A PRELIMINARY STUDY OF A CORRELATION BETWEEN SCORES ON A 6-ITEM COGNITIVE IMPAIRMENT TEST AND A MODIFIED BRISTOL ACTIVITIES OF DAILY LIVING SCALE OBTAINED FROM OLDER WOMEN IN KHAYELITSHA

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ABSTRACT

The absence of culturally appropriate assessment tools for the measurement of cognition and activities of daily living in an older black African population living in South Africa was the reason for embarking on the study.

The purpose of the study was to develop culturally appropriate screening tools for dementia in a South African, Xhosa speaking urban black population. The aim of the study was to determine a correlation between the scores on a six item cognitive test (6CIT) (Brooke and Bullock 1999), and a modified Bristol Activities of Daily Living Scale (BADL) (Bucks, Ashworth, Wilcock and Siegfried 1996), in order to assess the usefulness of the cognitive test as a screening tool for dementia in black older women.

A random sample of women (N=92) was drawn in an urban area (Khayelitsha) near to Cape Town, South Africa. Data were gathered with the use of three instruments. Background information was obtained from the subjects. The 6CIT was administered to the subjects. The BADL, an informant-based scale, was administered to the primary carers. The instruments were modified for local use and translated into Xhosa, the home language of the majority of residents in Khayelitsha.

The results of the study showed a correlation between the scores on the two measurement instruments (r =.49745) at a 95% confidence interval. The instruments were found to be culturally appropriate for the black African older population. However, low education was a confounding factor for the cognitive test and cut-off scores, used in previous studies to detect the possible presence of early dementia, were found to be too low for this population. The modified BADL scale showed that none of the subjects were fully dependent on their carers for the performance of activities of daily living.

Recommendations are that the instruments, 6CIT and modified BADL, which have been shown to be easily administered by community health workers be further validated and translated into other black South African languages. Easy to administer screening tools for dementia should be developed for detection of the disease in the population so that

provision is made by health authorities and occupational therapists for treatment plans to minimise the detrimental effects of the disease on the individuals, their families and communities.

KEYWORDS

OLDER PERSON/ SCREENING TOOL/DEMENTIA/COGNITION/ADL

DECLARATION

I, KATHLEEN BRODRICK, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise), and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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CHAPTER ONE Introduction

1.1 Preface

The number of persons aged 60 years and over world-wide is increasing. An older population of 600 million in 1999 is projected to increase to 2 billion by 2050. The older population of Africa, currently estimated to be slightly more than 38 million, is projected to increase to 212 million by 2050 (U.S Bureau of the Census 1999).

A growing number of older people in a country's population is accompanied by an increase in the cost of maintaining the health status of the older section of the population. With increased longevity, people are at greater risk of developing chronic diseases that are common in old age and demands will be made on the social and physical environment to support these individuals. Advanced age is also a risk factor for the onset of dementia. Dementia is a progressive brain disease that impairs memory, personality and cognitive skills and affects a person's ability to perform activities of daily living (ADL). Three main types of dementia are Alzheimer's disease, vascular dementia and alcohol related dementia. In Western society dementia affects 1 in 20 people over the age of 65 years. There is a lack of evidence on the prevalence of dementia in developing societies. However it is estimated that 66% of persons world-wide suffering from dementia live in developing countries (Prince 1999). It is debated in the literature whether Alzheimer's disease occurs in black Africans. Ferreria and Makoni 1999, raise the question as to whether this reported non-occurrence by some authors is due to a lack of appropriate screening tools, genetic and/or environmental factors. The other dementias, namely vascular and alcohol related forms are established in Africans.

In South Africa, approximately 1.7 million persons are 65years or older, 65% of whom are black (Taunyane and Hirschowitz 1998). These numbers are projected to grow exponentially in line with global ageing trends.

In South Africa the vast majority of older persons live with their family in the community. In poverty stricken communities in South Africa, an older person's social pension may sustain the entire household. The AIDS epidemic in South Africa is resulting in an increasing number of older women having to take on the responsibility of caring for orphaned grandchildren when parents of the children die. According to psychosocial theories of ageing (Davis 1986), such an increase in responsibility and possible occupational overload at a time when they would be gradually withdrawing from physically and mentally taxing activities is detrimental to their health

The focus of occupational therapy intervention is functional performance in activities of daily living. In an older population who suffer from dementia the focus remains the same and to facilitate functional performance the occupational therapist would employ environmental adaptation strategies. This would entail involving the family, carer and community in the treatment programme (Hasselkus 1993).

1.2 Occupational therapy assessment

Hasselkus (1986) stated that the best measure of health of older persons is their ability to perform expected roles and activities of daily living. The focus of the occupational therapist with older clients is on functional performance in daily activities. Occupational therapy intervention is always preceded by an assessment to determine the area of performance dysfunction. In older clients suffering from dementia, assessment tools may also be used to screen for disability, describe functional status, provide data for planning of occupational therapy intervention, determine the ability to live safely in an environment and to monitor the progress of the dementia (Rogers 1993). Treatment programmes may be designed only for the older individual but usually involve their social environment.

In post-apartheid South Africa, health services, including occupational therapy services, are being restructured to include previously marginalised population groups. Black older people are one of these groups. However, planners and providers of health care services

to this population are inhibited by a lack of research evidence of their specific health care needs. Research is also impeded by a lack of funding to conduct national surveys that focus on the health care needs of older people.

Screening tools to identify cognitive impairment and to diagnose dementia are available and widely used in the developed and occasionally in developing countries. However, these instruments have generally proved to be unsuitable for use in the populations of developing countries because they assume literacy and numeracy levels which are unrealistic for populations with a low education level. Items in the instruments are not necessarily culturally appropriate for indigenous people. No screening tool for dementia has been validated for use in South Africa as little interest was previously shown in the mental health of black people. Furthermore the multi-lingualism and cultural construction of illness of black people was difficult to merge with a dominant Western paradigm of medicine, in the country (Ferreira and Makoni 2001).

Screening tools are commonly used in Occupational Therapy practice to identify occupational performance deficits. Assessment of the occupational performance of older clients includes cognitive tests and ADL scales. The cognitive tests usually comprise items that measure the different components of cognitive functioning, reflecting a bottom-up performance component (micro level) approach to assessment. Items on the test requiring the use of aspects of cognition such as attention, memory or calculation skills would give an indication of which of the components was dysfunctional. ADL scales use a top-down functional approach (macro level) and infer cognitive functioning from the performance of everyday activities. Nearly all aspects of occupational performance are guided in some way by the cognitive skills of the individual (Duchek and Abreu 1997).

Cognitive and functional assessments used together provide a more comprehensive assessment than either one used on its own. The ADL tools identify functional performance deficits in clients suffering from dementia. A cognitive test that indicates a poor memory or the inability to pay attention would provide an explanation for the

functional deficit and the focus for a treatment plan. Occupational therapists are mainly interested in cognitive scores of older clients because of the impact that cognition has on activities of daily living. However, when communicating with diverse health practitioners who generally are more focussed in their practice on components of function than are occupational therapists, a valid cognitive score is important for inter disciplinary communication.

Throughout a therapist/client relationship, ongoing assessments are based on several sources to present a multidimensional picture of the client's status (Smith 1993). Formal assessment tools are one such source of client information. Other sources of assessment are the client interview, the family interview and environmental assessment. Assessment tools may be used several times during the treatment process to measure outcomes and to redefine goals of treatment. Furthermore, standardised assessment tools for a particular clinical condition, if used consistently by occupational therapists in a particular country, aid communication between therapists and other professionals in the field (Law & Letts 1989).

In the case of dementia, where a diagnosis of the disease includes both deficits in cognitive ability and deficits in functional performance according to the Diagnostic and Statistical Manual of Mental Disorders version IV (DSM 1V), it would be helpful to an occupational therapist to have a culturally sensitive ADL scale and a relevant cognitive assessment tool validated for a population at risk of suffering from dementia available to him/her.

In South Africa assessment tools available for use by health practitioners, for activities of daily living and cognitive function have limited applicability for the older black population. In the public health domain, where the majority of therapists are employed, the assessment tools have been "borrowed " from first-world countries where the dominant language has been English. Examples of these tools are the Mini Mental State Examination (MMSE) (Folstein, Folstein and McHugh 1975) and the Barthel ADL Index (Mahoney and Barthel 1965). Individual items in the assessment tools have been based

on activities that are pertinent to people living in industrialised countries and are not all relevant in the South African situation. As a result, therapists tend to draw up their own assessment tools in their areas of practice. However, these tools have tended to be based on assumptions about the living environment of their clients, rather than from evidence of these environments within a cultural framework. They are also not standardised. Interdisciplinary communication on health problems of clients has been severely hampered by the lack of standardised and validated assessment tools.

Activities that people perform every day are meaningful and specific to the individual. However generalisations must be made within a broader framework when designing screening tools because of the universality of some activities of daily living such as eating, dressing, hygiene maintenance, mobility. Culturally sensitive tools are of necessity based on the normally accepted activities that are performed by the majority of people in a particular environment. Screening tools are used firstly for detection of deficits in performance and also as a basis on which further investigations are made in order to confirm a diagnosis and treatment plan.

1.3 Assessment tools for dementia

Dementia impacts on the occupational performance of older people. Changes in the performance of ADL due to physical limitations experienced in old age are compounded by cognitive deficits brought about by the disease. ADL screening tools specifically designed to screen for dementia, include instrumental and basic activities of daily living in the scale. Fillenbaum (1996) describes basic activities of daily living as those that focus on basic bodily needs, while instrumental activities of daily living are those which contribute to the person's participation in society. The tasks are culture specific, which must be taken into account in the assessment of ADL if the results are to be valid (Fisher 1992). Tasks may also be gender and age specific in different populations. The design of a culturally sensitive ADL scale for black people with dementia in South Africa should thus take into account the roles and tasks of the older people within their cultural framework. If the tools are to be administered by community health workers, who are

generally younger individuals, the culturally-accepted practices regarding the interaction between young and older people must be considered. Furthermore, in South Africa a rural or urban environment may impact on the roles and occupational performance of black older individuals

World-wide, cognitive tests used to screen for dementia identify cognitive sub-components that are present and are easily quantified in the early stages of the disease. These components are memory, attention, calculation and orientation. Culture-appropriate measurement of these universal concepts is a challenge for health practitioners who work in culturally diverse communities.

Two screening tools that were developed in the United Kingdom, which may be easily modified because of the universal nature of items in the tests, are the Bristol Activities of Daily Living Scale (BADL)(Bucks, Ashworth, Wilcock and Siegfried, 1996) and the 6-Item Cognitive Impairment Test (6CIT) (Brooke and Bullock 1999).

