.

Some of the women in the present study said that the current generation of women in their child-bearing years did not feel the sense of responsibility for their families that they themselves were brought up to embrace and that they did not know who will step in when they pass away. The present generation of grandmothers provide an immense and often unacknowledged 'social work' support system that will be very difficult to replace with state-sponsored services in future.

4.1.2 Marital Status

With increasing age, women are less likely to be married and more likely to be widowed than men.¹³³ The reasons are that they tend to survive longer than men, but also because they tend to marry men that are older than themselves. This was however not the case in the present study as there were no differences in the age composition between the genders. As speculated above, that may be because the burden of looking after children fell disproportionately on the older women and that their pensions had more likely to be shared. This is only the burden of the present, coming, as it were, on top of a lifetime of deprivation.

Lam *et al* (2001) reported that only 14% of African men in South Africa aged 70-74 were widowed while 55% of African women of that age were widowed (based on the 2001 Census data).¹³⁴ The male participants in the present study (aged 60 years and older) reported that 57% of them were widowed while 53% of the women said that they were widowed. Even allowing for the differing age categories, this is a very large discrepancy in the case of men, but not for the women.

Elderly men and women in Bangladesh who were the head of a household experienced significantly reduced mortality¹³⁵, while being married significantly reduced the risk of dying

for all elderly men, but not all elderly women. Rahman (1999) found that individual rather than joint access to material resources played an important role in elderly mortality.¹³⁵

A reanalysis of data from the Longitudinal Study of Aging (1984-1990) looked at the longevity advantage of married persons in all age groups in comparison to their corresponding unmarried counterparts.¹³⁶ This was done to investigate whether the survival advantage shown by married elderly actually arose from advantages accrued in younger stages of life and whether these advantages are continuing into old age. After controlling for many factors, the study did indeed find that marital status is associated with health and survival outcomes, but with regard to mortality the effects seemed to be modest in size. An unexpected finding was that being a widow or widower is associated with poorer health, the same was not true for unmarried/single persons. Single women in fact had a better health outcome than their married counterparts. In the South African context this is a very interesting finding. Indigent married women (married interpreted to mean cohabitation, whether in the formal or traditional sense), are more likely to face having to look after a second family of children when they are elderly than their unmarried counterparts. This added burden not only entails physical hard work, but it also reduces their material resources commensurately. In the present study the overall amount of R1140 pension pay-out per person per month reduced to R319 per person on average when shared out among all dependents. This amount is not enough to sustain a healthy existence.

4.1.3 Educational Status

The large and persistent relationship between health and education level is widely accepted,^{137,138,139,140} but the exact nature of the relationship and its covariates are by no means as clear-cut. It is generally recognized that persons with high levels of education are less likely to smoke or to drink to excess, more likely to get exercise and utilise health services better - all of which are associated with improved health outcomes. The reverse also holds true, namely that poor education is a precursor to increasing risk of poorer health, especially in older age.¹³⁸ Apart from the obvious economic rewards that can accompany increased levels of education, Cutler and Lleras-Muney (2006) also speculated that improved education leads to different (more positive and innovative) thinking and decision-making patterns.^{137,140} The reverse is of course applicable in the lives of persons who are at an educational disadvantage. Ross and Wu (1995) attributed part of the improvement of health indicators for those with a good education as "a greater sense of control over their lives and their health",¹³⁸ while this very sense of control and decision-making skills are sorely missing

for the poorly educated and the indigent. When the poorly educated are also elderly, the problems are exacerbated.

Lasheras *et al.* (2001) examined whether cardiovascular risk factors, diet, and indicators of quality of life varied according to educational level among 352 old people (65-95 years old) in the city of Oviedo, Spain. Lower levels of education were associated with "unhappiness, poor social relationships, poor self-assessed health, and sensory, and masticatory problems".¹⁴⁰ The educational levels of the elderly in this study had a large effect on quality of life, nutrient intake and amount of food eaten. "These findings may provide part of the explanation for the social gradient in mortality".¹⁴⁰

The participants in the present study are of the generation who were clearly educationally disadvantaged during the previous political dispensation. The percentage of women in this study who could be regarded as functionally illiterate was 15.3% and for the men this was 12.8%. One in three women and one in four men only had a primary school education. Many participants expressed their embarrassment and even shame at their lack of education and referred to the social aspects of the phenomenon, but few expressed any insight into the profound impact that such a low level of education had on the course of their lives.

There were no statistical differences between the marital status and the educational profiles by gender of the participants. This was unexpected, since these participants went to school during an era when poor women did not have the same access to education than men. It may be an indication that most of the indigent persons participating in the study lived in Cape Town during their schooling years where the access to education was better than in the deep rural areas. Their domicile during their youth was however not covered in the study.

4.2 Financial aspects

4.2.1 Economic Status of Pensioners

In both the developed and developing world, research into the economic well-being of older people has largely been subsumed into debates about contributory pension and social security reform. A small number of developing countries provide non-contributory old age benefits. In South Africa pensions are given to all persons over 60 years old who qualify through a means test. In Brazil rural workers are entitled to old age pensions funded, in part, by urban contributions.¹⁴¹ Non-contributory pensions in Brazil are less generous than in South Africa, however, and do not meet the basic living needs of older people, especially in

the more expensive cities.¹⁴² Outside Brazil and South Africa, there is a paucity of examples of large-scale non-contributory pension programmes in Asia, Africa or Latin America.^{142,143} In countries where non-contributory programmes are found, they usually only cover a very small proportion of older people or are of a minimal value.^{142,143}

In the study an overwhelming 98% recipients of the pension felt that they would not be able to live without the monthly contribution from the government. Sentiments to the effect that “I will die if they stop the pension” and “I can’t afford to live without the grant and I wish they could give us a little more, things are expensive” were repeated numerous times by the participants in this study. For those who did receive a pension, the value of the benefit was rarely sufficient to provide an acceptable level of subsistence.

A study of older people living in slum districts of Buenos Aires found that although the majority received some form of state assistance, over three-quarters of those had at least one other significant source of support: 14% of pensioners in that study relied on weekly food hand-outs from local churches and 5% resorted to scavenging and begging.¹⁴² In South Africa there is no other state assistance and a few pensioners either rely on their congregation at church or mosque for food packs during the festive season. In the present study 2% of pensioners had to work part time as a domestic worker, gardener, and builder or a caregiver at a crèche, so that they could supplement their monthly income. Most pensioners were scared of disclosing this information as they felt that should officials from SASSA or AllPay find out that their augmenting their income with part time work, their pension might be discontinued.

4.2.2 Receiving and applying for a Pension

SASSA undertakes to review all applications of the elderly to determine their eligibility for a pension. A means test is used to evaluate the applicant for an old age grant - this depends on the income, assets, marriage status of the applicant and on the income of both the applicant and his/her spouse (if married). Applying for an old age pension can be daunting, especially for pensioners that are frail, disabled, functionally illiterate and do not have a valid South African identity document (ID). For some of the elderly getting to the pension point or the SASSA offices is difficult and not knowing how to complete the necessary applications can make for a disheartening experience. Twenty three of the 703 respondents in the study found it difficult to initially get a pension due to them not having a valid South African ID. Cases are known where ID documents disappeared while at the Department of Home Affairs or the Department not timeously providing people with ID documents. Blind, frail or disabled

pensioners were accompanied to the pension point by either a family member or someone from the community. During the study, these pensioners often paid, giving the person who accompanied them to the pension point R10 or R20.

All of the pay-out points in the study had armed security guards inside the venue. A pension card or ID was needed to gain access to the venue. If a pensioner struggled to walk, a wheelchair was brought out by an AllPay official to take the pensioner into the hall to receive his or her pension. All pension sites in the study had sufficient seating and toilet facilities. First aid packs were also available at each site. Even though pay points only opened after 7:30am - after the money was delivered at the site - pensioners still preferred to queue from 6 am. The pensioners felt that coming to the pay point early would allow them to leave earlier, either get on with their domestic chores or to get back to grandchildren cared for at home. However, pay point officials have reported that 'sometimes' the money was delivered late or there were technical issues that prevented them from paying out to pensioners on the day. This caused a lot of frustration and dissatisfaction from pensioners, especially for those individuals who were nominated to collect the grant on behalf of a pensioner.

AllPay officials (the company contracted to disburse the pension pay-outs) reported that the pensioners sometimes arrived to receive their grant in an inebriated state. Such pensioners were asked to go home and sleep and come back for the pension after 14h00.

Outside the pension point, there was an array of commercial activities (vendors selling meat, canned food, fruit and vegetables, etc.) but there were also young men lurking outside these points. Pensioners had remarked that their fear was of pickpockets and that such robberies sometimes occurred. Many pensioners reported that they were followed and their bags snatched. Most pensioners had separated the money received into smaller amounts and stowed some of the money in their bags, on their person and even in their shoes. The receipt received from the pension pay-out was also thrown away before leaving the pay-out point. This was to 'hide' or 'refuse' that the payment was made out to the pensioner. This mostly occurred when family members or money lenders ('loan sharks') were waiting for money from the pensioner outside the pay point. Such unregistered micro-lenders have also been reported in the Eastern Cape, Limpopo and Gauteng holding onto pensioners ID books and SASSA cards as surety that the money loaned to the pensioners are repaid.¹⁴⁴ This is illegal, but such occurrences were mentioned by some participants.

The direct financial cost of the payment of social grants is fully subsidized in 'cash-based' payments. A fee of R32.11 per grant pay-out is paid by the government to the payment

providers, such as AllPay. Should the beneficiary of the grant opt to receive the pension electronically at a bank facility the associated bank charges are recovered from the pensioner. In many instances the cheaper option is for recipients to maximize the value of their social grant by avoiding bank charges and access costs by continuing to receive cash payments.⁷⁰

SASSA has recently embarked on re-registering pensioners over 2012 to 2013 in order to convert the pay-outs to an automated biometric-based payment system process to eliminate fraud and corruption and to create a solid database of all beneficiaries.

4.3 Housing/Domicile of pensioners

It is widely accepted that the concept of 'ageing-in-place' is important to the health and well-being of older people.¹⁴⁵ Everybody wants to live in a home that they are comfortable in and familiar with, to be close to family, to be connected to their communities and near all necessary services such as medical centres, shopping facilities, public transport and social activities. Everybody also likes to think that they can live in their own homes (whatever type and tenure they might have) for as long as they can manage. Everybody also hope their independence and personal dignity can be maintained much longer by arranging for domiciliary services such as home help, meals services, installation of personal aides, or other aged care supports that can increase their independence.¹⁴⁵ In the present study however, 43% of participants lived in informal housing structures (shacks), while 57% of pensioners lived in formal houses made of brick-and-mortar and only 9% of participants owned their home.

Having endured a lifetime of hardships and, for most pensioners in this study, having lived in a shack all their life, comfort and personal dignity are often not luxuries that they were used to or came to expect.

Qualitative information obtained during the survey clearly demonstrates the emotional distress experienced by participants in the study. Some say, "*The government promised us a house, but I am still waiting*" and others merely state "*my whole life I live in a shack...I want a house before I die.*" For some pensioners, harsh weather conditions or fires have left them homeless or exposed to unhealthy weather conditions. Pensioners said "*it not nice having a shack, when it rains it not nice*" since the homes they live in are not weatherproof and become damp and wet. This exacerbates health conditions frequently associated with old age such as rheumatism and respiratory complaints. Add to this the hardships of using

ablution facilities that are a distance away from their shacks, which makes the everyday lives of most of the participants in the present study a struggle.

While respondents in the study stated that they had access to a toilet and to water, only 32% have the toilet and 40% with a tap inside the home. This posed a problem to pensioners who could not easily get around. Household chores like cooking, cleaning, and collecting firewood and water become difficult, particularly for older women who are most often involved in these tasks. Particularly collecting firewood and water sometimes involved walking long distances and carrying large loads. Living with younger household members who could carry out these chores made a substantial difference in the lives of some of the respondents. While some participants relied on the children living in the household to help them with the daily chores, most pensioners described their care-giving of children, including a diverse array of activities and financial responsibilities, as a burden. These included feeding, bathing, fetching and preparing treatments, washing soiled clothing and blankets, as well as helping ill or disabled adult dependents to the toilet.