The BADL is a brief informant-based scale which comprises of items on self-care, orientation, mobility and instrumental activities of daily living. The scale is sensitive to a range of the performance levels of activities of daily living from total dependence to independence. The BADL measures a subject's performance of activities in the two weeks prior to the administration. In this way the scale is able to identify small changes in performance over time. The BADL has a minimum score of 0, which indicates total independence, and a maximum score of 60, which indicates total dependence. Each activity in the scale may be performed according to three levels of ability. If the activity is not relevant to the subject, the carer rates the item "not applicable" and the subject scores 0. In this way, inappropriate items for a subject do not contribute to the score; if irrelevant items were scored, the total score would be inflated.

The 6CIT measures orientation, concentration and memory. The first three items deal with orientation in time and the latter three items test memory and concentration. The 6CIT is quick to administer. It excludes items about current affairs, such as "what is

happening in the news; who is the president?" which facilitates both linguistic and cultural translations. It does not require that the subject is able to read or write. Scoring on the test is weighted and inverse, and measures the number of errors made by the subject, up to a predetermined maximum number of errors per question. The maximum score is 28 which indicates severe dementia. Comparisons between the diagnosis of known early dementia sufferers and scores on their tests resulted in a cut off score of 7 or 8 as an indicator that further investigations or provision for early intervention programmes be implemented (Brooke & Bullock 1999). Earlier research suggests that a score of 10 is indicative of early dementia (Katzman, Brown, Fuld, Peck, Schechter & Schimmel 1983).

The importance of having culturally appropriate assessment tools for an older population at risk suffering from dementia has been discussed. South African occupational therapists have no ADL or cognitive assessment tools available to them to screen older black people for dementia. Inter disciplinary communication between South African practitioners and practitioners elsewhere is consequently hampered. A study was therefore undertaken with an aim to develop such instruments for application in the South African black population.

1.4 Purpose

The purpose of the study was to develop culturally appropriate tools to screen for dementia in a South African, Xhosa-speaking urban older population by culturally modifying and testing two instruments in the population.

1.5 Aim

The aim of the study was to correlate scores achieved by subjects on a modified Bristol Activities of Daily Living Scale (BADL) and the Six Item Cognitive Impairment Test (6CIT).

1.6 Objectives

- To compile a demographic profile of the study sample.
- To review each item in the 6CIT and the BADL scale for cultural appropriateness and adapt it accordingly before and after testing.
- To assess the cognitive function of subjects using the 6CIT
- To assess the activities of daily living of the subjects using a modified BADL scale.
- To determine a correlation between the scores of the 6CIT and the BADL

CHAPTER TWO Review of Literature

2.1 Introduction

In South Africa, mental health care of black older people was not a health priority under the previous administration prior to 1994, nor is there evidence that it is a current health priority under the new government (White paper for the transformation of the health system in South Africa, 1997). Research on the health status of this population has been limited because of disinterest during the apartheid era. As a result no culturally sensitive screening tools for dementia have been developed and validated in the South African black population. There is a lack of knowledge on the prevalence of dementia and Alzheimer's disease in the population (Ferreira & Makoni 1999).

Limited research has been conducted on the problem and prevalence of dementia in developing countries generally (Prince 1999). A prevalence study conducted on older people with similar ethnic origins in Indianapolis, USA and Ibadan, Nigeria, showed different rates of dementia and Alzheimer's disease in the two black populations: 2.29% in Ibadan versus 4.82% in community dwellers in Indianapolis (Hendrie *et al* 1995). Prevalence rates for dementia and Alzheimer's disease were significantly lower for the Nigerians as compared to the African Americans. Alzheimer's disease was diagnosed in 18 of the 28 subjects who were diagnosed as suffering from dementia in Nigeria. In South Africa, in 1976, Alzheimer's disease was "neuropathologically confirmed" in two black subjects but the validity of this finding is questioned on the basis of criteria used for the diagnosis (De Villiers & Louw 1996).

In African societies, signs of dementia are commonly ascribed to old age and are not investigated (Ferreira & Makoni 1999). Anecdotal evidence from Soweto, South Africa suggests that black older people exhibit symptoms and behaviours usually associated with dementia but the term "dementia" or "Alzheimer's disease is not known by the people living in Soweto (Modisagae 1999). As a result, older persons are seldom brought

to a health care practitioner for diagnosis or treatment.

Cognitive decline and functional limitations are major features of dementia (DSM IV) Tools that measure either cognitive status or activities of daily living have been used as screening tools. Cognitive tests are generally dependent on educational level and may classify, erroneously, poorly educated subjects as cognitively impaired. It has been recommended that Instrumental Activities of Daily Living scales are simple to use and less dependent on educational level than are cognitive tests. Therefore they are a useful adjunct to cognitive tests in epidemiological studies on the prevalence of dementia (Barberger-Gateau *et al* 1992).

2.2 Cognitive tests

A large number of cognitive tests are available to psychiatrists and other practitioners world wide. In developed countries, pictorial cognitive tests have been used as screening tools. An example of this is the Rivermead Behavioural Memory Test in which the older person is required to perform a number of tasks according to the test protocol and within a certain time limit (Hodges 1994). However, the cost of these tests is prohibitive for general use in South Africa; the kit is also cumbersome and the pictures are Western in origin and therefore not culturally appropriate. Administration of the test takes approximately 40 minutes.

Another screening tool that involves constructional apraxia is the clock drawing task (Mendez, Ala & Underwood 1992). This test does not specifically identify Alzheimer's disease but when used in conjunction with cognitive screening tests, that fail to detect executive function deficits, is an indicator of possible early dementia (Manos 1998). However, scoring of the clock test requires a practitioner's specialised knowledge and thus renders it unsuitable for use by community health workers who in the new District Health Care System will be the link between the communities that they serve and the health system (*National Norms and Standards for Primary Health Care 2000*).

The most commonly used cognitive test internationally (Louw 1997; Tombaugh and

McIntyre 1992) is the 30-item Mini-Mental State Examination (MMSE) (Folstein, Folstein and McHugh 1975). Performance on the MMSE is related to educational level (Tombaugh *et al* 1992). The MMSE tests the cognitive domains of orientation to time; orientation to place, registration of three words, attention and calculation, recall of three words, language and visual construction. The MMSE is available in numerous languages. It has been shortened by several authors who have selected the most efficient variables to detect cognitive impairment in older people (Braekhus, Laake & Engedal 1992). It has also been adapted for illiterate subjects by using culturally applicable alternative forms of each subtest. An example of such adaptation is the modified MMSE designed for use in India (Ganguli *et al* 1994).

The MMSE has been the screening instrument commonly used by all health practitioners in South Africa to detect cognitive deficits. However, it is more recently viewed as an invalid test in South Africa if the person is functionally illiterate, has poor hearing, has poor vision, is not fluent in English or Afrikaans, and has a non-Western cultural background (Louw 1997). Attempts have been made to modify the MMSE for use in South Africa (De Villiers & Louw 1996). Scoring has been altered to eliminate items that are affected by illiteracy or visual defects. The authors translated the scale into Xhosa and modified the "Attention item". The task of spelling the word WORLD in reverse was replaced with the task of having to recite an English proverb translated into Xhosa, "Every dog has its day", in reverse. Ferreira and Makoni (2001) are of the opinion that the modified and translated version is still not appropriate for use in illiterate Xhosa populations.

Cognitive tests that can be administered by non-physicians easily in a short space of time lend themselves to use in community settings not served by psychiatrists or other qualified practitioners. Katzman *et al* (1983) validated a 6-item Orientation-Memory-Concentration test against the MMSE and a confirmed medical diagnosis of dementia, as a measure of cognitive impairment. The test consisted of six items: three orientation items, months backwards, an address memory phrase and counting from 20 to 1. Most severely impaired subjects are differentiated from moderately impaired subjects by the

item about the time of day and counting from 20 to 1. The memory phrase and reciting the months in reverse were the first items that were given incorrectly by subjects suffering from early dementia. The value of this test lies in its ability to detect early dementia and its correlation with post-mortem pathological changes in the brain tissue of dementia sufferers.

The 6CIT (Katzman *et al* 1983), developed in the UK, was further validated against the MMSE (Brooke & Bullock 1999), with a view to using it as a screening tool for detection of early dementia in primary health care facilities where the average consulting time is 7.5 minutes. The test correlated highly with the MMSE, $r^2 = -0.911$ ($p<0.01$), but was more sensitive than the MMSE in detecting early dementia. The advantages of using the 6CIT are that it can be easily translated and consequently there is a lack of interpretative error that could be made by subjects and administrators. It is quick to administer and may be easily replicated for widespread use by non- physicians.

2.3 Activities of Daily Living scales

Changes in cognition progressively and negatively impact all areas of function. In Western countries it is documented that older people who have insight into the term "dementia" or "Alzheimer's", and are in the initial stages of the disease, may suffer from fear, anxiety, denial or anger, which impacts on their behaviour (Brodarty 1998). As the disease progresses, the person's culturally determined roles and occupational competence decreases: they become reliant on their immediate environment for direction (White 1971; Matheson & Bohr 1997). Those who are unfamiliar with the terms, may experience confusion, worry or anger at the changes in their occupational competence. However, there may be an acceptance by an older person or their family that this is normal ageing and the person will be treated as if she were a child and his/her adult roles previously enjoyed are lost.

People suffering from dementia gradually lose the ability to participate in activities of daily living (ADL) in a hierarchical manner. People suffering from Alzheimer's disease

lose the ability to perform instrumental activities of daily living before they lose the ability to perform basic activities of daily living (Carswell & Eastwood 1993). Many scales measure activities of daily living but not all measure the same activities. Subjects might therefore score highly on independence on one scale and poorly on another. The main requirements for an ADL assessment are that it should reflect the activities that are part of the person's daily life and that the results are meaningful when communicated to others (Eakin 1989). The environment in which the assessment is performed may also impact a person's ability to perform the items in the scale. If the person performs less well at home than they do in a clinical setting, it may be because the scale items are not generalisable or culturally appropriate for the subjects' home context (Eakin 1989).

Several authors have suggested that functional assessments and informant interviews could be used to detect dementia (Swingler 1997; De Villiers 1997; Louw 1997). ADL scales have been designed specifically as assessment tools for people who suffer from dementia. Examples of these are the "Disability Assessment for Dementia"(DAD), (Gelinas, Gauthier McIntyre & Gauthier 1998), the "Structured Assessment of Independent Living Skills"(SAILS) (Mahurin, DeBettignies & Pirozzolo 1991), the "Bristol Activities of Daily Living"(BADL) (Bucks, Ashworth, Wilcock & Siegfried 1996) and the "Everyday Abilities Scale for India" (Fillenbaum, Chandra, Ganguli, Pandav, Gilby, Seaberg, Belle, Baker, Echement & Nath 1999). However, these scales have all been designed for use in Western countries, with the exception of the "Everyday Abilities Scale for India". The DAD and BADL scales are informant-based scales, while the SAILS consists of 50 tasks that are performed by the subject. These tasks are timed and graded on a 3-point scale by an occupational therapist.