The results of the study revealed the daily life of a group of elderly people characterized by a need to maintain normality by continuing with their daily life in a way that they consider as acceptable and thus normal for them. It involved staying physically active and keeping to a range of routines despite a constant lack of basic resources. Their daily lives are also characterized by involvement in caring for family and friends and a strong community commitment. Many of them work very hard, since a large number of them are caring for a second family (mainly children). The behaviour of some of these children is an added source of stress and worry for the elderly in the study.

4.4 Activities of Daily Living

Activities of Daily Living (ADL) are those actions and activities that people must be able to do on a daily basis in order for them to function as fully independent persons.¹⁴⁶ These activities include mundane tasks such as feeding oneself, dressing and undressing, bathing or washing, combing one's hair, etc. It was long felt that ADL did not encompass the full range of activities needed for independent functioning and thus Instrumental Activities of Daily Living (IADL) were created to fill the gap.¹⁴⁷ IADL includes more complex activities such as handling one's own finances, shopping and meal preparation, doing housework and taking medication. The present study included some aspects of ADL as well as IADL.

Some of the IADL variables depend on the ability to read adequately. In such cases the concept of functional illiteracy is often employed. Functional illiteracy can be defined as being unable to read and write well enough to function effectively in everyday life and is a loosely defined term. It is often taken to mean schooling received only up to or below Grade 4. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines an illiterate person as someone who cannot, with understanding, both read and write a short, simple statement on his or her everyday life.¹⁴⁸ A person who can only read but not write, or can write but not read is considered to be illiterate. A person who can only write figures, his or her name or a memorized ritual phrase is also not considered literate. This definition of literacy is widely used in national population censuses and surveys but its interpretation and application may vary to some extent among countries, depending on national, social and cultural circumstances. Furthermore, this concept of literacy includes persons who, though familiar with the basics of reading and writing, might still be considered functionally illiterate. Literacy involves not only reading and writing but also the acquisition of the skills necessary for effective and productive performance within society.¹⁴⁸

The World Literacy Foundation¹⁴⁹ regards a functionally illiterate person as " ... a person [who] may be able to read and write simple words, but cannot apply these skills to tasks such as reading a medicine label, balancing a chequebook, or filling out a job application". There were 190 persons in the present study classified as functionally illiterate (29.8%, when the 65 blind persons were excluded). When the poverty of all the participants in this study is kept in mind, the levels of illiteracy add a particularly onerous burden to the quality of living of the affected elderly.

There was no difference between the reported ADL levels and gender and the results are therefore interpreted for the whole group together. Reading letters was the activity that the most respondents (44%) reported having problems with (Table 4.6), followed by washing clothes (39%), taking medication (34%) and using the toilet (33%). For the calculation of the percentage of persons having difficulty reading letters, the blind participants and those who were deemed to be functionally illiterate were excluded. There were 19 persons who were both functionally illiterate and now blind. Functional illiteracy is an impediment to independent functioning in itself. From the qualitative information spontaneously offered by the respondents, 92% expressed negative feelings about their lack of or inadequate education.

Sulander (2011) studied urban home-dwelling older adults in Finland and found that those persons with lower education had poorer functional capacity than the higher educated elderly

irrespective of health-related behaviours and the presence of certain chronic conditions (cardiovascular diseases and musculoskeletal diseases).¹⁵⁰

The ability to perform the activities of daily living serves as a measure of independence and can be used by the health care provider to assess the nature of assistance needed by the elderly person. Independence in the elderly is affected by medical conditions, neurological states and psychiatric conditions. The participants in the present study overwhelmingly showed some loss of independence in that only 4.7% reported that they experienced no problems with performing the ADL included in the survey. As reported in Table 3.8, nearly three-quarters of respondents reported problems with one activity (25.9%), two activities (23.8%) or three activities (24.1%). It is clear from the shortened version of the ADL assessment used in the present study that a substantial proportion of the elderly require assistance of some form or another in order to function to their best ability while only 17 respondents (2%) reported having a caregiver. There was no difference between the genders on the number of activities needing assistance, but a statistical difference showed up between increasing age and number of activities needing assistance, which is to be expected as functional abilities decrease with increasing age.

4.5 Physical health status

The overall picture emerging from the health aspects assessed in the study was one of a group of persons showing the long-term effects of a life of deprivation and poor access to health care. The present health status of the participants in this study was not good. Only 17% of the respondents reported not suffering from any of 10 health-related conditions covered in the survey (Table 3.9), while 39% suffered from at least one condition and another 29% from two conditions. A further 14.5% of participants suffered from three or more conditions. The prevalence of those unaffected by major health conditions in the present study was similar to the 15% of elderly not reporting suffering from a major illness in a study by Srinivasan, Vaz & Thomas (2010).¹⁵¹

Illness is a major risk to people's livelihoods and quality of life in resource-poor settings, predominantly where there are rising levels of chronic illness.¹⁵² Diabetes was reported the most frequently by participants in the present study, while arthritis was the second-most frequently reported chronic condition. Previous heart attacks were reported by 36% of the respondents and strokes by 22% of respondents. This is in keeping with the observation that diabetes and cardiovascular diseases are common among urban elderly.^{151,153,154} Srinivasan, Vaz & Thomas (2010) reported that 32% of the elderly in a survey in Bangaluru, India

suffered from diabetes which was similar to the 28.8% found in the present study.¹⁵¹ Srinivasan found that 28% suffered from arthritis while in the present study 18% of the elderly reported being diagnosed with such a condition.¹⁵¹ The reported lower prevalence in the present study could be interpreted in the light of the poor utilization of health services by the elderly in the survey and also the problems with literacy and thus being uninformed about the diagnosis. An additional 14% of the participants in the present study reported 'body pains' of which 6.9% were not receiving treatment. Alcohol was sometimes used to treat pain as reported by a respondent, *"I drink for the body pains!"* or *"The drink make me feel nice."* and *"A little bit of whisky helps me."* Resorting to alcohol could be seen as a choice with wide-ranging implications as its purchase would deplete already strained household budgets.

At least a quarter of the present study group have had TB in the past, while 30% share their dwelling with TB sufferers and 29% live with persons who are HIV positive. This in itself will seriously compromise the health of the elderly in the study and affect the lives of the large number of persons (mostly minor children) for whom they have to care. *"That HIV is in my house...it is horrible. It take my children away and leave me to look after the small ones. I tell them not to sleep around, but they still make such nonsense. And then they cough and cough... it's like the HIV becomes the TB. It is very hard for me to see two my children's die like that."*

At least one attack of diarrhoea was reported by 32% of pensioners in the 14 days preceding the survey. In a previous study of low-cost housing areas in Cape Town similar to the ones in the present study,¹⁵⁵ it was found that 38% of inhabitants of all ages suffered an attack of diarrhoea in the two weeks prior to the survey. Such high levels of diarrhoea are a reflection of the poor sanitation conditions, inadequate housing and general effect of poverty on nutrition and quality of life experienced by the participants. Only 48% of the respondents in the present study had access to a bathroom to wash while 32% had access to a toilet inside the dwelling. Of the total group, 15% had to make use of communal facilities some distance away from their home. The 14% of respondents reporting that they have difficulty controlling their urination should be interpreted in the light of the low reported number of visits to the toilet by the respondents and the location of the toilet available to the respondents. Postponing urination can lead to urinary tract infection which would contribute to the increasing frailty of these participants. In addition, 48% of respondents reported having problems moving around in their home which may also contribute to their reluctance to walk to the toilet, especially if some distance is involved. Almost half (46%) reported only visiting a toilet two to three times a day.

The poor access and utilization of toilets by the elderly in this study also led to the use of chamber pots, especially overnight, when the elderly were reluctant to walk some distance to an outside toilet. The inadequate disposal of the contents of such chamber pots contributes to environmental health hazards faced by all the inhabitants of these low-income areas. Such infection pressure contribute to the health risks facing the elderly in these areas and also leads to an environment that is becoming almost impossible to clean.¹⁵⁵ *"It is sometimes very cold and hard for me to go outside, so I put it by the bed and throw it in the bush the next day. The children use the potty as well."*

Change is an unavoidable part of aging.¹⁵⁶ Sensation is the physical and mental process that allows us to receive information from our surrounding environment through the ears, skin, tongue, nostrils, eyes and other specialized sense organs.¹⁵⁶ Sensory loss is described as a reduced ability to respond to stimuli that affect our senses (hearing, touch, etc.). Most hearing people take their hearing for granted.¹⁵⁶ As one ages, and hearing degenerates it can be very 'confusing' for the elderly person. Understanding sensory loss can aid individuals adapt and accept these natural changes. A reported 56% of participants in the study said that they had trouble with their hearing but none of the 703 participants had ever been for a hearing test, which is of concern. Change in environment to compensate for age-related sensory losses is necessary for many older adults to live with the condition and maintain their independent living.¹⁵⁶ More than half of the sighted respondents said that they could not see well and the median number of years that those who actually possessed spectacles last had an eye test was 11 years. This situation is similar to that of the hearing problems reported in the study and of equal concern.

Eighty-five percent of the respondents reported only eating one or two meals a day. Financial constraints no doubt contributed to this undesirable state of affairs, since the pension received by the elderly in the study usually had to be shared among many persons in the home. Most of the pensioners shopped for food and groceries immediately after receiving their pension. Most pensioners had struggled to buy all of the items for the month in one visit to the stores as they were unable to carry their shopping home. There was a desire to buy fruit and vegetables, but these items were often seen as expensive. There were stalls outside all of the pay-out points where unprotected and uncovered fatty meat, pure animal fat, food items (sometimes expired), no name cleaning agents and clothing were sold. These items were somewhat 'cheaper' than in the supermarkets, with 'buy one get one free' specials. Pensioners reported that physical disabilities affected food procurement, joint pains and visual problems interfered with food preparation, and dental problems complicated food intake. With 74% of respondents having reported suffering from toothache and 39% of

pensioners having trouble chewing, attention to oral health was poor. Sixty five percent of participants reported that they were in need of dentures.

Seventeen percent of the respondents experienced two or more falls in the preceding month, which may be related to their poor vision, hunger, blood pressure medication, frailty or even the poor condition of their homes (poorly lit, uneven floors, etc.). Prevalence rates for falls in community living elderly are greater for women than for men¹⁵⁷ and recreational or therapeutic walking can improve some of the deficits. The mortality rate for falls in the elderly increases dramatically with age in both sexes, across all racial and ethnic groups, with falls accounting for 70% of accidental deaths in American elderly aged 75 years and older.¹⁵⁷ Prevention of falls in the elderly can be aided by provision of hand railings and walking aids, deemed to be the most effective environmental approaches to preventing falls.¹⁵⁷ The provision of walking aids was particularly deficient in the present study.

The blood pressure measurements were taken as a rough indication of those persons who need treatment for hypertension. The measurements were not carried out under strict standardised situations thus a range of reference values was employed. The data were arranged in increasing reference values so that comparisons with other data sets can be made and so that there are increasingly larger margins of error to compensate for the non-standard circumstances of the measurement and the possibly stressful environment. As an added complication, blood pressures of elderly persons do tend to rise with increasing age.^{124,125} More than one in three participants in the present study had blood pressures above the reference value of 140/90 mmHg. Even at the widest margin of error (>180/90 mmHg), there were still 20% of the participants whose blood pressures registered this high score. Such high blood pressures are associated, inter alia, with cardiovascular conditions and chronic kidney disease.¹²⁵ In contrast to this, there were also a group of participants whose blood pressure readings were below 120/80 mmHg, putting them at risk of dizzy spells and falls. This entire group of elderly need better blood pressure monitoring and better supervision and treatment at a primary care level.

4.6 Mental health status

The Geriatric Depression Scale is widely used but is not standardised for speakers of indigenous languages. It was nevertheless used since it is also used in the clinical setting in the study area. This caveat is mentioned however and should be kept in mind in the discussion of the results. In this study, 64% of respondents were classified as severely depressed and 20% were mildly depressed based on the answers provided to the questions

in the Geriatric Depression Scale. A respondent remarked during the survey, *"I feel like I must go to God now, I got too much worries."* This finding was supported by the crude classification of the spontaneous qualitative comments into positively and negatively toned contents. An overwhelming proportion (94%) of the comments was deemed to be negative in tone. One does need to realise, that the GDS has been developed in the social and cultural environment of the first world. Although one does need to use this scale (as there is nothing else available that is appropriate for use in this situation, interpretations need to be done with caution, as expressions of mental and emotional experiences differ in different cultures.