Informant-based scales are used in the detection of cognitive impairment because of the inability of cognitively-impaired subjects to accurately report on their performance of ADL (Fillenbaum *et al* 1999; Bucks *et al* 1996). The "Everyday Abilities Scale for India", an informant based scale, was developed for use in an epidemiological study of dementia in a rural area of India where the population is mostly illiterate. Twelve culturally appropriate activities that the older people were expected to participate in were

selected for the scale. Their cognitive status was measured using the Hindi Mental State Examination (Fillenbaum et al 1999).

Correlation between cognition and activities of daily living is inconsistent across studies and there is no consensus about the association. Different methodological procedures may have caused this.(Carswell & Eastwood 1993). Some researchers have reported a correlation between IADL tasks and scores on the MMSE (Barberger-Gateau *et al* 1992). In their longitudinal study, Carswell & Eastwood (1993) found a strong association between cognition and ADL and between social function and ADL. As Alzheimer's disease progressed in their subjects, there was an increase in impairment of cognition, ADL and social function. Robinson & Fisher (1999) argued that making predictions about a person's ability to perform daily living tasks on the basis of a memory and cognition test was probably invalid, the impact of motor impairments had to be considered as well. However, as one of the diagnostic criteria of dementia is a disturbance in the person's social or occupational activities, measures of ADL are vital in the diagnosis of dementia (Fillenbaum *et al* 1999; Mahurin *et al* 1991).

Finally, in order to contribute to the health of the older population in South Africa, occupational therapists need to have assessment tools that are culturally applicable for the population to guide treatment plans for individuals, families and communities. The tools have to be easily administered by trained community workers as well as health professionals to facilitate communication between primary, secondary and tertiary levels of health care and contribute to the global debate about the prevalence of dementia in Africa.

CHAPTER THREE Research Method

3.1 Research design

The design of the study was a cross-sectional analytical survey.

3.2 Study population and sample

The study population was black women, aged 60 years to 95 years, resident in Khayelitsha, a township of Cape Town, at the time of the study. In South Africa, women at this age become eligible for a social pension which is non-contributory but means tested. The study excluded men because some items in the ADL scale to be tested in the study do not apply to black men in the African cultural context. Items concerning personal hygiene, traditionally would not be discussed with younger females such as the field workers. Items pertaining to the preparation of food or housework are not applicable for the men.

Two areas of Khayelitsha were selected as the sample frame. The areas were Z and S sections of Site B, Khayelitsha. Types of accommodation in the areas are typical of Khayelitsha. Z section has mainly brick dwellings and the area was formally laid out by town planners. All houses have toilets and taps, some have electricity. Some houses have informal structures attached to them. The adjoining S section is a "Site and Service" area. S section consists of houses and shacks which were formally laid out on plots that have a toilet and access to a tap. Some parts of S section were allocated for churches or halls but were not built and squatters have subsequently inhabited these areas. The squatters have no formal toilets or access to water. A wall separates Z and S sections. A systematic random sample was drawn from the sample frame.

3.2.1 Sampling procedure

A starting point for the systematic identification of the sample households was randomly determined. The starting point was in Z section, the smaller more formal section of the sample frame. One of two field workers walked in an easterly direction while the other field worker walked in a westerly direction. From the starting point, every fifth household in a continuous line up and down the streets and alleyways was visited. In the event of there being no older resident in the fifth dwelling, the field workers visited the fourth dwelling. If there was still no older woman in the dwelling, the third or second dwelling was canvassed. The count for the identification of the next house to be canvassed commenced from the original fifth dwelling. When the first field worker reached the eastern extremity of Z section, she recommenced sampling in the furthest corner of S section away from the other field worker.

3.3 Instruments

Three instruments were used to collect data for the study: a questionnaire that elicited background information (see Appendix 1); a modified 6-Item Cognitive Impairment Test (6CIT)(see Appendix 2); and a modified Bristol Activities of Daily Living Scale (BADL)(see Appendix 3)

3.3.1 The background information questionnaire

Details about the living environment of the older person were sought in this questionnaire as well as the relationship to their primary carer. The subjects were asked to state their educational level achieved and medical conditions that they had.

3.3.2 The modified 6-Item Cognitive Impairment Test

The 6CIT was adapted for use in the study population by using a local address as the memory phrase. The five-item phrase was "Pumla / Zibi / Z69 / Jama Road /

Khayelitsha". The other five items on the test were judged to be straight-forward and unambiguous by the research team.

The 6CIT was translated into Xhosa by two staff members of Neighbourhood Old Age Homes Project (NOAH), a non-governmental organisation in the area that has community housing and a service centre for older people. Each item in the test was discussed and an translation made. A third Xhosa/English speaking staff member independently back-translated the test to the researcher.

The test was administered in Xhosa. The respondents responded in Xhosa or English. Provision was made for verbatim responses to items to be recorded on the test by the field workers. (See Appendix 2.)

Scoring on the 6CIT was as follows: The mistakes made by the subjects in response to the items were recorded. Each item had a predetermined number of maximum errors that was allowed. The number of errors made, up to the maximum, was then multiplied by the predetermined weighting given to each item to obtain the score on the item. The scores of all the items were then totalled.

3.3.3 The modified Bristol Activities of Daily Living scale

Modification of the items of the BADL was needed to ensure its relevance to the study population. To this end a workshop was held in Khayelitsha in which Xhosa-speaking women discussed the relevance in their lives of items in the BADL. Items that were not relevant were discarded. These items pertained to drinking, bathing/showering, games/hobbies and transport.

The remaining 16 items were rewritten in a shorter format so that all four options could be read by the field workers to respondents, thus obviating problems of illiterate carers. The items were made more relevant to the subjects by altering the wording to suit local conditions. (See Appendix 4) The items were then independently translated by two Xhosa speakers and consensus reached about a final version. The final version was back-translated by a third Xhosa speaker, to ensure that the original concepts in the BADL had been retained.

In the original BADL, activities of daily living carried out in the two weeks preceding the test were reported by the carers. This period was increased to four weeks in the modified version, so that at least one pension pay day was included in the period enabling the carer to respond to the item about finances.

Scoring on the modified BADL was as follows: The items were scored either 0,1,2,or 3. The level of functioning ranged from, 0= no change in performance of item in the preceding four weeks, to 3 if the subject was totally dependent on the carers assistance to perform the activity denoted in the item, Scores of 2 or 3 denoted intermediate levels of dependence. If the item was not applicable to the subject the field worker marked 0. The scores were totalled to give a score out of a maximum of 48.

3.4 Preparation for fieldwork

Contact was made with the Z-section area committee through a representative who was also a member of the Neighbourhood Old Age Homes steering committee in Khayelitsha. The NOAH project is known in the area for its involvement in health issues of older people. To ensure the community's participation in the study, permission to conduct the study was sought from the local management committees. The researcher was invited to the February meeting of the committee by the chairman and was accompanied by a Xhosa-speaking colleague who acted as an interpreter. At the meeting, which was conducted in Xhosa, the researcher gave a presentation to the management committee on the proposed study. The presentation was translated into Xhosa and consisted of education about signs and symptoms of dementia, the practical implications of dementia on an older person's life and the importance of demystifying the disease. Problems of assessing the mental status of black older people using existing tools were outlined. The importance and the benefit of the research project to the older people and their families and carers were discussed.

Questions were asked in the meeting about the proposed sampling method. The committee emphasised that it did not want any older person to be overlooked, i.e. not

tested for dementia. Random sampling was thereupon explained to the committee and the need to draw a random sample which would not include all older residents was explained. The draft instruments were distributed for perusal by the committee.

Two weeks subsequent to the meeting the researcher was informed that permission for the study to proceed in Z-section had been granted. The researcher and the interpreter were asked to attend another meeting of the Z-section management to which the management committee of S-section would be invited. A joint meeting of the Z and S management committees was held in March and the researcher was invited to make the same presentation to the S Section committee. A similar concern was raised in this meeting that some people would be excluded from the study, i.e. not tested. Following on further discussion of research methods, the researcher agreed to perform a comprehensive survey of both areas after the initial project was completed. A representative from the South African National Civics Organisation (SANCO), a community structure concerned with community matters such as health, housing, safety, transport, employment etc., suggested that the aid of the SANCO Street Health representatives be enlisted in a subsequent survey of all older residents of Z and S sections.

3.5 Fieldworkers

Two Xhosa-speaking members of the NOAH project who are fluent in English and Xhosa were recruited as field workers. The field workers were familiar to the people who lived in the area which facilitated their co-option in the research process and assured their personal safety while interviewing. One of the field workers lived in Z-section and the other lived in another part of Khayelitsha. Both field workers are perceived by the community to be concerned about the health of older people through their work at the Neighbourhood Old Age Home's centre in Z-section. Both were knowledgeable about traditional Xhosa values, particularly norms that are valued by older people.

The field workers attended two training sessions with the researcher where they were instructed in the use of the cognitive test and the ADL scale. It was decided that subjects'

responses to the items would be recorded and later translated at the time when the scores were collated. Scores were not totalled in the field, i.e. by the field workers but later by the researcher. The field workers were trained to administer the items in the test and the scale without explanation, prompting or discussion with the respondents, which might alter the meaning of an item.

They were also trained in the selection and recruitment of a subject in a household. For example, if more than one older woman lived in the household, the field workers were to administer the test to the oldest individual. A household was deemed to include all structures that housed people on one plot. The oldest resident, as identified by those present, was to be selected. As far as possible, the field workers were to request privacy for the interviews to prevent input by other members present in the home.

3.6 The pilot studies

3.6.1 First pilot study

Four instruments were used in the first pilot study. (See Appendix 5) They were a questionnaire that elicited demographic information, the 6CIT, an ADL scale administered to the older person and a proxy ADL scale administered to the carer.

The researcher, in collaboration with Xhosa speaking women who worked at the NOAH service centre in Khayelitsha, drew up the ADL scales based on basic and instrumental activities of daily living. Items were confirmed as being culturally applicable to commonly performed activities by the women. Items on the scale administered to the subject and the subject's carer were identical. The items were also easy to administer and to score (Fillenbaum 1996, Fillenbaum 1999). Wording of each item was discussed with the women and then translated into Xhosa.

An ordinal measurement scale for each item was used as follows: 1=independent, 2=partially dependent and 3= dependent. The lowest score was 14, indicating

independence in activities of daily living, and the highest was 52, indicating total dependence. These home-grown ADL scales had not previously been tested for reliability or validity.

A non-random sampling, the snowballing sampling technique, was used to recruit subjects for the pilot study at weekends. The sample area was Harare, where one field worker lived, and A section, where the other field worker was known to the residents. Travelling expenses and transport difficulties over weekends were eliminated in this way. Each field worker selected an initial contact person. At the conclusion of the interview, the subject was asked to identify another older person, who lived nearby and who could be interviewed. Each field worker was thus introduced to five households.

The field workers each performed five sets of interviews. One of each field worker's subjects was also assessed by the researcher as a back check.

3.6.1.1 Problems identified in the first pilot study

(a) 6CIT

The field workers tended to use the right-hand margin to record responses to the items which resulted in some illegible responses. The responses were written in a mixture of English and Xhosa because the field workers had translated Xhosa responses into English before writing them down. These difficulties were identified as a source of potential error and remedied in retraining.

Due to a lack of space on the instrument, the responses had not been written down fully and were unclear to the researcher and even to the field worker when they translated them to the researcher for scoring. Thus another potential source of error was introduced.

Layout of the form was subsequently altered to eliminate these errors.

Fieldworkers were instructed to record all responses verbatim.

No provision had been made on the form for recording the time of the interview and the researcher was unable to judge the correctness of responses to item 3: *About what time is it now? (within one hour)*. Provision was subsequently made for the time of the interview to be recorded by the interviewer at the top of the form.

The fieldworkers were unsure what to do if the response to the item *What time is it now?* was vague, such as *Suppertime*. They were instructed to probe and to try to elicit the hour that the respondent thought related to *suppertime*.

The field workers were unsure what to do if a subject refused to answer a particular question, or if they struggled to answer the question. The field workers were subsequently retrained in the need to ensure that the subject was relaxed and did not feel intimidated by the process. It was stressed that the subjects should be allowed sufficient time to respond to items and that they could respond in English or Xhosa.

(b) ADL scales

The field workers reported that the ADL scales were simple to use and that no difficulty was experienced in their administration. The researcher observed them administering the scale to subjects and noted that they tended to predict a response before the subject had finished discussing the issue. The results of the ADL scales, both the scale that the subject responded to and the proxy scale did not clearly indicate the level of ability of the older person to engage in the different activities. The researcher found that the items were not specific enough to draw conclusions from the responses. It's use did show, however that where the 6CIT scores were high, indicative of cognitive impairment, the perception of the older person that they were independent in all aspects of activities of daily living differed markedly from the responses given by the carer.

It was decided to discard the ADL scales that had been drawn up and use a scale

that had been validated for use and was reliable in measuring activities of daily living of people suffering from dementia. The Bristol Activities of Daily Living Scale (BADL) (Bucks et al 1996) was selected for this purpose.

3.6.2 Second pilot study

The BADL was translated in its original form into Xhosa, which version was used in the second pilot study.

The field workers were trained in the use of the BADL scale. Six subjects were used for this pilot study. Four were residents of an assisted living facility and two lived with their daughters in the community.

The carers identified were the housemother and the assistant housemother, in the case of those living in the assisted living facility, and daughters, in the case of those living in the community.

The residents in the assisted living facility were known to the researcher and responses recorded by the field workers were checked after the interviews for accuracy regarding the functional performance of the subjects. The researcher observed the interviews with two subjects who lived in the community.

The respondents both indicated that they enjoyed participating in the administration of the BADL and had wanted to talk about their mothers. The duration of the interviews was approximately 35 minutes.

3.6.2.1 Problems identified in the second pilot study

Problems identified with the use of the BADL scale during the carer interviews were as follows: Discussion took place about each item and the carers described the activities of daily living of the subjects in full. The field workers had to extract a response to the item from a lengthy description given by the carer. At times the field workers themselves

entered into lengthy discussion about an item and then assisted the carer to make a choice of level of ability, which introduced a potential for errors.

Items in the BADL were thereafter simplified. Questions that were not directly relevant were discarded and the scale was thus shortened. (See Appendix 4)

The modified scale was thereupon translated and tested on two additional carers. The interviews with the carers, observed by the researcher, took approximately 20 minutes. In the interviews the field workers read the items to the carers without lengthy explanation of each item. The carers were able to listen to all four options before selecting the response that best indicated the ability of the person they cared for to perform that activity. However, in the case of some of the items the carer stopped the field worker from reading further options once they recognised the option that described the person's ability.

3.7 Fieldwork

3.7.1 Training

The field workers attended a final training session where the procedure to be followed at each house was role-played. Each field worker was given a detailed map of the areas with the starting point of the random sampling indicated by the researcher. The sampling procedure was explained, and basic principles of random sampling and the reason for employing the technique selected were discussed.

The field workers were instructed to identify the primary carer in the following way: An older person (subject) was asked to identify the person who would care for them if they became ill, and who helped them with their everyday activities. If the identified carer was not available at the time of the field worker's visit, then the field workers were instructed to return to the house at another time when the carer was present. If there was no carer, because the individual was independent, or had no support structure at all, then the field

worker was to record the situation, withdraw from the household, and go to another house according to the sampling instructions.

The fieldworkers were instructed to elicit a response from carers on the BADL scale and, if necessary, to probe for a response for all categories of activity of daily living.

3.8 Ethical considerations

The study was approved by the Research Ethics Committee of the Faculty of Health Sciences of the University of Cape Town.

On arrival at the sampled homes, the field workers introduced themselves and read an informed consent document to the subject and the carer, and ensured that they understood the contents, before asking them both to sign the document (see Appendix 6). All subjects and carers gave written consent to an interview. No items of a sensitive nature were included in the instruments. Responses to the items were treated as confidential by the field workers. However, with the subject's permission, cases of extreme hardship or illness that were detected were referred to the researcher. Assistance was thereupon sought for the older person if needed. Carers who experienced difficulty in caring for their charges were encouraged to seek assistance and support form the local service centre. Referral for medical verification of diagnoses and treatment will be made for individuals identified in the study as suffering from dementia.

The results of this research were made public at a community meeting held in Khayelitsha in March, 2001. Programmes to support and educate the community to deal with problems identified in the study are to be implemented in consultation with the community.

3.9 Analysis of data

The analysis of data was done using the computer programme Statistica. The first step in the data analysis was to provide descriptive statistics. The demographic analysis is presented according to age, education, number of years domicile in an urban area, type of dwelling, medical condition and identification of the carer by the older person.

The scores obtained on the 6CIT and the modified BADL scale are presented in tabular

form. Scores on each scale are analysed separately. Responses to items are shown as a percentage distribution.

As education is an important factor in ability to answer the items (Louw 1997; de Villiers 1996) and age is a risk factor for dementia, multiple regression analyses were carried out. Presuming that living in a urban area produces functional literacy and therefore improves ability to answer the test questions, this factor was also added to the multiple regression analysis.

Internal consistency reliability of the scales was assessed using Cronbach's coefficient alpha which measures the degree to which the items on the instrument tend to measure the same thing.

The relationship between the scores obtained on the scales is examined. The Pearson product-Moment correlation coefficient, *r* was calculated. Munro's (1997) values for *r* were used to indicate the strength of the relationship.

Lower limit	Upper limit	Strength of relationship
0.00	0.25	Little if any
0.26	0.49	Low
0.50	0.69	Moderate
0.70	0.89	High
0.90	1.00	Very high

CHAPTER FOUR Results

4.1 Sample profile

A summary profile of the study population is shown in Table 1 and Table 2. A total of 92 subjects completed the cognitive test and the activities of daily living scale. The subjects ranged in age from 60 years to 95 years. The mean age was 71.7years (N=92; SD 7.2). Similarly, a total of 92 primary carers of the subjects constituted the sample of carers. Selected characteristics of the sample are as follows:

4.1.1 Education

The level of education achieved by the subjects, ranged from no schooling, (39.1%) to tertiary education (1.1%). Slightly more than two-fifths (43.3%) completed primary school while a fifth (20.6%) had attended secondary school. One subject had received teacher's training from a tertiary institution.

4.1.2 Duration of urban residence

The number of years that the subjects had lived in an urban environment ranged from one year to 70 years. Slightly more than a quarter (26.1%) had lived in an urban area for less than ten years.

4.1.3 Type of dwelling

Fifty-nine subjects lived in shacks and 33 lived in brick houses All subjects from Z section lived in brick houses. Eighteen of the subjects from S section lived in brick houses and 41 lived in shacks.

Table 1
Demographic profile of the subjects: frequencies and percentage distribution

	Number of subjects N	% of total sample %
Total		
Age group (years)		
60-69	33	35.9
70-79	46	50.0
80+	13	14.1
Mean age 71.7 years		
Education (standard achieved)		
No schooling	36	39.1
1-5	38	41.3
6	14	15.2
7+	5	5.4
Duration of residence in urban area (years)		
0-9	24	26.1
10-39	45	48.9
40+	23	25.0
Type of dwelling		
Shack	59	64.0
Brick house	33	38.0
Self-reported medical condition (yes responses)		
Vascular	32	34.8
Musculoskeletal	26	28.3
Diabetes	26	28.3
Pulmonary	18	19.6
Vision	9	9.8
Hearing	4	4.3
Diarrhoea	3	3.3
None	22	22.8

Table 2
Demographic profile of carers: frequencies and percentage distribution

	Number of carers N	%of total sample %
Relationship to subject		
Grand Daughter	37	40.2
Daughter	30	32.6
Daughter-in-law	11	12.0
Sister/Niece	6	6.5
Son/Grandson/Nephew	7	7.6
None	1	1.1
Age group (years)		
<20	3	3.3
20-29	40	43.5
30-39	23	25.0
40-49	19	20.6
50-59	5	5.4
60+	2	2.2

4.1.4 Medical condition

The subjects were asked to state if they suffered from any medical conditions and, if so, to describe them. The conditions identified were as follows: vascular (34.8%); including hypertension (*hayi hayi)*, heart disease (*unenhliziyo)*, and strokes (2.2%); musculoskeletal (28.3%) consisting of arthritis, painful joints or bones, (*unamathembo);* diabetes (28.3%), (*uneswekile);* pulmonary (19.6%),(*unesifuba),* consisting of asthma and chest problems; vision impairment (9.8%), (*amehlo);* hearing impairment (4.3%); and diarrhoea (3.3%). Slightly more than a fifth (22.8%) reported no medical conditions. No attempt was made to confirm their medical diagnoses.

4.1.5 Carers

The subjects were asked to name the person who would help them if they became frail or needed assistance with their activities of daily living or who were already helping them. The primary carer was identified in this way. Female family members, daughters, daughters-in-law, nieces, sisters and grand daughters, were identified by 91.2% of the subjects. One subject was cared for by a house mother in an assisted living facility. The majority of carers were aged in the 20-29 year age group. Male family members were identified as primary carers by only 7.6% of subjects who ranged in age from 61 years to 73 years and therefore were relatively young.