Mental disorders are a major contributor to the burden of disease in all regions of the world.^{158,159,160} Mild psychiatric and depressive symptoms are generally recognised to be an expression of suffering as a result of adversity and situational stress, particularly poverty. Depression is known to have a close association with poor health¹⁶¹ and in the present study depressed persons certainly complained more about their health, but since physical examinations were not performed it is not clear whether this actually represented physical illness or was a manifestation of low morale or discontent.

While social support is generally acknowledged to buffer the effects of adversity,¹⁶² the relationship to depression is complicated and largely dependent on the quality of support and its perceived adequacy. Adversity is an important factor when reviewing these results. By usual standards the respondents of the study lived in urban poor communities under disadvantaged conditions. Low amounts of money, poor living conditions, and lack of familiarity with services all emerged as factors, and in addition, many of the pensioners were subject to extra stress in relation to their social role. Pensioners play an instrumental role in their communities. Women are responsible for the daily management of the household and caring for grandchildren, they do the shopping and preparation of meals and, where money is limited, this is an enormous worry. A further complexity is pensioners living in extended households where young family adult members are unemployed and have substance (alcohol, tobacco and narcotics) abuse problems. A respondent shared during the survey: *"Can you see, I am crying now, but my tears are all dried up...the drugs are too much bad. In my house the husband and wife drink together and then they fight with each other in front of the children."*

The trip to the pension pay out point was described as "a day out." Respondents describe the time at the pension point a time to meet their friends. *"It is lonely in the house and they don't talk nicely to me."*

As described by Schonfeld and Depree (1991) depression, loneliness and lack of social support were the most frequently reported antecedents to pre-admission drinking behaviour for elderly groups.¹⁶³ In this study alcohol was consumed by 71% of pensioners, while 49% reported that they smoke tobacco in the form of cigarettes, while 15% of respondents smoked previously but gave up smoking. Use of these substances would have impacted negatively on the already constrained household income. The “crowding out effect” of such expenditure on the already scant household budget in poor areas had also been reported by Thomson *et al.* (2002) and Govender *et al.*^{155,164}

4.7 Health service utilisation

The meaning of health and illness as well as people's beliefs about the required response to illness vary widely according to time and place and represents the culture and society in which people live. A double burden of disease in rural South Africa – an emerging epidemic of non-communicable diseases alongside high HIV-prevalence – defines illness as a ‘normal’ part of older persons' everyday lives. In a developing country like South Africa the resources allocated to health care are insufficient, as many people have to rely on state-subsidised health care.¹⁶⁵ This is also reflected in the study results where 96% of elderly participants visited their respective community clinics and state government hospitals for treatment and chronic medication. Thus the vast majority of the participants in this study made use of public health services - only 4% of them reported visiting a private practitioner when they needed health care and 6% reported using traditional medicine to treat their illnesses. Of the total group, 93% reported walked to the clinic. This is in direct contrast to the 48% who reported having difficulty walking around in their homes.

“The nurses don't know what to do for me, so I go to my own doctor...he is expensive, but I am in so much of pain...what will the children do if I die.” These sentiments were expressed by a participant that visited the private general practitioner in her community. With waiting times of 2 to 5 hours and reported unfriendly or unhelpful health professionals at the clinics, pensioners were not happy with the public health services provided to them. Comments such as, *“the queue is very long for me and I get so tired waiting”* and *“the nurse told me the other time that I must just stay at home, but I am sick, she say they can't help me”* where expressed many times during the interview with pensioners. The vast majority of older people accepted that poor health, often accompanied by increasing poverty, was an integral part of old age. Degenerative conditions were seldom explicitly diagnosed and the individuals and their families alike tended to accept this process as a normal part of the stage in the life that they had reached.

4.8 Dependency on pensioners

Pensions are generally viewed as a household resource, covering all dependent family members' health and everyday needs.¹⁶⁶ When this amount of sharing occurs, however, resources for older persons' own needs are decreased, and worry may be increased, thus exacerbating negative impacts on older persons' health and wellbeing. The World Bank has argued that, "rather than shield older people against the breakdown of intergenerational exchange, formal pension systems actually make things worse."¹⁶⁷ This is because formal systems may crowd out private transfers by reducing the willingness of children to provide additional support".¹⁶⁷ If intergenerational exchange is grounded on reciprocity, pensions may provide the aged with financial resources which can be offered in return for other goods, such as general care.¹⁴² This would be particularly important in deprived households where additional sources of income are limited.¹⁴²

In households where pensioners were living with adult family members, respondents in the study had mentioned that they had to give their son or daughter the money and it was taken for rent or food. They were then provided with an allowance from the pension received (R50 or R100) and the rest was used for supporting the household. *"Hulle is skelm! I must give the money for them or they fighting with me. They say they give me shelter and food, so I should not speak. Where must I go if I don't give?"*

The post-hoc analyses of whether there were statistically significant differences between women who cared for dependents and those who did not on certain variables (diarrhoea, depression score >19, help needed on >2 ADL, fewer than 3 meals eaten per day) did not yield any significant differences. It should be noted however that the present study was not designed to test such hypotheses and that the sampling strategy was not geared towards such a comparison. The differences in important health outcomes (such as these variables represent) should be investigated as a matter of priority so that the elderly women who are overburdened by the care of dependents could be identified and helped.

4.9 Pensioners as caregivers

Grandmothers, as the primary caregivers, face multiple problems in the form of grieving for the loss of loved ones; coping with the rejection of family, friends and the community due to the stigma associated especially with HIV/AIDS; providing care and support to grandchildren; and performing duties as the head of the household and trying to generate income.¹⁶⁸ What is more, these combinations of events and responsibilities often occur within the malaise of

poverty. In order to provide the medical and moral support that a stigmatised disease like HIV/AIDS demands, older persons need support from both welfare and health agencies to continue rendering this unpaid service. While non-communicable diseases such as hypertension, diabetes and stroke are burdening older South Africans' health, the responsibilities of caring for ailing children infected with AIDS and orphaned grandchildren further impact their wellbeing.¹⁶⁸ Although nearly all of the respondents in the present study ought to have had additional income through other social grants - particularly child support grants and foster care grants - in reality only a few respondents were able to access these grants.

A reported 266 of the 703 (38%) households had pensioners (but with no other adults present) who cared for and provided for 471 grandchildren under the age of 18 years. This puts a significant strain on such elderly persons as they often feel that they are unable to control the child (especially the 61 children who were of school-going age but who did not attend to school). These caregivers also worry as to who would look after the children when they die. Pensioners are expected to provide food (daily meals), clothing, children's pocket money, school fees, and other smaller expenses.

The present study found that only 14 pensioners (2%) received financial contributions from their children or grandchildren to supplement their monthly income. It should however be noted that this money is not for the pensioner, but rather for the pensioner to use the money to support the child in the pensioner's care. Pensioners who received this income stressed that there were months when there were no financial contributions to look after the child. *"Sometimes the mother – who is my daughter – say that she has accounts and she is short so she deposit no money. I feel sorry for her, but what must I do then? The children must eat, go to school. It is very hard those months."*

Respondents in the study had also mentioned that they were unable to access a grant for the child that they were caring for as the child did not have a birth certificate. Some respondents remarked that they suspected that the parent of the child was receiving the child grant but did not use it to support the child.

Child support grants are easier to access than foster care grants, but one still needs the child's birth certificate to apply for the grant, a distinct obstacle for many of the respondents in the study. Some respondents said that only one or sometimes two of the children in their care were receiving the child support grant, but often the absent mothers of these children

were the ones receiving the grant. In order to access the foster care grant, a grandparent has to prove legal guardianship, an arduous process than can take several years.⁷⁰

Unexpectedly, there were very few gender differences in the present study. There were very few, if any, indications of the much vaunted advantage that female gender confers in old age. Could it have been partially negated by the hardships that most old women in the present study faced in caring for a second young family towards the end of their lives? This should be investigated because, if such old women face a burden that may shorten their life expectancy, then the support to help them cope should be greatly increased. Already most of the elderly persons in the present study showed signs of struggling to cope with advancing age under severely deprived circumstances. Unfortunately the younger generation left in their care is also showing signs of being adversely affected, with behavioural problems the most important of all.

4.10 Epidemiological value of the study

“It seems astonishing that in the 21st century decisions on health care can still be made without a solid grounding in research evidence.” This is the conclusion that caused the WHO Department of Research Policy and Cooperation as well as the PLoS Medicine Editors to call for submissions under the banner “No Health Without Research”.¹⁶⁹ They are concerned that, as far as planning and policy making are concerned, systematic reviews showed “time and again” that the evidence needed for such actions is inadequate.

The WHO/PLoS Medicine team listed several reasons why this unsatisfactory state of affairs continues to exist, naming, inter alia, a lack of consensus on guiding principles, methodological challenges and poor capacity (especially in resource-poor regions).¹⁶⁹

In response to this call for papers on the subject, Orton *et al.* (2011) published a systematic review on the subject.¹⁷⁰ They came to the conclusion that there was no reliable information to judge the extent of the use of research evidence in public health decision-making.¹⁷⁰ They identified the following barriers to the use of research evidence: “decision makers’ perceptions of research evidence; the gulf between researchers and decision makers; the culture of decision making; competing influences on decision making; and practical constraints”.¹⁷⁰ They cited other sources of evidence used by planners and policy makers, such as internal information, local ‘best practices’, political viability, intuition, professional judgement, etc. It was reported that “negative perceptions of the available research evidence commonly limited its use”.¹⁷⁰

Such negative perceptions are often associated with community-based surveys. As reviewed in Chapter 1, meticulously planned surveys of the required size and with valid sampling strategies and measuring instruments are difficult undertakings. The knowledge, skills and experience to do such studies are probably the biggest hurdle in developing countries to the more widespread use of research-based data for planning purposes.

One of the most obvious advantages to such surveys is its low cost. The present study was done under resource-poor circumstances and within strict time constraints. The study provided ample evidence of challenges in community health facing disadvantaged urban elderly that need policy attention at the highest level. Studies on a local level can help inform larger surveys (if needed) and may even provide such clear-cut answers of present problems that a repeat on a national basis may be unnecessary. The resistance to such studies is contra-productive and regrettable.

CHAPTER 5

Implications and Recommendations of the study

5.1 Conclusions

Chapters Two to Four of the study have generated uniquely valuable information on pensioners living in urban poverty. Very few studies in South Africa feature the unmet health needs of pensioners living in urban communities. In developing countries, population ageing is regarded as a crisis because older people are often viewed as a costly burden, frail and non-productive. In the vulnerable communities included in this study, the participating pensioners are revealed as exhibiting an unfavourable health status and living under conditions of significant poverty, with extensive unmet health needs and very little familial or community support or care. The extent to which these issues were encountered in all four communities (i.e. Gugulethu, Khayelitsha, Mitchells Plain and Bonteheuwel) provided a picture of what is in fact a problem affecting most of the elderly receiving a state pension in South Africa.

It is of further concern that pensioners living in these communities can be seen to have already benefitted from government social welfare programmes and therefore 'supposedly taken care of', but that actually even their most basic needs were not provided. In fact, the present study illustrated that these pensioners are obliged to financially support not only themselves but intergenerational family members, thereby exacerbating their disadvantage. The present state pension provided to the elderly therefore creates an impression that the lives of such elderly are improved. Poverty is characterised not only by material well-being indicators which include income, housing and food, but also by individual indicators which reflect what a person feels. In this study, high levels of depression, apathy, sorrow and hopelessness were evident as pensioners lived their entire lives through hard times with little to no improvement in quality of life.