4.2 Results of the 6CIT

The total scores achieved by the subjects on the 6CIT are shown in Table 3. Individual item scores are shown in Table 4.

Table 3
Scores attained on the 6CIT

Total Score	Number of subjects	% of total sample
0	28	30.4
0-4	20	21.7
5-9	13	14.1
10-14	20	21.7
15-19	8	8.7
20-24	1	1.1
25+	2	2.2

The maximum score for the test is 28, indicating severe cognitive impairment; the minimum is 0 indicating no cognitive impairment. Thirty point four percent of subjects responded correctly to all items on the test; 33.7% had scores greater than 9, while 12% had scores greater than 14.

4.2.1 Individual items

The percentage of subjects who responded correctly to individual items are given below.

What month is it now? This item had the highest number of correct responses: 92.4%.

What year is it now? This item had 81.5% correct responses.

Table 4
Individual item scores on the 6CIT

Item	Score	Number of subjects	% of total sample
Year	0	75	81.5
	4	17	18.5
Month	0	85	92.4
	3	7	7.6
Time	0	71	77.2
	3	21	22.8
Reverse count	0	52	56.5
	2	5	5.4
	4	35	38.0
Reverse months	0	44	47.8
	2	1	1.1
	4	47	51.1
Memory phrase	0	64	69.6
	2	13	14.1
	4	7	7.6
	6	6	6.5
	8	1	1.1
	10	1	1.1

About what time is it now? This item had a 77.2% correct response rate. The culturally-accepted Xhosa way of telling the time confounded the results on this item.

Count backwards from 20-1. Fifty six point five percent responded correctly to this item, while 5.4% made one error; 38% made two or more errors.

Say months in reverse order. This task was correctly performed by 47.8% of subjects; 1.1% of subjects made one error, while 51.1% made two or more errors.

The 5 part local address, *Pumla/Zibi/Z69/Jama Road/Khayelitsha*, memory phrase was correctly repeated by 69.6% of subjects. One error was made by 14.1% of subjects; two errors were made by 7.6 % of subjects; three errors made by 6.5% of subjects; four errors by 1.1% and five errors by 1.1% of subjects.

Table 5
Difficulty of items in 6CIT

Item	percentage of subjects making errors
Month	7.6
Year	18.5
Time	22.8
Memory Phrase	30.4
Reverse count	43.0
Reverse months	52.2

The rank order of difficulty in responding to the items correctly differed from that reported by Katzman *et al* (1983), in their Orientation-Memory-Concentration test. Their results were as follows: Time 24.2%; Reverse count 31.9%; Month 38.5%; Year 40.7%; Reverse months 63.0%; Memory Phrase 86.6%.

A significant Pearson product-moment correlation was found between the 6CIT score and education, measured by the level of schooling achieved by the subjects: $r = -.52$ ($p < .05$) ($N=92$). The negative correlation indicates that as the level of education of the subject increased, the cognitive ability also increased, reflected in lower scores on the 6CIT. The correlation between the 6CIT score attained by subjects and their age, $r = .36$ ($p < .05$)

(N=92) was positive, indicating that an increased score on the 6CIT, i.e. cognitive ability declined, with age of the subjects. There was no correlation between the scores of 6CIT and years lived in an urban area: r =-.09 (p=.36) N=92. The correlation between education and years lived in an urban area was significant, r =.34 (p<.05) (N=92)

To test the assumption that cognitive scores are dependent on the respondent's age and education a multiple regression analysis was performed. The multiple regression analysis summary is shown in Table 6. The beta weights suggest that education is more important than age as a predictor of the 6CIT score attained by subjects and this is confirmed by the variance in the dependent variable.

Table 6
Regression summary for the 6CIT total score (a)

	BETA	Std error of BETA	B	Std error of B	t(89)	P-value
Intercept			-2.29	6.54	-.35	.73
Education	-.45	.10	-1.07	.23	-4.63	.00
Age	.18	.10	.16	.09	1.87	.07

$R = .54$ $R^2 = .29$ Adjusted $R^2 = .28$

F (2,89)=18.80 p>.00000 Std error of estimate: 5.52

The adjusted R^2 value obtained, i.e. $R^2 = .28$ indicates that 28% of the variance in the score obtained in the 6CIT is predictable by the educational status and age of the subjects. When urban years are included in the multiple regression analysis, the p value for age becomes .05 This value is only just significant at 95% confidence and the contribution that the years lived in an urban area makes to the 6CIT score is minimal. The influence of the urban years is mainly incorporated in the educational status of the subjects. Thus Table 7 confirms that education accounts for most of the variance in the dependent variable and that age and years lived in an urban area contribute little to the analysis.

Almost two-fifths of the subjects (39.1%) reported that they had no schooling. However, 19% (7) of these subjects obtained perfect scores on the test; 72% (26) made errors in both reverse counting and reverse months and 8.3% (3) made errors only in recounting the months in reverse. A fifth (20.6%) of the subjects reported that they had attended secondary school; more than half (52.6%) of these subjects had perfect scores. Errors in counting backwards were made by 15.7% of subjects; errors in giving the months backwards were made by 15.7% (3) and 5.3% (1) gave an incorrect time. Two subjects made one error in the recall item.

Table 7
Regression summary for the 6CIT total score (b)

	BETA	Std error of BETA	B	Std error of B	t(88)	p-value
Intercept			-3.82	6.65	-.57	.57
Education	-.48	.10	-1.15	.24	-4.80	.00
Age	.19	.10	.17	.09	1.99	.049
Urban Year	.11	.09	.04	.03	1.21	.23

$R = .56$ $R^2 = .31$ Adjusted $R^2 = .28$

$F(3,88) = 13.08$ $p > .00$ Std error of estimate: 5.51

4.2.2 Reliability of the 6CIT scores

Internal consistency was assessed by Cronbach's alpha which was .72 in the sample indicating that there was acceptable reliability at the lower boundary.
A reliability analysis of the items of the 6CIT is shown in Table 8.

The average inter item correlation, $r = .33$ indicates that the individual items are measuring different aspects of cognition and should all be retained in the test. Cronbach's alpha score for each item gives the internal consistency reliability of the test if the item were removed from the test.

The item *time*, had the lowest item/total, r =.25, indicating that a change in it had the least predictive value of the total score. However, when it is removed from the scale, Cronbach's alpha becomes .73 which is very close to the alpha score of .72 for the whole test. It is therefore not warranted to remove it from the test.

Table 8
Individual item correlation of the 6CIT

Item	Mean	Variance	SD	Item/Total correlation (r)	Cronbach's alpha
Year	5.79	30.73	5.54	.51	.66
Month	6.30	36.71	6.06	.48	.70
Time	5.85	36.59	6.05	.25	.73
Count	4.89	26.14	5.11	.62	.62
Months	4.47	25.42	5.04	.63	.62
Memory	5.36	29.06	5.39	.36	.72

Scale summary: Mean =6.53, Standard deviation =6.51 N=92

Cronbach's alpha: .72

Average inter item correlation: .33

4.3 Results on the modified BADL

Scores achieved by the subjects on the modified BADL are shown in Table 9. The maximum possible score on the scale was 48, indicating total dependence of subjects in activities of daily living, and the minimum was 0, indicating that the subjects were independent in the performance of activities of daily living. However, in the study population the maximum score attained was 26. The scores on the BADL ranged from 0 in 33.7% of cases to 26 in 2.2% of cases.

Table 9
Scores attained on the modified BADL

Total Score	Number of subjects	% of total sample
0	31	33.7
1-5	21	22.8
6-10	12	13.0
11-15	10	10.9
16-20	12	13.0
21-25	4	4.3
>25	2	2.2

Responses to individual items are shown in Table 10. For all items, except for the item on care of teeth and the use of a telephone, a score of zero indicates that there was no change in the performance of the activity by the subject, compared to previous performance of the task. More than a fifth of the subjects (21.7%) had no teeth, and 2.1% never used or did not have access to a telephone. For these subjects, the corresponding items for these activities of daily living were not applicable.

Table 10
Percentages of subjects ranked according to item score

Item	0	1	2	3
Eating	98.9	1.1	0.0	0.0
Teeth	94.6	4.3	1.1	0.0
Communication	93.5	6.5	0.0	0.0
Food	88.0	4.3	3.3	4.3
Transfers	85.9	13.0	1.1	0.0
Drink	82.6	7.6	1.1	8.7
Orientation-space	80.4	17.4	2.2	0.0
Toilet	77.2	0.0	21.7	1.1
Hygiene	71.7	5.4	22.8	0.0
Mobility	70.7	2.2	27.2	0.0
Dressing	66.3	7.6	26.1	0.0
Finances	65.2	29.3	2.2	3.3
Orientation-time	57.6	28.3	12.0	2.2
Telephone	56.5	7.6	6.5	29.3
Shopping	53.3	16.3	22.8	7.6
Housework	48.9	28.3	7.6	15.2

4.3.1 Reliability of the modified BADL scores

The reliability analysis is presented in Table 11. Internal consistency was assessed by Cronbach's alpha, which gave a score of .88 in the sample indicating acceptable reliability at the lower boundary.

The average inter/item correlation, r =.34, indicates that the items are not highly correlated and are measuring different aspects of activities of daily living. Items, *eating;* r =.25, *teeth*; r =.26 and *communication*; r =.35 had the lowest predictive values of the total score. However, when these items are removed from the scale, the change in Cronbach's alpha is only .01. This indicates that they should be retained in the scale.

Table 11
Reliability analysis of the modified BADL

Item	Mean	Variance	Standard deviation	Item/total correlation	Cronbach's alpha
Food	6.86	53.43	7.31	.44	.88
Eating	7.09	58.08	7.62	.25	.89
Drink	6.74	49.32	7.02	.68	.87
Dress	6.50	48.49	6.96	.76	.87
Hygiene	6.59	50.00	7.07	.65	.87
Teeth	7.03	57.25	7.57	.26	.89
Toilet	6.63	49.25	7.01	.70	.87
Transfer	6.95	54.96	7.41	.58	.88
Mobility	6.53	50.07	7.08	.61	.88
O-time	6.51	53.18	7.29	.41	.88
O-space	6.88	54.69	7.39	.52	.88
Communication	7.03	57.12	7.56	.35	.89
Telephone	6.01	44.79	6.69	.66	.88
Housework	6.21	48.31	6.95	.60	.88
Shopping	6.25	47.90	6.92	.67	.87
Finances	6.66	51.74	7.19	.62	.88

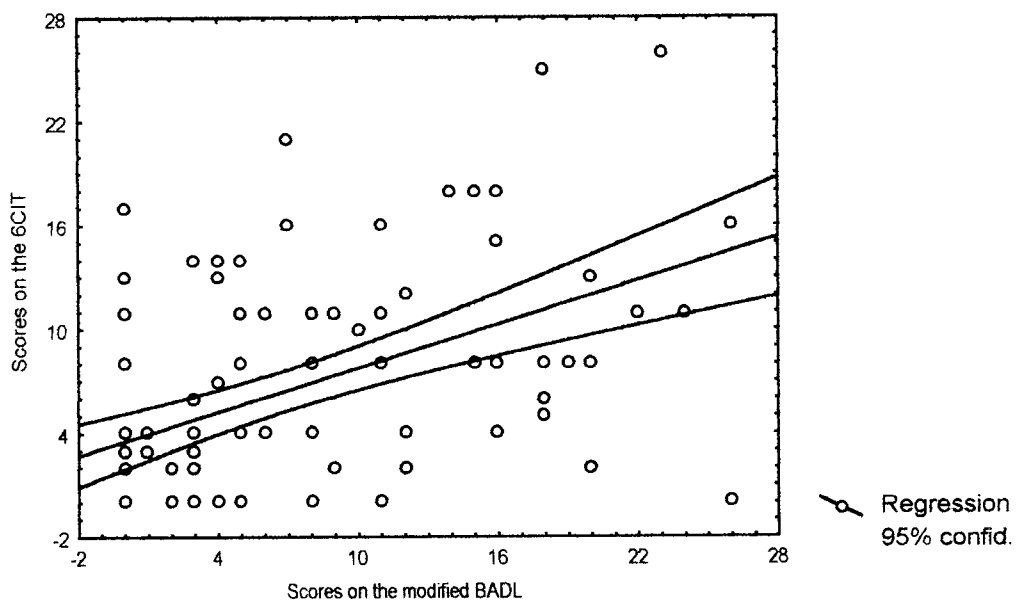
Cronbach's alpha =.88
Average inter item correlation =.34.

4.4 Correlation between scores on the 6-CIT and the modified BADL scale

The 6CIT scores correlated well with the modified BADL scores: r =.50 ($p<0.05$). The scatter plot of the scores achieved on the cognitive test and the scores on the activities of daily living scale showed that the scores correlated well for the lower scores.
Figure 1 shows the two-tailed 95% confidence band for the prediction of the scores on the 6CIT and the scores on the modified BADL.

Fig. 1

Correlation between the scores on the 6CIT and the modified BADL



Correlation: r =.50

The scatter plot shows that in some cases there are high scores on the BADL that were paired with low scores on the 6-CIT. This indicated that for these subjects, factors other than cognitive ability, such as physical condition or psychological factors could have impacted on the older person's ability to carry out activities of daily living.

4.5 Cultural appropriateness of the instruments

4.5.1 The 6CIT

Five of the six items in the cognitive test were appropriate for the population. The field workers reported that the subjects had no difficulty in understanding what was required of them to respond to the items. There were no ambiguous answers: subjects either responded correctly or did not.

The item "What time is it now?" prompted a variety of responses. Subjects who answered in the traditional Xhosa way used broad terms to describe the time. They said *kusasa* to describe any time in the morning; *kusemin*, for the period between noon and one; and *kusemva kwemini*, for the period after 13.00 to the late afternoon. The late afternoon was referred to as *kusemalanga*. Because the test allowed for the person to give the time within one hour of the actual time, questionnaires administered at about midday had three correct responses.

4.5.2 The modified BADL scale

The original BADL scale was modified after discussion with Xhosa women and tested in the pilot study. In the study all of the previously modified items on the BADL were fully understood by the carers. However the items that were marked "Not applicable" were revisited.

The items , *Cleans teeth as before, Cleans teeth only if given water and toothpaste or gargle, Able to clean teeth but needs help, Unable to clean teeth, Not applicable,* were marked "not applicable" for 21.7 % of subjects. In its original form the BADL scale gave the option of cleaning teeth or dentures. In the modified BADL scale dentures were omitted because of the unlikelihood of the subjects having dentures. However, some without teeth cleaned their mouths with gargle, although this option was not available to

them. It is recommended that in future studies the item be modified to read, *Cleans teeth/mouth as before.*

The item about the telephone was marked "not applicable" by 2.1% of subjects. In these cases the subject had never used a telephone or did not wish to do so. It was not deemed necessary to modify the item based on the two *Not applicable* scores.

No other items were highlighted by the results as being either not applicable or not easily understood by the subjects.

CHAPTER FIVE Discussion

5.1 The study and the results

Occupational therapy in South Africa has its roots in the UK and the USA. South African occupational therapists need to develop a culturally-appropriate practice and to do this they need to develop tools that are culturally sensitive for the population or to have such tools available to them. Screening tools that are universally accepted and are used in developed countries, that can be modified for local use without changing key concepts, are valuable tools for the purpose of interdisciplinary and world-wide communication.

The aim of this study was to test two screening tools for dementia that have been validated for use in the UK. A previous attempt to modify a cognitive test for the black South African population was not successful because of the test's inherent reliance on literacy, numeracy and linguistic skills. Activities of daily living scales that are used for the detection of dementia in older persons in other countries have not been standardised for use in a black African older population. It is difficult, in South Africa, to validate screening tools for dementia against a definitive diagnosis of the disease as is the case in the UK or USA because there is generally a lack of knowledge about dementia in a black older population. This study has examined both the performance of activities of daily living and cognitive ability of a sample of black older women and has determined a correlation between the scores on both tests. The results of the study are now discussed, bearing in mind the potential value of the instruments as screening tools for use in South Africa.

5.1.1 Sample Profile

The sample frame had not been surveyed prior to this study. It was not known how many older women lived in the area. The study yielded a profile of older women in Z and S sections, 50% of which were in the age group, 70-79 years. Epidemiological studies

carried out in developed countries show that 10% to 15% of this age group are reported to suffer from dementia (Brodarty 1998). A few studies have been conducted in Africa, but no prevalence rates have been established and it therefore cannot be assumed that developed country prevalence rates are typical of the study population.

The study showed a low level of schooling of the subjects (39.1%) The lack of formal education in the older population has implications for communication and future research with older persons in the area. There is a need for instruments that are easily understood by subjects with low education such as the modified BADL and 6CIT. Instruments used in future studies should not be dependent on literacy or numeracy skills or contain complex linguistic tasks.

Only a fifth of the sample reported no medical conditions. Older people are limited by their increasing physical frailty due to normal ageing processes (Hasselkus 1993; Matheson & Bohr 1997). Poor treatment of chronic conditions, such as hypertension, heart disease, diabetes, diarrhoea and asthma, and a living environment that does not support frailty adds to the burden of old age and impacts on their occupational performance.

Brodarty (1998) has stated that when a doctor diagnoses a patient with dementia , there is almost always a hidden second patient. He refers to the carer who has the burden of caring for the person with dementia. In the present study the data showed that almost half of the carers (46.8%) were younger than 29 years. In two fifths of cases (40.2%) the carers were grand daughters. The reason for the high number of young carers to the older women was explained as follows: The daughters of the older women lived away from home at their workplace, or, the daughters were "no-good" and had "run away". One of the daughters explained that although she was still in contact with her mother, she had handed over responsibility for care to her daughter. In this case the daughter, who was present in her mother's house at the time of the interview, stated that she had no right to comment on her mother's activities because the grand daughter had assumed the role of primary care giver. The daughter would not act as a proxy respondent for her mother.

In Westernised communities young women between the ages of 20 years and 29 years would typically be either at a tertiary institution or employed. Middle aged women would typically be tasked with the care of their parents. The difference in occupations of Westernised young adults and those living in black townships has implications for occupational therapy practice in communities such as Khayelitsha. The curriculum and ethos of occupational therapy training (MacDonald and Rowe 1995) should therefore take cognisance of the cultural and socio-economic differences that determine the developmental tasks of young adults who care for their grand mothers.

In seven cases the primary carers were male family members because there were no female relatives to care for the older woman. Traditionally, male carers would have had limited knowledge of personal basic activities of daily living of the older subjects. The reliability of items on toilet, hygiene and dressing, as reported by the male carers is therefore questionable. Older women, with no female relatives are at greater risk of being moved to an institution if they become frail, than those who have carers whose assistance is accepted in the most personal activities of daily living. Moving into an institution negatively affects older people with dementia. The "environmental docility theory" (Hasselkus 1993) argues that older people with dementia will struggle and fail to adapt to the environment if they are moved to an institution because they need simple, familiar living environments. A goal of occupational therapists, therefore, would be to ensure that environmental modifications are employed so that the older person remains in their familiar environment for as long as possible. Older persons who suffer from dementia and who have no carers in Khayelitsha have limited options in terms of residential facilities where they would receive care.

5.1.2 Scores on the 6CIT

There were differences in the difficulties experienced by subjects in this study and those in the study of Katzman *et al* (1983). In the US study, the memory phrase was found to be the most difficult for subjects, while the item about the reverse months was the most

difficult for the Xhosa subjects. Memory loss is typically the first noticeable sign of possible dementia. In the present study, subjects who had high scores on the 6CIT but had perfect recall, were unlikely to be suffering from dementia and the poor score attained by the subject was due to other factors such as a low educational level.

The reverse months item relied on the subjects knowing the correct order of the months and then having the attention, calculation and problem solving ability to recite them in the reverse order. In an urban environment, exposure to the concept of the date is ubiquitous. The subjects generally had no difficulty in reciting the months in the correct order, which indicates that in urban areas, older residents are familiar with the calendar.

Counting backwards was difficult for subjects who had not attended school and those who had not developed functional numeracy during their lives. However, fewer errors were made in reverse counting than in the reverse months, the more difficult task, as was the case in the Katzman *et al* (1983) trial.

The memory phrase, a typical address in the sample frame, was repeated well. Only one subject failed to remember any part of the address. The subject was 95 years old and the only item that she correctly reported was the item *What is the time now?* In 9.7% of cases three or more errors were made in repeating the memory phrase. As memory impairment is a key criterion for the diagnosis of Alzheimer's disease (DSM IV), it appears that only a small number of subjects in this study could be suffering from Alzheimer's disease or another type of dementia.

Unexpected results were as follows: Two subjects who failed to answer any of the orientation and calculation items correctly had perfect recall. On closer examination of the subjects' performance on the test it was seen that they were both 85 years old and both had no schooling. However, one subject had lived in an urban environment for 50 years and the other for only ten years. It is surprising that they were unable to give the correct year or time considering their exposure in an urban area to these factors.

In the Katzman *et al* (1983) trial, a score of 10 was used as a cut off point to indicate early dementia. The trial conducted by Brooke and Bullock (1999) used a score of 7 or 8 as the cut off point for early dementia. In the South African study it was found that approximately one third of subjects (33.7%) attained a score higher than 10. It is highly unlikely that this score indicates early dementia in such a high percentage of the population. Twelve percent of the study population scored higher than 15 on the test. This is a more realistic cut off score that would indicate further investigation by health professionals.