There are several interlocking findings arising from the present study, all with serious consequences for the health and welfare of the elderly. Past race and gender based discrimination continue to affect the living conditions of many indigent older people in South Africa, and most remain dependent on government transfers. Social assistance is intended to be a temporary solution for unforeseen individual problems, but this study found that there is an immense dependency amongst pensioners on the grant. Large fractions of the poorest grandchildren live in households that receive a pension income. While the South African

social pension is an example of a transfer scheme where eligibility is determined by age, older persons are relied upon by others to share their social grants and they were increasingly called upon to take over the nurturing responsibilities that their own children were unable or unwilling to perform. As reported in the study, illness, death, second marriages, imprisonment or absence as a result of labour migration were some of the reasons for grandparents being called upon to look after a second generation of children while still enduring the same hardships.

5.2 Recommendations emanating from the findings of the study

Poverty is a dominant mediator of the quality of life of human beings. Poverty is simultaneously a cause of ill-health through poor diet, poor access to health care and the effect of living in squalid living conditions (some pensioners in this study reported living in shacks), because today's ill-health leads to deepening poverty tomorrow. The health status of the pensioners in the present study bears testimony to a subpopulation of persons facing considerable health risks. There are many pensioners in the study who are unable to afford three meals a day, who are suffering from depression and who are under considerable financial strain to support children dependent on them. Urgent attention should be given to more comprehensive poverty alleviation strategies and outreach to the elderly. In addition, a multidimensional strategy that targets assistance to those elderly who look after other family members needs to be established, and policies should be put into place to address the burdens of physical care and assistance such as community care workers.

Undoubtedly, the state has been able to provide stopgap relief for millions of South Africans through the provision of social grants. However, results from the present study suggest that it is time that alternative strategies for poverty alleviation were pursued more aggressively alongside the existing social grants.

Even though the elderly are more likely to live in extended households which could provide a better social support network, these larger families place a lot of demands on the elderly and increase the chances of exposure to vulnerabilities and hunger. The extra responsibilities of looking after a number of dependent family members mean that these elderly are working extremely hard.

The expansion of the eligibility for the child support grant has not benefitted many of the children in this study, as the absent parent(s) of the children had either kept the money for themselves or a grant could not be accessed by the pensioners due to the grandparent not

having the grandchild's birth certificate. In this study, the child grant has not taken the pressure from older persons in poor households, as children are still reliant on old age grants for sustenance. It is recommended that a system be in place where caregivers of children eligible for a social grant can report cases to SASSA, with supporting proof, where the child is not benefiting directly from the grant and make an application for the grant to be apportioned to the caregiver. Furthermore, it is recommended that the Department of Social Development have trained persons (ideally social workers if at all possible) on standby at pension points, so as to assist pensioners with issues such as abuse and dealing with children of school going age who misbehave or refuse to attend school. A further possible measure could be to launch support groups for the elderly living in impoverished communities. These support groups can be facilitated by trained assistants (preferably with some nursing or social work experience) who could refer cases to the appropriate authorities and oversee that they are dealt with timeously.

A key consequence of many non-communicable diseases in older age is disability. Problems such as cataracts, refractory errors, dementia and osteoarthritis cause sensory, cognitive and physical impairments and limit an older person's ability to participate in society. Access to rehabilitation, assistive devices and living in a supportive environment can lessen this burden. However, many pensioners will reach a point in their lives when they are no longer able to look after themselves. In most developing countries, informal care, including family care, is the predominant model of support for older adults. But caregivers themselves often experience high levels of strain, psychological problems and poor physical health. This problem is magnified if those very caregivers are elderly themselves. Moreover, as the relative number of older people increases and there are fewer younger adults available to provide care (mainly due to urbanisation and the HIV/AIDS epidemic), the present situation is unlikely to be sustainable. New models are needed which provide the necessary support for older people that are relevant to 21st century demographic and social patterns.

Some of the signs and symptoms possibly indicating serious underlying conditions reported during the survey were treated by using home remedies. While this is to be expected in a resource poor community where money for private care is unavailable and transport to a clinic is a strain on the household budget, this situation remains of concern. Home treatment may delay diagnosis of serious health conditions to a point where effective treatment may become much more costly or invasive. Apart from the burden of disease imposed on the sufferers, this adds to the cost of health care in these communities. While the study did not enquire into the nature of home remedies used to treat such complaints, some of these home treatments were probably traditional medicines. This warrants further research to investigate

whether these treatments are harmful, or whether they are effective enough and whether the money spent on them was cost-effective in the long run. Regardless of the reasons home remedies were used, ineffective treatment wastes time and money and may delay crucial diagnosis and treatment.

The need to improve health care for the elderly with chronic conditions has been identified as a major concern in the study. The poor and the previously disadvantaged have the largest need for these improvements. Strategies to prevent future development of chronic diseases are needed as the country undergoes further development. Being physically active, eating a healthy diet, avoiding the harmful use of alcohol and not smoking or using tobacco products can all reduce the risk of chronic disease in older age. These strategies must include a total population approach to prevent or reduce the burden of unhealthy lifestyles and the emergence of risk factors as well as a high risk approach to diagnose those with risk factors and chronic conditions early and provide cost-effective management. There is an urgent need for the primary health care centres making such diagnoses and issuing chronic medication to inform patients accordingly. For instance, patients need to be informed in the language that they can understand, that insulin should be stored in the refrigerator at all times, not only when opened for use. This is imperative as many pensioners in this study were unable to read the directions on a medication bottle (due to poor vision or because they were illiterate).

There were no signs of the primary health care services involved in any preventative health promotion or any outreach programmes in the community. Health care services in these communities were entirely one way - those who reached the clinics in time and were lucky enough to be in the front of the queue received treatment. The rest did not receive care on that particular occasion. Service quality and user-friendliness of these services need urgent investigation so that the available services reach those who need it most. There was a high level of complaints regarding the availability and quality of the primary health care services noted during the study. When services are delivered in an unfriendly or uncooperative manner, the battle to improve the health of impoverished communities is much more difficult.

Most pensioners in this study have not undergone a hearing test and very few have had their eyes tested lately. Being able to hear and see is crucial, especially when caring for children. Screening tests and hearing aids should be provided to pensioners at local clinics. In addition, there was a huge need for dentures and walking aids in the study. Many pensioners in the study struggled to walk. Some had 'make-shift' walking aids that were not safe (especially wheel chairs). Allied health services (physiotherapists, occupational therapists,

speech and hearing therapist, dieticians and dentists) are crucial when caring for the aged and it is recommended that the Department of Health take note of the unmet need and plan accordingly to improve the provision of such services to these communities. An opportunity exists for pension points to provide screening for certain health conditions, such as blood pressure measurements, blood sugar and cholesterol determinations. Having a social worker or a trained psychologist would greatly assist with improving mental health amongst pensioners. While the researcher is not a trained psychologist or social worker, most pensioners cried and shared their stories after the interview. The need to talk to someone is there. Someone that respects them and can offer assistance where necessary is recommended.

Senior citizen clubs have been very important in providing the aged with a sense of belonging and security against loneliness. Efforts should be made to attract more people to these clubs by making it more accessible, for instance by organising transport. Seniors' Social Clubs can also be used to distribute chronic medicine for older people and do basic tests for blood pressure, diabetes etc. Home-based care has to be strengthened to reach the sick and frail in communities. Senior citizens' clubs can also be visited by a health worker regularly to render basic services.

Many of the common causes of death in older age can be associated with pain and distress. We need to ensure that everyone can live with dignity until the end of their life. Yet in many countries access to effective symptomatic treatment such as pain relief is extremely limited and millions lack access to any form of palliative care. There is a need for such services to be made available as they would have a tremendous effect on the activities of daily living of the pensioners in this study. Furthermore, the concept of assisted living seems to be the only option that would alleviate the suffering of some of the participants in this study and long-term planning for such facilities should be investigated without delay.

While health and social care are crucial for older people, numerous determinants of healthy and active ageing lie beyond the health system. Some of these also affect older people directly. For example, living in a neighbourhood that is safe, and where other older people can be seen on the streets, might encourage older people to engage more frequently in community activities. According to comments by the participants the money they receive is sometimes taken away from them, either by the persons sharing their home or by others. They then do not have enough food to exist on until the next pension pay-out day. While addressing these problems lie outside the scope of the present study, it would be remiss not to note their serious effect on the quality of life of the participants in this study.

While this study did not undertake to investigate the menace of local loan sharks and the short term loans made to pensioners, it was evident during the interviews that this phenomenon occurred in all four communities. Pensioners reported that the interest payable on these loans were 70% to 100% more than the actual amount borrowed. These pensioners are forced to borrow money when they need a lump sum such as to pay school fees and then find themselves captive to these usurious debts. Some reported that the loan sharks keep their ID books (which is illegal) and that they confiscate almost their whole pension at pension pay-out day, leaving them destitute. A better regulated source of access to microloans for these pensioners that can be administered under safe circumstances is urgently needed. There seems to be no legal action taken against these loan sharks and the pensioners caught in their clutches do not dare to report them. Intimidation and actual strong-arm tactics were reported in the study. Further investigation on this matter is urgently needed.

We take for granted that young people have the empathy to treat the elderly with respect, but this was not evident in the study. The communities identified for this study are riddled with violence and crime, rape, gangsters, drugs, alcohol abuse, prostitution, and other appalling crimes such as sexual abuse of children. The social fabric of these communities is weak because of the lifestyles and beliefs of many of the inhabitants. The aged are exposed to such acts and this has an immense emotional impact on their lives. From the survey, it was evident that there should be a concerted effort made by the Department of Social Development to disseminate information through campaigns on the legal rights of older people, on “active ageing” and how to treat older people with respect. Community development workers could be appointed to educate and inform older people and health workers for instance on the rights of older people and the Older Person’s Act.

ADDENDA

Appendix A: Participation Information leaflet and consent form

TITLE OF THE RESEARCH PROJECT:

A study on the health status of the elderly receiving old age pension in urban communities in the City of Cape Town

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Dr. Thashlin Govender, MSc Candidate, Division of Community Health, Department of Interdisciplinary Health Sciences, Faculty of Health Science, Tygerberg Campus, Stellenbosch University

ADDRESS: 55 Carnie Road, Rylands Estate, Cape Town, 7764

CONTACT NUMBER: 083 730 2846

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics **Committee at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

This study will take place at pension points in and around Cape Town. The reason for us doing the study is to investigate your health and health needs of the elderly in your community. We will ask you questions about your home, day to day activities, health and information about children that you care and look after. We will not be taking down any names of you and your family in the interview or your home address. This is done so that no one will be able to identify from whom the information was obtained and who is sick or who became ill in your home. This consent form will not be attached to your answer sheet, so that again no one will be able to find out that this information was provided by you. Once you have completed this consent form, this form will be placed in a sealed box together with all the other forms from your community, for safety purposes. A report of the findings from the study will be sent to the Department of Health and Social Services, and we will try to make the information available in a community newspaper. We will also send a report to your local Health District Manager, so that they know about the health needs of the elderly in your community. You can contact Dr J.M Barnes at 021-9389480 if you have any questions or problems or would like to know the results of this study. You may also contact the Health Research Ethics Committee at Stellenbosch University at 021-938 9207 if you have any

concerns or complaints. You will receive a copy of this information and consent form for your own records.

Why have you been invited to participate?

You have been selected by chance so that the information we gather is a fair representation of the elderly in your community. We want to investigate your health needs, as well as your day to day living.

What will your responsibilities be?

To please answer the interview as best as you can. Allow for the principal investigator to take a blood pressure reading from you as well as read and interpret a medication label.

Will you benefit from taking part in this research?

The results from this study will be summarised and provided to the local, provincial and national government in order to improve planning for health in your community. The results will help us understand the needs of your age group **and while participants will not benefit directly from the study, you may benefit indirectly through the measures described.**

Are there any risks involved in your taking part in this research?

There are no risks involved in taking part in the study. And we assure you of your anonymity.

If you do not agree to take part, what alternatives do you have?

You have a right to not take part or stop the interview; and there will be no implications if this is your decision.

Declaration by participant

By signing below, I agree to take part in a research study entitled, A study on the health status of the elderly receiving old age pension in urban communities in the City of Cape Town

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the or researcher feels it is in my best interests,
- I have given permission to take and use pictures of my home and family members for publication purposes.

Signed at (*place*) on (*date*) 2011.

.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (*name*) declare that:

I explained the information in this document to
I encouraged him/her to ask questions and took adequate time to answer them.
I am satisfied that he/she adequately understands all aspects of the research, as discussed above
I did/did not use a interpreter. (*If a interpreter is used then the interpreter must sign the declaration below.*)

Signed at (*place*) on (*date*) 2011.

.....
Signature of investigator

.....
Signature of witness

Declaration by interpreter

I (*name*) declare that:

I assisted the investigator (*name*) to explain the information in this document to (*name of participant*) using the language medium of Afrikaans/isiXhosa.

We encouraged him/her to ask questions and took adequate time to answer them.
I conveyed a factually correct version of what was related to me.
I am satisfied that the participant fully understands the content of this informed consent document and has had all his/her question satisfactorily answered.

Signed at (*place*) on (*date*)

.....
Signature of interpreter

.....
Signature of witness

Appendix B: Questionnaire



UNIVERSITEIT-STELLENBOSCH-UNIVERSITY

Pensioner Health Study



Faculty of Health Sciences

Good day Sir / Madam

My name is _____. You are invited to take part in a research project carried out by the Medical Faculty of the University of Stellenbosch. We are studying senior citizens and their health needs. Please note that your participation in the study is voluntary. All answers and comments will be kept highly confidential. We will not need your name and promise that no information you give us will be attached to you or your family. Please feel free to ask as many questions, clarify or stop the interview at any time. Thank you for participating in the study. Your contribution is greatly appreciated.

Pension point:**Date:****Time:**

Section A: Demographics								
A1	Age:				A2	Gender:	Male	Female
A3	Marital status:	Married	Single	Widowed	Other:			
A4	Area in which you live:							
A5	How do you get to the pension point?	Car	Bus	Taxi	Walking	Other:		
A6.1	Was it difficult to obtain a pension? If yes, please explain why	Yes	No	A.6.2 Explanation:				
A7	How long did the process of obtaining a pension take?	_____ years			A8	How long have you been collecting pension?	_____ years	
A9	What is your highest educational qualification?	No school	Below Standard 2	Between Standard 3 and 5	High School	University	Other Post school training	Other:
A10	Can you read well?	Yes	No	A11	Can you write well?	Yes	No	

Section B: Economic Status							
B1	Is the pension your only source of income	Yes	No	Unsure	Other:		
B2	Are you working? If yes, please describe	Yes	No	Unsure	Description:		
B3	Type of employment	Full time	Part time	Occasionally	Self employed	Other:	
B4	Please tell us about the people that live in your home?						
	Relationship	Age	Is this person working?		Does this person contribute money to the running of the home?		How much is this person's contribution?
B4.1			Yes	No	Unsure	Yes	No
B4.2			Yes	No	Unsure	Yes	No
B4.3			Yes	No	Unsure	Yes	No
B4.4			Yes	No	Unsure	Yes	No
B4.5			Yes	No	Unsure	Yes	No
B4.6			Yes	No	Unsure	Yes	No
B4.7			Yes	No	Unsure	Yes	No
B4.8			Yes	No	Unsure	Yes	No
B5	Are members of your household dependent on your pension?					Yes	No
B6.1	Do you receive any monthly income from family or friends?	Yes	No	B6.2 Relationship:		B6.3 How much do they contribute? R	
B7.1	Before you became a pensioner, did you work? If yes, please describe the type of work you did.	Yes	No	B7.2 Describe:			
B8	At what age did you retire (stopped working)?	Yes	No	B9.2 Describe:			
B9.1	Did you have to stop working/retire?	Yes	No	B10.2 Specify which:			
B10.1	At the time of retirement, did you have a pension fund or retirement annuity?	Yes	No				
B11	Are you able to afford your daily and living expenses if your pension was discontinued?	Yes	No				

Section C: Domicile								
C1	What type of house do you live in?	Shack	Shack in backyard	RDP house	State funded Flat	House that you rent	House that you own	Other:
C2.1	Do you have problems getting around in the home?	Yes	No	C2.2 Describe:				

C3.1	Do you have a bathroom to wash? If no, where do you wash?	Yes	No	C3.2 Describe:					
C4	Do you have a toilet at home?	Yes	No	C5	Where is the toilet located?	Inside	Outside	Communal	
C6	Do you have water in your home?	Yes	No	C7	Where is the tap situated	Inside	Outside	Communal	
C8	Do you have electricity in your home?	Yes	No	C9	Do you have a:	Cell phone	Home phone	No phone	Radio

Section D: Day to day living

D1	Do you have a caregiver?	Yes	No	D2	Is your caregiver a:	a)Family member b)Friend c)Specify:		
D3	Do you pay your caregiver?	Yes	No	D4	How much do you pay your caregiver per month?	R_____		
D5	Do you need help in washing yourself?	Yes	No	D6	Do you need help in the toilet?	Yes	No	
D7	Do you need help in dressing?	Yes	No	D8	Do you need help in grooming (eg. Hair, nail clipping etc)?	Yes	No	
D9	Do you need someone to prepare your food?	Yes	No	D10	Do you need help with cleaning the home and household chores?	Yes	No	
D11	Do you need assistance with washing your clothes?	Yes	No	D12	Do you need someone to read for you? For example: letters, the newspaper	Yes	No	
D13	Do you need someone to give you your medication?	Yes	No	D14	Please pick a pill bottle from the box and read the label out loud	Able to read	Not able to read	
D15	Who does your grocery shopping?			D16	How do you get to the shopping centre?			
D17	Do you belong to a senior citizen club?	Yes	No	D18	Do you find the youth respectful of you?	Yes	No	

Section E: Health Status, utilization of health facilities and health needs

E1	Do you smoke?	Yes	No	E2	Do you consume alcohol?	Yes	No
E3	Have you ever smoked?	Yes	No	E4	Do you have members in your home using alcohol	Yes	No
E5	Do you have members in your home using drugs	Yes	No	Unsure	E6	Blood pressure reading of respondent	
E7	How many meals do you normally eat per day			E8	Do you eat special foods because of your health?	Yes	No
E9	Is it expensive to buy these special foods?	Yes	No	E10	Is it difficult to find these products?	Yes	No
E11	Generally when you are sick, who do you go to?	Clinic	Private doctor	E12	How much do you pay for treatment at the clinic or doctor?	R_____	
E13	What mode of transport do you use to get to the clinic or doctor?			E14	How much do you pay for transport to the clinic or doctor?	R_____	
E15	Have you been admitted to hospital in the past 6 months?	Yes	No	E16	What were you hospitalized for?		
E17	Which hospital did you go to?			E18	Have you ever needed an ambulance?	Yes	No
E19	What illnesses do you suffer from and are you on medication for these specific illnesses?						
		Tick box	Yes/No			Tick box	Yes/No
1) Diabetes				6) Depression			
2) Hypertension				7) Asthma			
3) Arthritis (joint stiffness)				8) Cardiovascular disease (Heart disease)			
4) Tremors				9) Malignancies (Cancer)			
5) Cataracts				10) TB			
11) Other, please specify:							
E20	Do you use any traditional medicine to treat your illnesses?	Yes	No	E21	Do you buy the medication needed to treat these illnesses?	Yes	No
E22	Do you collect the medication needed to treat these illnesses for free from a clinic?	Yes	No	E23	How often do you collect the medication?		
E24	How long do you wait at the clinic to see a health professional? Estimate:	hours		E25	Do you find the staff at the clinic helpful?	Yes	No
E26	Do you have to come back to the clinic more than once before receiving your medication?	Yes	No	E27	Are you satisfied with the health care you receive at your clinic?	Yes	No
E28	Do you need to buy any medication that the clinic does not provide you	Yes	No	E29	How much per month do you pay for the medication?	R_____	

E30	Can you see well?	Yes	No	E31	Do you wear spectacles?	No	Some of the time	All of the time	
E32	If yes, do your spectacles need changing?	Yes	No	E33	How long have you had the spectacles?				
E34	If you need to have your eyes tested where do you go?				E35	Do you have trouble hearing?	Yes	No	
E36	Have you ever had your hearing tested?	Yes	No	E37	If yes, do you wear a hearing aid?	Yes	No		
E38	Where did you get your hearing aid from?				E39	Have you suffered from Diarrhoea in the last 14 days?	Yes	No	
E40	Have you been to a dentist in the past 12 months?	Yes	No	E41	Can you chew properly?	Yes	No		
E42	Do you need dentures?	Yes	No	E43	Do you suffer from toothaches?	Yes	No		
E44.1	Do you use a walking aid? If so, describe	Yes	No	E44.2 Describe:					
E45	Do you think you need a walking aid?	Yes	No	E46	Do you need a wheel chair?	Yes	No		
E47	Have you ever had TB?	Yes	No	E48	Have you ever had a stroke?	Yes	No	Unsure	
E49	Have you ever had a heart attack?	Yes	No	Unsure	E50	Do you have people in your home suffering from HIV?	Yes	No	Unsure
E51	Do you have people in your home suffering from TB?	Yes	No	Unsure	E52	Has anyone ever visited your home promoting health?	Yes	No	Unsure
E53	How many times per day do you go to the toilet?				E54	Are you able to control your bladder?	Yes	No	Unsure
E55	Do you have trouble remembering information?	Yes	No	Unsure	E56	Are you forgetful?	Yes	No	Unsure
E57	Have you fallen 2 or more times in the past 12 months?	Yes	No	Unsure	E58	Do you have a problem hearing people?	Yes	No	Unsure
E59	Do you feel like you have been ill-treated by a family or house member?	Yes	No	Unsure	E60	Have you even been beaten/hit by a family or house member?	Yes	No	Unsure

Section F: The Geriatric Depression Scale

F1	Are you basically satisfied with your life?	Yes	No	F16	Do you often feel downhearted and blue?	Yes	No
F2	Have you dropped many of your activities and interests?	Yes	No	F17	Do you feel pretty worthless the way you are now?	Yes	No
F3	Do you feel that your life is empty?	Yes	No	F18	Do you worry a lot about the past?	Yes	No
F4	Do you often get bored?	Yes	No	F19	Do you find life very exciting?	Yes	No
F5	Are you hopeful about the future?	Yes	No	F20	Is it hard for you to get started on new projects?	Yes	No
F6	Are you bothered by thoughts you cannot get out of your head?	Yes	No	F21	Do you feel full of energy?	Yes	No
F7	Are you in good spirits most of the time?	Yes	No	F22	Do you feel that your situation is hopeless?	Yes	No
F8	Are you afraid that something bad will happen to you?	Yes	No	F23	Do you think that most people are better off than you are?	Yes	No
F9	Do you feel happy most of the time?	Yes	No	F24	Do you frequently get upset over things?	Yes	No
F10	Do you often feel helpless?	Yes	No	F25	Do you frequently feel like crying?	Yes	No
F11	Do you often get restless and fidgety?	Yes	No	F26	Do you have trouble concentrating?	Yes	No
F12	Do you prefer to stay home, rather than going out and doing new things?	Yes	No	F27	Do you enjoy getting up in the morning?	Yes	No
F13	Do you frequently worry about the future?	Yes	No	F28	Do you prefer to avoid social gatherings?	Yes	No
F14	Do you feel you have more problems with memory than most?	Yes	No	F29	Is it easy for you to make decisions?	Yes	No
F15	Do you think it's wonderful to be alive now?	Yes	No	F30	Is your mind as clear as it used to be?	Yes	No

Section G: Dependent details (Children in school only)

G1	Relationship	Age	Educational status of child	Where is the mum?	Where is the dad?	Does the child have a disability?	
G1.1						Yes	No
G1.2						Yes	No
G1.3						Yes	No

G1.4						Yes	No
G1.5						Yes	No
G1.6						Yes	No
G1.7						Yes	No
G2	Is there any specific reason why the child/children stay with you?						
G3	Was it your decision for the child/children to live with you?			Yes	No	Unsure	
G4	Are you the only one responsible for looking after the child?			Yes	No	Unsure	
G5	Are you the child's legal guardian?	Yes	No	G6	How many of the 12 months per year does the child stay with you?	/	
G7	Do you receive an income from the parent/s to look after the child?			Yes		No	Unsure
G8	How much of income do you receive per month for the care of the children?	R		G9	Is the income enough to look after the child?	Yes	No
G10	Do you receive a social grant for each of the children?	Yes	No	G11	Is the income enough to look after the child/children?	Yes	No
G12.1	Is the child often ill? If yes, what have been some of the illnesses in the past two months?	Yes	No	G12.2 Describe:			
G13	Generally when the child is sick, where do you get help?	Clinic	Private doctor	Other: Specify	G14	How much do you pay for treatment at the clinic or doctor for the child?	R
G15	What mode of transport do you use to get the child to the clinic or doctor?				G16	How much do you pay for transport to the clinic or doctor?	R
G17	Has the child been admitted to hospital in the past 6 months?	Yes	No	G18	What was the child hospitalized for?		
G19	How many meals per day do you provide for the child?						
G20	Do you provide food for the child every day?				Yes	No	Unsure
G21	Do you provide clothing for the child?				Yes	No	Unsure
G22	Do you pay school fees for the child?				Yes	No	Unsure
G23	Do you have buy books and stationery for the child?				Yes	No	Unsure
G24	Have you been called to school for the child's learning progress?				Yes	No	Unsure
G25	Have you been called for school for the child's behaviour problems?				Yes	No	Unsure
G26	Who helps the child with his/her school work?						
G27	Can you afford to send the child to school until Matric?	Yes	No	E28	Can you afford to send the child to university/technikon or any post school training	Yes	No
G29	What do you want the child to do when he/she finishes matric?						
G30	Is the community you live in safe?						
G31	Have you or anyone living in your home been a victim of crime?						