5.1.3 Scores on the modified BADL scale

In general, scores on the modified BADL scale were low, suggesting that the subjects continued to perform activities of daily living adequately; none were fully dependent on carers. Musculoskeletal conditions and the resultant mobility problems contributed to a general withdrawal from some activities such as housework and shopping. Other medical complaints such as heart disease, chest complaints and less acuity of the senses all contribute to decreased energy levels in older subjects. Thus it is expected that activities of daily living will be affected. In the carers' responses to the item about *Housework*, the carers who reported poor performance reported that the subject "Cleans the house but misses some dirt". Thus housework appears to be a valued occupation and the subjects continue to do it, although not as well as previously. However, the subjects may have been in the process of withdrawing from the role as house keeper as their frailty and dependence on the environment for cues increased (Matheson and Bohr 1997).

The item *Orientation-Time* had an interesting response. Carers reported that in 28.3% of cases the subjects were "unaware of time/day/date but is not worried about it". Possible explanations for this could be that the subjects had no deadlines to meet or places to go at specific times. This could have implications for support programmes that time-strapped therapists might want to set up in a community to assist older people.

There was a tendency for the subjects to perform the IADL tasks less well than tasks associated with basic bodily needs. However, no comparison can made between the performance of the subjects in the Bucks *et al* (1996) study, in which there was a hierarchical pattern of ADL performance, because the subjects in that study were selected because they were known to suffer from dementia. The Xhosa-speaking study population appeared to be mostly independent in ADL.

Results indicated that the majority of subjects were independent in food preparation (88%). This could be a reflection of the simplicity of the activity of cooking the staple food, a stiff porridge. Nearly all subjects (98.9%) scored 0 on the *eating* item. The item was modified in this study to include eating with hands which is culturally acceptable in the sample population. This finding emphasised the importance of using culturally appropriate tools for the detection of dementia because inappropriate social behaviour, such as eating with hands in a Western setting might be attributed to a severe dementia but in some South African contexts is socially acceptable practice.

The use of an informant-scale in this study was acceptable to the subjects because no subjects objected to their carer's assessment of their ability to perform activities of daily living. There was no advantage for the carers to misrepresent the state of the subject's ADL to the field workers. The advantage to the therapist and the client in involving the carer in the assessment stage of the client is that the person closest to the client becomes an integral part of the occupational therapy process. Furthermore the carer has knowledge of what the normal performance of activities of daily living for the individual is which is important in documenting change in the ability to perform activities of daily living. The first option on the modified BADL scale refers to the usual way in which an activity is carried out by the individual, hence the wording ca*rries out activity as before.* A further advantage that would arise from including the carer in the treatment process at the outset is to avoid later problems arising from ignorance about the disease process.

The subject's total score on the modified BADL scale did not indicate how many applicable items had been included in the scale for the individual. An individual's

performance could not be compared to that of another individual because he/she might have been scored on a different number of items. However, a different method of scoring would enable the researcher to compare performance across individuals. Scoring could be as follows: The actual score of the subject divided by the potential score on applicable items multiplied by 100. This score would give an overall percentage performance which is comparable to other individuals' percentage scores. High percentages would indicate severe performance deficits in activities of daily living.

5.1.4 Correlation

There was a moderate correlation, at the lower limit, between the cognitive score and the ADL score ($r = .5$) which is considered to be an acceptable correlation when there has been naturalistic sampling. In this study a full range of scores for the 6CIT was recorded, minimum score was 0, maximum score was 26 out of a possible 28, whereas on the modified BADL scale the maximum score attained by subjects was 26 out of a possible 48, resulting in a non-Gaussian distribution of scores. An attempt to represent the correlation between low, medium and high scores on both instruments in a cross tabulation failed because there were no high scores on the modified BADL. Furthermore the cross tabulation was misleading because in some cases those who scored low on one instrument scored highly on the other instrument.

Aspects of cognition that are not tested in the 6CIT, such as motivation, planning and organisation, impact on the performance of activities of daily living (Duchek and Abreu 1997). The 6CIT is not designed to give a comprehensive assessment of the mental status of the subject but to detect the main cognitive deficits that occur in people with dementia. The study showed that in some cases apparently cognitively sound subjects were unable or unwilling to perform activities of daily living. In others when the score on the 6CIT indicated that there was severe cognitive impairment, there was little impact on the performance of ADL. High scores on both instruments suggested possible dementia. High scores on either instrument alone, suggested that further assessment be conducted to determine which factors, other than those tested for in the 6CIT, caused the dysfunction.

5.2 Limitations of the study

Limitations of the study arose from the language, gender and living arrangements of the study population. The language of the study population is Xhosa, which is one of eleven official languages in South Africa. Instruments would thus have to be translated into eight other African languages and used before assumptions may be made about the black South African population.

The study was conducted on an urban-living population therefore no assumptions can be made about a rural population.

The study population was confined to women, because of the content of some of the items in the modified BADL scale. The field workers had indicated prior to the study that it would be culturally inappropriate for them to interview older men.

CHAPTER 6 Conclusion and Recommendations

6.1 Conclusion

Instruments that measure cognitive deficits and dysfunction in the performance of activities of daily living are used to screen for dementia. However, instruments used in South Africa are generally validated in the USA or UK. Two tests that lend themselves for modification for local cultural conditions are the 6CIT and the BADL. The 6CIT has been modified for use in South Africa by translating it into Xhosa and substituting a local address, typical of the sample frame, for the memory phrase. The BADL was modified for local conditions by simplifying the wording of the items, discarding irrelevant items and translating it into Xhosa.

The study was conducted in Khayelitsha, a low income urban area, populated by mainly Xhosa people. The interviews of 92 subjects and 92 carers were carried out by Xhosa-speaking field workers who were resident in the area.

The instruments were found to be culturally acceptable, easily administered in a short time by the non-professional health workers. The instruments were not reliant on the ability to read or write.

The sample profile indicated that educational standard of the subjects was low and this was identified as a confounding factor in the responses to some items on the 6CIT.

Results on the modified BADL indicated that generally the subjects were able to perform activities of daily living with no or minimal assistance. A correlation between the scores on the two instruments was unpredictable in some subjects where high scores on the 6CIT were paired with low scores on the modified BADL. The number of subjects who attained scores above the cut off score that indicated early dementia in other studies was

too high in relation to world wide dementia prevalence trends to be taken at face value. However, further studies, supported by a diagnosis of dementia given by a health practitioner of subjects with suspected dementia, will be able to determine cut off scores for the stages of dementia using these instruments.

6.2 Recommendations

6.2.1 Research

- Further validation of both instruments is indicated for all language groups in South Africa. The study was conducted in English and Xhosa which are two of eleven different languages in South Africa.
- A study population comprised of known black African dementia sufferers living in an institution for frail older individuals or attending a psychiatric unit in a hospital would facilitate the allocation of cut off scores on the 6CIT for mild, moderate and severe dementia.
- It is recommended that modification and validation of the 6CIT instrument is researched among a black older population domicile in a rural environment.
- Further research using the modified BADL to collect data from a study population of known dementia sufferers, living in the rural or urban communities, would provide information about the hierarchy of loss of ability to perform instrumental activities of daily living in a black older population.
- A further validation study is recommended incorporating men in the study population.

6.2.2 Occupational Therapy

- It is recommended that these instruments be made available to occupational therapists working with older people in the public, private and community settings. The instruments, as part of a battery of tests for older persons in South Africa, will become aids that facilitate interdisciplinary communication and a culturally appropriate service.

- The modified BADL is able to detect small changes in functional ability over time and thus can be used by therapists to assess deterioration in the performance of activities of daily living of clients suffering from dementia. Appropriate treatment plans are thus facilitated for older individuals and their families.
- The instruments can be used to determine specific deficits in function and cognition. It is recommended that occupational therapists use the instruments to assist in planning environmental modification for the dementia sufferer and in planning support programmes for carers.

6.2.3 Health professionals

- Distribution of the instruments at primary health care level is recommended to home carers, community workers, district nurses and nurses at the community health centres. Cognitive screening of the older black population at the primary level would assist in the early intervention and diagnosis of Alzheimer's disease and other types of dementia. Referrals to the appropriate practitioners at secondary and tertiary levels using the scores on the test as a common language will facilitate communication between health practitioners at primary, secondary and tertiary health care centres.
- After further validation of the instruments, the prevalence of dementia in South Africa needs to be measured as part of the global debate about the world wide phenomenon of an older population that is increasing in numbers and is increasing proportionally in the total population.
- Data about the cognitive status and the participation in activities of daily living of older individuals in the context of an AIDS epidemic and widespread poverty will contribute to policies being enacted to improve health care facilities for the older population.

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Appendix 1. Background information questionnaire

SUBJECT NUMBER (.....) DATE (.....)
GAMA LOMNTU OBUZAYO *(NAME OF INTERVIEWER)*.....

1. IGAMA LOMNTU LOWO UMDALA *(NAME OF OLDER PERSON)*.....

.....

2. UMHLA WOKUZALWA *(DOB)*.....

3 UYEKE KWELIPHI IBANGA ESIKOLWENI*(LEVEL OF EDUCATION)*.....

4. IDILESI *(ADDRESS)* .....

..... (indlu yezitena,*brick house*) (lityo tyombe,*shack*)

5 ABANYE ABANTU ABAHLALA ENDLINI *(OTHER PEOPLE WHO LIVE IN THE HOUSE)*

Inani labantwana abanga phantsi kweshumi elinesithandathu *(no of children under 16 years)*( )

Inani labadala *(number of adults)* ( )

6. UNEXESHA ELINGAKANANI UHLALA EDOLOPHINI/ELOKISHINI*(HOW LONG HAVE YOU LIVED IN AN URBAN AREA?)*.....

7. INGABA KUKHO EZINYE IZINTO EZINXULUMENE NEZEMPILO EZICHAPHAZELA LOMNTU *(ARE THERE MEDICAL CONDITION/S AFFECTING PERSON?)*

(Ewe,*Yes*) (Hayi,*No*) (circle the correct response)

Ukuba zikhona zichaze *(If yes state them)* .....

.....

8. IGAMA LOMNONOPHELI/ILUNGU LESAPHO *(NAME OF CARER/FAMILY MEMBER)*

.....

9. UMHLA WOKUZALWA *(DOB)* .....

10. UBUHLOBO NALO MNTU UMDALA *(RELATIONSHIP TO ELDERLY PERSON)*

.....