Thank you for your time and assistance with our study!!!

Appendix C: Photographs from the study sites



Photograph 1: Those elderly pensioners who are wheelchair-bound are pushed by a helper from great distances to reach the payout point.



Photograph 2: Blind pensioners are dependent on a helper to get their pension. The variety of walking aids is also demonstrated in this photograph.



Photograph 3: Note the wheelchair repaired by inserting a plastic garden chair in the place of the broken chair.



Photograph 4: The white light pickup van (known as a "bakkie" in South Africa) parked here belongs to one of the informal and most often illegal 'loan sharks' who are waiting to collect the pension from the pensioner as back-payment for outstanding debt. They often keep the pensioner's ID book between payment dates in order to ensure payment. This is illegal.



Photograph 5: These cars (referred to as "Cressidas" from a popular model used for this purpose) can be hired to transport pensioners from door to door for the cost of R20. The variety of goods on sale outside the payout point can also be seen.



Photograph 4: The raw meat on the table to the left is a common sight at payout points. Some pensioners said that this is the only day in the month that they can afford to buy some meat. The men lounging against the wall were pointed out as those who often follow the pensioners out of the pay point premises and rob them of their money. There is no secure transport back home for these pensioners.

References

1. World Economic Forum. 2012. *Global Population Ageing: Peril or Promise?* Global Agenda Council on Ageing Society.
http://www3.weforum.org/docs/WEF_GAC_GlobalPopulationAgeing_Report_2012.pdf (accessed 11 June 2012).
2. Deloitte Consulting. 2007. *Serving the ageing population*. Deloitte Development LLC.
http://www.deloitte.com/assets/Dcom-Global/Local%20Assets/Documents/dtt_AgingCitizen032607.pdf (accessed 12 May 2012).
3. United Nations. 2009. *World Population Ageing*. Department of Economic and Social Affairs.
http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf (accessed 10 January 2012).
4. United Nations Population Division. 2011. *World Population Prospects: The 2010 Revision*. <http://esa.un.org/unpd/wpp> (accessed 13 March 2012).
5. Harpham T. 2009. Urban health in developing countries: What do we know and where do we go? *Journal of Health and Place*, 15:107-116.
6. United Nations Development Programme. 1998. Chapter 4: *Unequal Human Impacts of Environmental Damage*. In: Human Development Report 1998. New York: Oxford University Press. pp. 66-85.
7. Harpham T., Molyneux C. 2001. Urban health in developing countries: A review. *Progress in Development Studies*, 1:113–137.
8. World Bank. 2011. *Urban Poverty Site*. www.worldbank.org/urban/poverty/index.html (accessed 2 March 2012).
9. World Health Organization. [undated]. *Risk factors of ill health among older people*. <http://www.euro.who.int/en/what-we-do/health-topics/Life-stages/healthy-ageing/facts-and-figures/risk-factors-of-ill-health-among-older-people> (accessed 17 February 2012).
10. World Health Organization. 2012. *Global brief for World Health Day*. http://www.who.int/world_health_day/2012 (accessed 9 June 2012).
11. Christensen K., Doblhammer G., Rau R., Vaupel JW. 2009. Ageing populations: the challenges ahead. *Lancet*. 374:1196-1208.
12. Kinsella K., He W. *An Aging World: 2008*. 2009. International Population Reports. <http://www.aicpa.org/research/cpahorizons2025/globalforces/socialandhumanresource/downloadabledocuments/agingpopulation.pdf> (accessed 6 March 2012).

13. Organization for Economic Co-operation and Development. 1997. *Ageing in OECD Countries: A Critical Policy Challenge*. OECD Social Policy Studies, Paris. pp. 111.
14. Xian L. 1998. The Effect of Education on Mortality among Older Taiwanese and its Pathways. *Journal of Gerontology: Social Sciences*. 53:S71-S82.
15. Kinsella K., Phillips DR. 2005. *Global Aging: The Challenge of Success*. Population Bulletin 60, no. 1.
16. Cohen B., Menken J. 2006. *Aging in Sub-Saharan Africa, Recommendation for Furthering Research*. Panel on Policy Research and Data Needs to Meet the Challenge of Aging in Africa. National Research Council of the National Academies, The National Academic Press, Washington, D.C.
17. Kinsella K., Ferreira M. 1997. *Ageing Trends: South Africa*. <http://www.census.gov/population/international/files/ib-9702.pdf> (accessed 14 May 2012).
18. City of Cape Town Strategy and Planning Directorate. 2010. *Demographics Scenario. Discussion Paper*. <http://www.capetown.gov.za/en/sdf/Documents/Nov2010/DemographicsDiscussionPaperAugust2010.pdf> (accessed on 1 March 2012).
19. Haldenwang B. 2010. *2010: Key Demographic Trends for South Africa to 2030*. Institute for Futures Research.
20. Marais S, Eigelaar-Meets I. 2007. *The social wellbeing of older persons in the Western Cape: an overview*. <http://www.saopf.org.za/policies/DR%20Marias%20report.pdf> (accessed 6 March 2012).
21. Mathers CD, Loncar D. 2006. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 3: e442.
22. United Nations. 2002. *World Population Ageing: 1950-2050*. New York: Population Division, Department of Economic and Social Affairs, United Nations.
23. South African Department of Social Development. Undated. *Implementation Strategy Older Persons Legislation*. http://www.saopf.org.za/policies/Implementation%20Strategy%20V1%200a%20_3_.pdf (accessed 6 March 2012).
24. Woolaard I, Harttgen K, Stephan K. 2010. *The evolution and impact of social security in South Africa*. Paper prepared for the Conference on "Promoting Resilience through Social Protection in Sub-Saharan Africa", organised by the European Report of Development in Dakar, Senegal, 28-30 June, 2010. Downloaded on 8 May 2012 from: <http://erd.eui.eu/media/BackgroundPapers/Woolard-Harttgen-Klasen.pdf>.

25. Amoateng Y, Heaton T, Kalule-Sabiti I. 2007. *Living arrangements in South Africa*. In: Amoateng, Y and Heaton, T (eds) *Families and households in Post-Apartheid South Africa: Socio-Demographic perspectives*. Pretoria: HSRC. pp. 1-198.
26. Statistic South Africa. 2010. *Social profile of South Africa, 2002–2009*. Report No. 03-19-00. Pretoria: Statistics South Africa.
27. Statistics South Africa. 2007. *Community Survey 2007*. Statistical Release P0301. <http://www.statssa.gov.za/publications/P0301/P0301.pdf> (accessed 2 February 2012).
28. Roux N. 2009. *Migration and urbanization - Towards a 10-year review of the population policy implementation in South Africa (1998-2008)*. Department of Social Development. pp. 77.
29. City of Cape Town. 2006. Strategic Development Information and GIS Department. *State of Cape Town Report 2006*. Development Issues in Cape Town. http://www.capetown.gov.za/en/Water/WaterservicesDevPlan/Documents/WSDP_2011_2012/D3_GOTO_State_of_CapeTown_2006_FINAL_Draft_30Oct.pdf (accessed on 5 July 2012).
30. Brender N. 2012. *Researching the Urban Dilemma: Urbanization, Poverty and Violence*. International Development Research Centre. http://www.idrc.ca/EN/Programs/Social_and_Economic_Policy/Governance_Security_and_Justice/Documents/Researching-the-Urban-Dilemma-Baseline-summary_e.pdf (accessed 6 March 2012).
31. United Nations. 2008. *World Urbanization Prospects: The 2007 Revision*. http://secint24.un.org/esa/population/publications/wup2007/2007WUP_Highlights_web.pdf. (accessed on 26 June 2012).
32. Krishna A. 2006. Pathways out of and into poverty in 36 villages of Andhra Pradesh, India. *World Development*, 34:271-288.
33. Eisenberg JNS, Scott JC, Porco T. 2007. Integrating public health control strategies: Balancing water sanitation and hygiene interventions to reduce diarrheal disease burden. *American Journal of Public Health*, 97:1-7.
34. Ramashala MF. 2001. *Living arrangements, poverty and the health of older persons in Africa*. United Nations Population Bulletin, Special Issue No. 42/43. University of Durban-Westville, Durban.
35. Help Age International. No date. *The Ageing and Development Report: a summary. Poverty, Independence and the World's Older People*. www.helpage.org/download/4c461a5bf010d/ (accessed 23 May 2012).
36. Bastos A, Casaca SF, Pereirinha J. 2009. Women and poverty: a gender-sensitive approach. *The Journal of Socio-Economics*, 38: 764-778.

37. Audit Commission. 2004. *Older People – Independence and Wellbeing*. The challenge for Public Services. http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/OlderPeople_overarch.pdf (accessed 17 June 2012).
38. Coovadia H, Jewkes R, Barron P, Sanders D, McIntyre D. 2009 The health and health system of South Africa: Historical roots of current public health challenges. *Lancet*, 374: 817.
39. Harris B, Goudge, J, Ataguba JE, McIntyre D, Nxumalo N, Jikwana S, Chersich M. 2011. Inequities in access to health care in South Africa. *Journal of Public Health Policy*, 32: S102–S123.
40. Weinberger M, Darnell JC, Tierney WM, Martz BL, Hiner SL, Barker J, Neill PJ. 1986. Self-rated health a predictor of hospital admission and nursing home placement in elderly public housing tenants. *American Journal of Public Health*, 76:457-459.
41. Luppá M, Luck T, Weyerer S, König HH, Brähler E, Riedel-Heller SG. 2010. Prediction of institutionalization in the elderly. A systematic review. *Ageing*, 39: 31-8.
42. UN General Assembly. 2012. *Political declaration of the High-level Meeting of the General Assembly on the Prevention and Control of the Non-communicable diseases*. http://www.un.org/ga/search/view_doc.asp?symbol=A/66/L.1.1 (accessed 22 April 2012).
43. Joubert J, Bradshaw D. 2006. *Population ageing and health challenges in South Africa*. In: Steyn K, Fourie J, Temple N, eds. *Chronic diseases of lifestyle in South Africa 1995–2005*. Technical report. South African Medical Research Council. <http://www.mrc.ac.za/chronic/cdlchapter15.pdf> (accessed 21 June 2012).
44. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, Seeman T, Tracy R, Kop WJ, Burke G, McBurnie MA, Cardiovascular Health Study Collaborative Research Group. 2001. Frailty in Older Adults: Evidence for a Phenotype. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, 56: M146–M156.
45. Shamlivan T, Talley KMC, Ramakrishnan R, Kane RL. 2012. Association of frailty with survival: A systematic literature review. *Ageing Research Reviews*, article in press.
46. Lang PO, Michel JP, Zekry D. 2009. Frailty Syndrome: A Transitional State in a Dynamic Process. *Gerontology*, 55: 539-549.
47. Charlton KE., Rose D. 2001. Nutrition among older adults in Africa: the situation at the beginning of the millennium. *The Journal of Nutrition*, 131:2424S-8S.
48. Ball MM, Perkins FJ, Whittington BR, Connell C, Hollingsworth SV, King CL, Elrod S, Combs BL. 2004. Managing decline in assisted living: the key to aging in place. *The*

- Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 59: S202-12.
49. de Klerk M, Drimie S, Aliber M, Mini S, Mokoena R, Randela R, Modiselle S, Roberts B, Vogel C, de Swardt C, Kirsten J. 2004. *Food security in South Africa: key policy issues for the medium term*.
http://www.sarpn.org/documents/d0000685/Food_security_SA_January2004.pdf
(accessed on 11 May 2012).
 50. World Health Organization. 2005. *Preventing chronic diseases - a vital investment*. Geneva: World Health Organization.
http://www.who.int/chp/chronic_disease_report/en/ (accessed 24 April 2012).
 51. Granados JAT. 2003. Economic, demographic, and epidemiologic transition: an interdisciplinary glossary. *International Journal of Epidemiology and Community Health*, 57: 929-935.
 52. Bradshaw D. 2012. Leading causes of death in older persons (60+).
<http://www.sahealthinfo.org/bod/causes.htm> (accessed on 11 July 2012).
 53. Zaidi A, Grech A. 2007. Pension Policy in EU25 and its Impact on Pension Benefits. *The Journal of Poverty and Social Justice*, 15: 229-311.
 54. Gilliland N, Picado LE. 2000. Elder abuse in Costa Rica. *Journal of Elder Abuse and Neglect*, 12:73–87.
 55. Carp RM. 2000. *Elder abuse in the family: an interdisciplinary model for research*. New York: Springer. pp. 237.
 56. Bertrand M, Mullainathan S, Miller D. 2003. Public Policy and Extended Families: Evidence from Pensions in South Africa. *The World Bank Economic Review*, 17: 27–50.
 57. Duflo, E. 2000. Child Health and Household Resources in South Africa: Evidence from the Old Age Pension Program. *American Economic Review Papers and Proceedings*, 393–398.
 58. Myburgh NG, Solanki GC, Smith MJ, Ratilal L. 2005. Patient satisfaction with health care providers in South Africa: the influences of race and socioeconomic status. *International Journal for Quality Health Care*, 17: 473-477.
 59. Ferreira M, Charlton KE, Mosaval Y. 1998. *Retired farm workers, farm evictions and the 'dop' system: An exploratory study in three towns in the Western Cape Province*. HSRC/UCT Centre for Gerontology, Cape Town.
 60. Joubert JD, Swart D, Reddy P. 1998. *Knowledge, perceptions and needs of older persons with reference to 1999, the International Year of Older Persons: A qualitative study in the Eastern Cape*. Unpublished research report. Medical Research Council, Cape Town.

61. Harper S. 2010. *Demographic challenges and social security. Societal challenges and the capacity to adapt: Social Security in an ageing world*. Regional Social Security Forum for Europe, Warsaw, Poland, 3-5 March 2010.
62. Leeson GW. 2004. *The Demographics and Economics of UK Health and Social Care for Older Adults*. Oxford Institute of Ageing.
http://www.ageing.ox.ac.uk/files/workingpaper_304.pdf (accessed 27 July 2012).
63. Zweifel P, Felder S, Werblow A. 2004. Population Ageing and Health Care Expenditure: New Evidence on the "Red Herring". *Geneva Papers on Risk and Insurance: Issues and Practice*, 29: 652-666.
64. Seshamani M, Gray A. 2004. Time to death and health expenditure: an improved model for the impact of demographic change on health care costs. *Age and Ageing*, 33: 556-561.
65. Darkwa OK, Mazibuko FNM. 2002. Population aging and its impact on elderly welfare in Africa. *International Journal of Aging and Human Development*, 54: 107–123.
66. Chigali GM, Marais M, Mpfu RMB. 2002. An investigative study of the experiences of elderly people in a South African Black Township. *South African Journal of Physiotherapy*, 58: 21–26.
67. Burns J, Keswell M, Leibbrandt M. 2005. Social assistance, gender, and the aged in South Africa. *Feminist Economics*, 11: 103–115.
68. Republic of South Africa. Constitution of the Government of South Africa. Act No. 108 of 1996 as amended. Adopted 8 May 1996. Pretoria: Government Printer. ISBN 0-620-20214-9.
69. Case A, Deaton A. 1998. Large cash transfers to the elderly in South Africa. *Economics Journal*, 108: 1330-1361.
70. Pulver C, Ratichek J. 2011. *CGAP G2P Research Project, South Africa Country Report*. http://www.cgap.org/gm/document-1.9.57012/South_Africa_Public_G2P_Country_Report_Final.pdf (accessed 7 February 2012).
71. Edmonds E, Mammen K, Miller D. 2003. *Rearranging the Family? Income Support and Elderly Living Arrangements in a Low Income Country*. Discussion Paper, Dartmouth College. http://www.nber.org/papers/w10306.pdf?new_window=1 (accessed 14 July 2012).
72. Bertrand M, Mullainathan S, Miller D. 2003. Public Policy and Extended Families: Evidence from Pensions in South Africa. *The World Bank Economic Review*, 17: 27–50.
73. Department of Social Development, South African Social Security Agency, United Nations International Children's Fund. 2012. *The South African Child Support Grant*

- Impact Assessment: Evidence from a survey of children, adolescents and their households.* http://www.unicef.org/southafrica/SAF_resources_csg2012s.pdf (accessed on 10 July 2012).
74. Last JM. Undated. *Encyclopedia of Public Health.* <http://www.enotes.com/cross-sectional-study-reference/cross-sectional-study> (accessed on 12 July 2012).
 75. Timmreck TC. 2002. *An introduction to Epidemiology.* 3rd ed. Sudbury MA: Jones & Bartlett. pp. 244-252.
 76. Dos Santos Silva I. 1999. *Cancer Epidemiology: Principles and methods.* Chapter 10: Cross-sectional surveys. International Agency for Research on Cancer. WHO, Geneva. pp. 213-229.
 77. Owens LK. 2005. *Introduction to survey research design.* www.srl.uic.edu/seminars/surveydesign.DOC (accessed 14 July 2012).
 78. National Center for Health Statistics, Centers for Disease Control and Prevention. 2010. *Ninth conference on health survey research methods*, Peachtree City, Georgia. Eds. Aday LA, Cynamon M. Proceedings May 2010, p. 271-355
 79. Bostoan K, Bilukha OO, Fenn B, Morgan OW, Tam CC, ter Veen A, Checchi F. 2007. Methods for health surveys in difficult settings: charting progress, moving forward. *Emerging Themes in Epidemiology*, 4:13.
 80. Carlson MDA, Morrison RS. 2009. Study design, precision, and validity in observational studies. *Journal of Palliative Medicine*, 12: 77-82.
 81. Katzenellenbogen JM, Joubert G, Abdool Karim SS. 1999. *Epidemiology A Manual for South Africa.* Cape Town: Oxford University Press South Africa, pp. 295.
 82. United Nations Department of Economic and Social Affairs. 2005. *Designing household survey samples: Practical Guidelines.* Studies in Methods. ST/ESA/STAT/SER.F/98.
 83. Lohr SL. 2009. *Sampling: Design and Analysis.* 2nd ed. Boston, USA: Brookes, Cole. pp. 50-51.
 84. Kelley K, Clark B, Brown V, Sitzia J. 2003. Good practice in the conduct and reporting of survey research. *International Journal of Quality Health Care*, 15: 261-266.
 85. Groves RM, Lepkowski JM, Wagner J, Kirgis N. 2010. Responsive Design in a Continuous Survey: Designing for the Trade-off of Standard Errors, Response Rates, and Costs. Paper in: NCHS National Center for Health Statistics, Centers for Disease Control and Prevention. Ninth conference on health survey research methods, Peachtree City, Georgia. Eds. Aday LA, Cynamon M. Proceedings May 2010, p. 273-283.
 86. Crossley TF, Kennedy S. 2002. The reliability of self-assessed health status *Journal of Health Economics*, 21: 643-658.

87. Jylhä M. 2009. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science & Medicine*, 69: 307-316.
88. Layes A, Yukiko A, Kephart G. 2012. Whiners and deniers – What does self-rated health measure? *Social Science & Medicine*, 75: 1-9.
89. Arnadottir SA, Gunnarsdottir ED, Stenlund H, Lundin-Olsson L. 2011. Determinants of self-rated health in old age: A population-based, cross-sectional study using the International Classification of Functioning. *BMC Public Health*.
<http://www.biomedcentral.com/1471-2458/11/670> (accessed 10 January 2012).
90. World Health Organization. 1996. *Health interview surveys: Towards international harmonization of methods and instruments*. Copenhagen: 1996. WHO Regional Publications, European series no. 58. 1996, p. 31-38.
91. Idler EL, Benyamini Y. 1997. Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behaviour*, 38:21-37.
92. Benyamini Y, Leventhal EA. 1999. Self-assessments of health - what do people know that predicts their mortality? *Research on Aging*, 21: 477-500.
93. De Salvo KB, Bloser N, Reynolds K, He J, Muntner P. 2006. Mortality prediction with a single general self-rated health question. *Journal of General Internal Medicine*, 21: 267-275.
94. Murata C, Kondo T, Tamakoshi K, Yatsuya H, Toyoshima H. 2006. Determinants of self-rated health: Could health status explain the association between self-rated health and mortality? *Archives of Gerontology and Geriatrics*, 43: 369-380.
95. Hyland ME. 1993. The validity of health assessments - resolving some recent differences. *Journal of Clinical Epidemiology*, 46: 1019-1023.
96. Bjorner JB, Fayes P, Idler E. 2005. Self-rated health. In: Fayes P, Hays R (eds). *Assessing quality of life in clinical trials* (2nd edition). Oxford: Oxford University Press, pp. 309-323.
97. Gilbert L, Soskolne V. 2003. Self-assessed health - a case study of social differentials in Soweto, South Africa. *Health and Place*, 9: 193-205.
98. Mazumdar S, Gerdtham UG. 2011. Heterogeneity in self-assessed health status among the elderly in India. *Asia-Pacific Journal of Public Health* 2011, unpublished.
99. Powdthavee N. 2009. Ill-health as a household norm: Evidence from other people's health problems. *Social Science & Medicine*, 68: 251-259.
100. Suchman L, Jordan B. 1990. Interactional troubles in face-to-face interviews. *Journal of the American Statistical Association*, 85: 232-241.
101. Hébert R, Bravo G, Korner-Bitensky N, Voyer L. 1996. Refusal and information bias associated with postal questionnaires and face-to-face interviews in very elderly subjects. *Journal of Clinical Epidemiology*, 49: 373-381.

102. Thorslund M, Wärneryd B. 1990. Surveying the elderly about health, medical care and living conditions. Some issues of response inconsistency. *Archives of Gerontology and Geriatrics*, 11: 161-173.
103. Randall WL, Prior SM, Skarborn M. 2006. How listeners shape what tellers tell: Patterns of interaction in life story interviews and their impact on reminiscence by elderly interviewees. *Journal of Aging Studies*, 20, 381-396.
104. Van den Hoonaard DK. 2005. "Am I doing it right?" Older widows as interview participants in qualitative research. *Journal of Aging Studies*, 19: 393-406.
105. Pew Research Centre. 2012. *Questionnaire design*. <http://www.people-press.org/methodology/questionnaire-design/> (accessed on 5 August 2012).
106. McColl E, Jacoby A, Thomas L, Soutter J, Bamford C, Steen N, Thomas R, Harvey E, Garratt A, Bond J. 2001. Design and use of questionnaires: a review of best practice applicable to surveys of health service staff and patients. *Health Technology Assessments*, 5: 1-266.
107. Moser CA, Kalton G. 2001. *Survey methods in social investigation*. 2nd ed. Aldershot: Gower; 1971. as quoted in McColl E, Jacoby A, Thomas L, Soutter J, et al. Design and use of questionnaires: a review of best practice applicable to surveys of health service staff and patients. *Health Technology Assessments*, 5: 43.
108. Global Health University. 2011. *Survey methodologies*. Certificate in Global Health Research , Unite for Sight Global Health University. <http://www.uniteforsight.org/global-health-university/research-certificate> (accessed on 2 August 2012).
109. World Medical Association. 2000. *Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects*. Geneva: World Medical Association. <http://www.fda.gov/ohrms/dockets/dockets/06p0147/06p-0147-c000001-02-vol1.pdf> (accessed 24 January 2012).
110. Department of Health. 2000. *Guidelines for Good Clinical Practice in the Conduct of Clinical Trials in Human Participants in South Africa*. Pretoria, South Africa: Department of Health. http://www.doh.gov.za/docs/policy/trials/trials_01.html (accessed 26 July 2012).
111. Council of American Survey Research Organizations. 2011. *Code of Standards and Ethics for Survey Research*. Monograph. New York: CASRO. pp. 1-23.
112. World Health Organization. 2004. *Guidelines for conducting community surveys on injuries and violence*. Ch. 8, *Ethical aspects of conducting a survey*. Eds: Sethi D, Habibula S, McGee K, Peden M, Bennett S, Hyder AA, Klevens J, Odero W, Suriyawongpaisal P. Geneva: WHO. pp. 73-74.

113. Case A, Deaton A. 2001. Large Cash Transfers to the Elderly in South Africa. *The Economic Journal*, 108:1330-1361.
114. Case A. 2004. *Does Money Protect Health Status? Evidence from South African pensions*. Chapter in the National Bureau of Economic Research, *Perspectives on the Economics of Aging*, p. 287-312.
115. Boon H, Robert ACR, James S, van den Borne B, Williams E, Reddy P. The Impact of a Community-based Pilot Health Education Intervention for older people as Caregivers of Orphaned and sick children as a result of HIV and AIDS in South Africa. *Journal of Cross-Cultural Gerontology*, 24:373-389.
116. Republic of South Africa. 2006. Older Person Act, Act 13 of 2006. <http://www.capegateway.gov.za/eng/pubs/acts/prov/2006/153852> (accessed 5 April 2012).
117. Huchzermeyer M, Karam A. 2006. The continuing challenge of informal settlements: An introduction. In, Huchzermeyer, M. and Karam, A. (eds.) *Informal Settlements – A Perpetual Challenge?* Cape Town: Juta/University of Cape Town Press, pp. 318.
118. Bless C, Higson-Smith C. 1995. *Fundamentals of Social Research Methods, An African Perspective*. 2nd Edition. Kenwyn: Juta & Co Ltd, pp. 164.
119. Neuman WL. 1997. *Social Research Methods Qualitative and Quantitative Approaches*. 3rd Edition. Needham Heights: Allyn & Bacon, pp. 560.
120. United Nations Department of Economic and Social Affairs. 2005. *Designing household survey samples: Practical Guidelines*. Studies in Methods. ST/ESA/STAT/SER.F/98.
121. Valanis B. 1992. *Epidemiology in Nursing and Health Care*. 2nd Edition. Norwalk: Appleton & Lange, pp. 444.
122. The International Epidemiological Association European Group. Undated. *Epidemiology Deserves Better Questionnaires*. <http://www.iea-europe.org/download/Questionnaires.pdf> (accessed 2 March 2012).
123. Yesavage JA, Brink TL, Rose TL, et al. 1982. Development and validation of a geriatric depression screening scale: a preliminary report. *Journal of Psychiatric Research*, 17:37-49.
124. Fujii J. 1994. Reference values of laboratory tests in elderly subjects--blood pressure. *Nihon Ronen Igakkai Zasshi*, 31: 262-269.
125. Aronow WS, Fleg JL, Pepine CJ, Artinian NT, Bakris G, Brown AS, Ferdinand KC, Forcica MA, Frishman WH, Jaigobin CJ *et al.* 2011. Expert Consensus Document on Hypertension in the Elderly: A Report of the American College of Cardiology Foundation Task Force on Clinical Expert Consensus Documents Developed in

- Collaboration With the American Academy of Neurology. *Journal of the American Society of Hypertension*, 5: 259-352.
126. Bachmann MO, Booyesen FLR. 2003. Health and economic impact of HIV/AIDS on South African households: A cohort study. *BMC Public Health*, 3:14.
 127. Padayachee V. 2006. *The Development Decade: Economic and Social Change in South Africa, 1994-2004*. HSRC Press, pp 471.
 128. Barer, BM. 1994. Men and Woman ageing differently. *The International Journal of Aging and Human Development*, 38:29-40.
 129. Dyson T. 2012. Causes and Consequences of Skewed Sex Ratios. *Annual Review of Sociology*, 38: 443-461.
 130. Central Intelligence Bureau, United States of America. 2012. *The World Fact Book*. <https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html> (accessed 7 August 2012).
 131. Transgenerational design matters (website of architectural and industrial design for aged persons). *The demographics of aging: a skewed sex ratio*. <http://transgenerational.org/aging/demographics.htm> (accessed 7 August 2012).
 132. Schatz EJ. 2007. Taking care of my own blood: Older women's relationships to their households in rural South Africa. *Scandinavian Journal of Public Health Supplement*, 69: 147-154.
 133. Mirkin B, Weinberger MB. 2001. The demography of population ageing. *Population Bulletin of the United Nations*. Special Issue; 42/43: 37-53.
 134. Lam M, Leibbrandt G, Ranchhod V. 2006. *Labour Force Withdrawal of the Elderly in South Africa*. Chapter 7 in: National Research Council (US) Committee on Population; Cohen B, Menken J, editors. *Aging in Sub-Saharan Africa: Recommendation for Furthering Research*. Washington (DC): National Academies Press, pp 214-249.
 135. Rahman MO. 1999. Age and gender variation in the impact of household structure on elderly mortality. *International Journal of Epidemiology*, 28: 485-491.
 136. Goldman N, Korenman S, Weinstein R. 1995. Marital status among the elderly. *Social Science and Medicine*, 40: 1717-1730.
 137. Cutler DM, Lleras-Muney A. 2006. *Education and health: evaluating theories and evidence*. National Bureaus of Economic Research, Cambridge MA. Working Paper Series No. 12352, pp 1-30.
 138. Ross CE, Wu C. 1995. The links between education and health. *American Sociological Review*, 60: 719-745.
 139. Anstey K, Christensen H. 2000. Health, blood pressure and apolipoprotein E as predictors of cognitive change in old age. *Gerontology*, 46: 163-177.

140. Lasheras C, Patterson AM, Casado C, Fernandez S. 2001. Effects of Education on the Quality of Life, Diet, and Cardiovascular Risk Factors in an Elderly Spanish Community Population. *Experimental Aging Research*, 27: 257 – 270.
141. Fernandes A. 1995. *Cultura da crise e seguridade social: um estudo sobre as tendências da previdência e da assistência social brasileira nos anos, 80 e 90*. São Paulo: Cortez
142. Lloyd-Sherlock P. 1999. Old age migration and poverty in the shantytowns of São Paulo Brazil. *Journal of Developing Areas*, 32: 491–514.
143. Lloyd-Sherlock P. 2000. Population ageing in developed and developing regions: implications for health policy. *Social Science and Medicine*, 51: 887-895.
144. Siyongwana PQ. 2004 Informal moneylenders in the Limpopo, Gauteng and Eastern Cape provinces of South Africa. *Development Southern Africa*, 21: 851-866.
145. Fiedler J. Undated. Health, Aged Care and Housing – A Vital Link Needed for Older People By, Advice Worker. Housing for the Aged Action Group Inc. <http://www.chp.org.au/parity/items/2007/05/00276-upload-00001.doc> (accessed 5 August 2012).
146. Wiener JM, Hanley RJ, Clark R, Van Nostrand JF. 1990. Measuring activities of daily living: comparisons across national surveys. *Journal of Gerontology*, 45: S229-237.
147. Lawton MP, Brody EM. 1969. Assessment of older people: Self-maintaining and instrumental activities of daily living. *Gerontologist*, 9:179-186.
148. UNESCO Institute for Statistics. 2005. *Indicators on illiteracy of the UN Statistics Division Demographic and Social Statistics*. <http://unstats.un.org/unsd/demographic/products/socind/illiteracy.htm> (accessed on 12 May 2012).
149. World Literacy Foundation. Undated. *The Economic and Social Cost of Illiteracy - Interim Report of the WLF*. <http://www.worldliteracyfoundation.org/interim-report.html> (accessed on 12 May 2012).
150. Sulander T. 2011. The association of functional capacity with health-related behavior among urban home-dwelling older adults. *Achives of Gerontology and Geriatrics*, 52: e11-e14.
151. Srinivasan K, Vaz M, & Thomas T. 2010. Prevalence of health related disability among community dwelling urban elderly from middle socioeconomic strata in Bangaluru, India. *Indian Journal of Medical Research*, 131: 515-521.
152. Epping-Jordan JE, Pruitt SD, Bengoa R, Wagner EH. 2004. Improving the quality of health care for chronic conditions. *Quality and Safety in Health Care*, 13: 299–305.
153. Brown AF, Ettner SL, Piette J, Weinberger M, Gregg E, Shapiro MF, Karter AJ, Safford M, Waitzfelder B, Prata PA, Beckles GL. 2004. Socioeconomic position and

- health among persons with diabetes mellitus: a conceptual framework and review of the literature. *Epidemiologic Reviews*, 26: 63-77.
154. McCall DT, Sauaia A, Hamman RF, Reusch JE, Barton P. 2004. Are low-income elderly patients at risk for poor diabetes care? *Diabetes Care*, 27:1060-1065.
 155. Govender T, Barnes JM, Pieper CH. 2011. Housing conditions, sanitation status and associated health risks in selected subsidized low-cost housing settlements in Cape Town, South Africa. *Habitat International*, 35: 335-342
 156. Hoyer WJ, Roodin, PA. 2003. Adult development and aging (5th ed). New York: McGraw-Hill.
 157. Sorock GS. 1988. Falls among the elderly: epidemiology and prevention. *American Journal of Preventative Medicine*, 4: 282-288.
 158. Solhaug HI, Johansen EB, Romild U, Stordal E. 2011. Increased prevalence of depression in cohorts of elderly. A longitudinal epidemiological study: The hunt-study *European Psychiatry Supplement*, 26: 1183-1186.
 159. Levkoff SE, Macarthur IW, Bucknall J. 1995. Elderly mental health in the developing world. *Social Science and Medicine*, 41: 983-1003.
 160. Oliveira DAAP, Gomes L, Oliveira RF. 2006. Prevalence of depression among the elderly population who frequent community centres. *Rev Saúde Pública*, 40:1-3.
 161. Tiemeier H, Breteler MMB, Hofman A, Stijnen T. 2005. A multivariate score objectively assessed health of depressed elderly. *Journal of Clinical Epidemiology*, 58: 1134-1141.
 162. Eisele M, Zimmermann T, Köhler M, Wiese B, Hesel K, Tebarth F, Weeg D *et al.* 2012. Influence of social support on cognitive change and mortality in old age: results from the prospective multicentre cohort study. *BMC Geriatrics*, 12:9-12.
 163. Schonfeld L, Dupree LW. 1991. Antecedents of Drinking for Early- and Late-Onset Elderly Alcohol Abusers. *Journal of Studies on Alcohol and drugs*, 52: 587-592.
 164. Thomson GW, Wilson NA, O'Dea D, Reid PJ, Howden-Chapman P. 2002. Tobacco spending and children in low income households. *Tobacco Control*, 11:372-375.
 165. Flessa S. 2000. Where efficiency saves lives: A linear programme for the optimal allocation of health care resources in developing countries. *Health Care Management Science*, 3: 249-267.
 166. May J. 2003. May Chronic poverty and older people in South Africa Chronic Poverty Research Centre, Working paper 25.
 167. World Bank. 1994. *Averting the old age crisis. Policies to protect the old and promote growth*. New York: Oxford University Press, pp. 102.

168. Munthree C, Maharaj P. 2010. Growing old in the era of a high prevalence of HIV/AIDS: The impact of AIDS on older men and women in KwaZulu-Natal. *South Africa Research on Aging*, 32 :155–174.
169. Pang T, Terry R. 2011. *No Health without research*. PLoS Medicine, 8: e1001008.
170. Orton L, Lloyd-Williams F, Taylor-Robinson D, O’Flaherty M, Capewell S. 2011. The use of research evidence in public health decision-making processes: Systematic review. *Journal of Urban Health*, 6: e21704.