11. UNEXESHA ELINGAKANANI AGCINE IOMNTU UMDALA? *(HOW LONG HAVE YOU CARED FOR THE OLDER PERSON?)*.....

12. UHLALA KWIKHAYA ELINYE NOMNTU OMDALA? *(DO YOU LIVE IN THE SAME HOME AS THE OLDER PERSON?)* (Ewe, Yes) (Hayi,No)

13. UKUBA AKUNJALO ITHINI IDILESI YAKHO? *(If no What is your address?)*

.....

Appendix 2. The modified 6-item cognitive impairment test

SUBJECT NUMBER(.....) DATE(.....).

TIME OF TEST(.....)

The 6 Item Cognitive Impairment Test (6CIT)

	Answers	Maximum error	**Score**	**Weight**	**Weighted score**
Ngowuphi lo nyaka *(What year is it now?)*		1		*4	
Yeyiphi le nyanga *(What month is it now?)*		1		*3	
Linganisa uphinde la mazwi ndiwathethayo. Yi address le*(Memory phrase (Address)- repeat after me)* **Pumla / Zibi / Z69 / Jama Road / Khayelitsha**					
Ngubani ixesha ngoku *(About what time is it now (within 1 hour)*		1		*3	
Bala ukusuka ku 20-1 *(Count backwards 20 1)*		2		*2	
Biza inyanga uqala emva *(Say months in reverse order)*		2		*2	
Yitsho laa mazwi akwisicatshulwa esingentla(idilesi) *(Repeat the memory phrase)*		5		*2	

Score 1 for each incorrect response

TOTAL

Write down responses for:
Count backwards.....

Months in reverse order.....

Memory phrase.....

Appendix 3. The modified Bristol Activities of Daily Living Scale, English and Xhosa versions

THE BRISTOL ACTIVITIES OF DAILY LIVING SCALE (MODIFIED)– ENGLISH VERSION

This questionnaire is designed to reveal the everyday ability of people who have memory difficulties of one form or another.
For each activity. Statements a-e refer to a different level of ability. Thinking of the last four weeks, tick the box that represents your relative's ability.
Only one box should be ticked for each activity.
(If in doubt about which box to tick, chose the level of ability which represents their average performance over the last four weeks).

1.FOOD

A	Able to prepare food as before	**0**
B	Able to prepare food only if food is put out	**1**
C	Able to prepare food only if shown step by step	**2**
D	Unable to prepare food	**3**
E	Not applicable	**0**

2.EATING

A	Eats as always used to	**0**
B	Needs someone to cut up or mash food	**1**
C	Needs someone to help guide food to mouth	**2**
D	Needs to be fed	**3**
E	Not applicable	**0**

3.DRINK

A	Able to make tea/coffee as before	**0**
B	Able to make tea/coffee only if ingredients put out	**1**
C	Able to make tea/coffee only if shown step by step	**2**
D	Unable to make tea/coffee	**3**
E	Not applicable	**0**

4.DRESSING

A	Dresses as before	**0**
B	Puts clothes on incorrectly	**1**
C	Tries to dress self but needs help	**2**
D	Has to be dressed	**3**
E	Not applicable	**0**

5.HYGIENE

A	Washes self as before	**0**
B	Able to wash self only if given soap, towel and water	**1**
C	Able to wash self but needs help	**2**
D	Has to be washed	**3**
E	Not applicable	**0**

6.TEETH

A	Cleans teeth as before	**0**
B	Cleans teeth only if given water and toothpaste or gargle	**1**
C	Able to clean teeth but needs help	**2**
D	Unable to clean and teeth	**3**
E	Not applicable	**0**

7.TOILET

A	Uses toilet as before	**0**
B	Able to use toilet or bucket if helped	**1**
C	Incontinent of urine	**2**
D	Incontinent of urine and faeces	**3**
E	Not applicable	**0**

8.TRANSFERS

A	Able to get on and off a chair as before	**0**
B	Able to get on a chair but needs help to get off it	**1**
C	Needs help getting on and off chair	**2**
D	Has to be lifted on and off a chair	**3**
E	Not applicable	**0**

9.MOBILITY

A	Walks as before	**0**
B	Walks holding onto the wall or someone's arm	**1**
C	Walks with a stick	**2**
D	Unable to walk	**3**
E	Not applicable	**0**

10.ORIENTATION -TIME

A	Understands the time/day/date as before	**0**
B	Unaware of time/day/date but is not worried about it	**1**
C	Repeatedly asks what the time/day/date is	**2**
D	Mixes up night and day	**3**
E	Not applicable	**0**

11.ORIENTATION- SPACE

A	Aware of surroundings as before	**0**
B	Aware of familiar places only	**1**
C	Gets lost in home, needs reminding where toilet is	**2**
D	Unable to recognise own home	**3**
E	Not applicable	**0**

12.COMMUNICATION

A	Able to converse as before	**0**
B	Understands others and tries to talk back	**1**
C	Unable to talk to others but can understand what is being said.	**2**
D	Does not talk	**3**
E	Not applicable	**0**

13.TELEPHONE

A	Uses telephone as before	**0**
B	Uses telephone with help	**1**
C	Answers telephone but does not make calls	**2**
D	Does not use the telephone	**3**
E	Not applicable	**0**

14.HOUSEWORK

A	Able to clean the house as before	**0**
B	Cleans the house but misses some dirt	**1**
C	Needs help to clean the house	**2**
D	Does not clean the house	**3**
E	Not applicable	**0**

15.SHOPPING

A	Able to shop as before	**0**
B	Only able to shop for a few goods at a time.	**1**
C	Needs a person to help them shop	**2**
D	Unable to shop	**3**
E	Not applicable	**0**

16. FINANCES

A	Manages finances as before and collects own pension	**0**
B	Understands the value of money but needs help to collect pension	**1**
C	Does not understand the value of money and needs someone to help to collect pension	**2**
D	Unable to collect pension or understand money values	**3**
E	Not applicable	**0**

TOTAL SCORE .....

Thank you for your participation

THE BRISTOL ACTIVITIES OF DAILY LIVING SCALE (MODIFIED)– XHOSA VERSION

Le mibuzo yenzelwe ukwazi ngobume bobomi babantu abanengxaki zokukhumbula. Xa ubuza, cinga ngesithuba seeveki ezine, ukhombe ibhokisi ecacisa indlela enza ngayo umntu. Kumba ngamnye khetha ibhokisi ibe nye.

1.UKUTYA

A	Uyakwazi ukulungisa ukutya nje nga phambili	**0**
B	Uyakwazi xa ukutya kubekiwe	**1**
C	Uyakwazi xa eboniswa inqanaba nenqanaba	**2**
D	Akakwazi kulungisa kutya	**3**
E	Ayikho	**0**

2.UKUZITYISA

A	Utya nje ngangaphambili	**0**
B	Ufuna umntu akucubhe okanye akunqunqe	**1**
C	Ufuna umntu amncedise ase ukutya emlonyeni	**2**
D	Ufuna ukutyiswa	**3**
E	Ayikho	**0**

3.UKUSELA

A	Uyakwazi ukwenza iti okanye ikofu nje ngangaphambili	**0**
B	Ukwazi ukuyenza xa izinto zayo ezikhutshelwe	**1**
C	Ukwazi ukuzenza xa eboniswa inqanaba nenqanaba	**2**
D	Akakwazi kwenza kofu okanye iti.	**3**
E	Ayikho	**0**

4.UKUNXIBA

A	Uzinxibisa nje ngangaphambili	**0**
B	Uzinxibisa ngendlela engeyiyo	**1**
C	Uyazama ukunxiba kodwa ufuna uncedo	**2**
D	Kufuneka anxityiswe	**3**
E	Ayikho	**0**

5.EZEMPILO

A	Uhlamba nje ngangaphambili	**0**
B	Uhlamba xa enikwe isepha itawuli namanzi	**1**
C	Uyazama ukuhlamba kodwa ufuna uncedo	**2**
D	Uyahlanjwa	**3**
E	Ayikho	**0**

6.AMAZINYO

A	Uwahlamba amazinyo nje ngangaphambili	**0**
B	Uwahlamba xa enikwe amanzi nesihlamba mazinyo okanye isixukuxi	**1**
C	Uyazama ukuwahlamba kodwa ufuna uncedo	**2**
D	Awukwazi kuwahlamba amazinyo	**3**
E	Ayikho	**0**

7. INDLU YANGASESE

A	Uyisebenzisa nje ngangaphambili indlu yangasese	**0**
B	Ukwazi ukusebenzisa indlu yangasese okanye ibucket xa encediswa	**1**
C	Uyashiywa ngumntsontso	**2**
D	Uyashiywa ngumntsontso nalilindle	**3**
E	Ayikho	**0**

8.UKUGUQULWA

A	Uyakwazi ukungena uphume esitulweni nje ngangaphambili	**0**
B	Uyakwazi ukungena esitulweni kodwa ufuna ukuncedwa ukuphuma	**1**
C	Ufuna ukuncedwa ukungena nokwehla esitulweni	**2**
D	Kufuneka afunqulwe ukungena nokwehla esitulweni	**3**
E	Ayikho	**0**

9.UKUHAMBA

A	Uhamba nje ngangaphambili	**0**
B	Uhamba ngokubambelela edongweni okanye engalweni yomnye umntu	**1**
C	Uhamba ngentonga	**2**
D	Akakwazi ukuhamba	**3**
E	Ayikho	**0**

10.UKWAZISWA- IXESHA

A	Uyalazi ixesha/usuku/umhla nje ngangaphambili	**0**
B	Akazi ngexesha/usuku/umhla kodwa ayimkhathazi lonto	**1**
C	Usoloko ebuza ixesha/usuku/umhla	**2**
D	Uyuabuphazamisa ubusuku ne-mini	**3**
E	Ayikho	**0**

11. UKWAZISWA - INDAWO

A	Uyazazi indawo ezikungqongileyo nje nganga phambili	**0**
B	Wazi indawo aziqhelileyo kuphela	**1**
C	Uyalahleka xa esekhaya kodwa ufuna ukhunjuzwa aphoikhoyo itoilet.	**2**
D	Ukakwazi ukulazi ikhaya lakhe	**3**
E	Ayikho	**0**

12.UQHAKAMSHELWANO

A	Uyakwazi ukuthetha nje nga ngaphambili	**0**
B	Uyabeva abanye xa bethetha azame ukuthetha naye	**1**
C	Ukakwazi ukuthetha nabanye kodwa uyabeva abakuthethayo	**2**
D	Akathethi	**3**
E	Ayikho	**0**

13. IFOWUNI

A	Uyisebenzisa ifowuni nje ngangaphambili	**0**
B	Uyisebenzisa ifowuni xa encediswa	**1**
C	Uyayiphendule ifowuni kodwa ukafowum	**2**
D	Akayisebenzisi ifowuni	**3**
E	Ayikho	**0**

14.UMSEBENZI WENDLU

A	Uyakwazi ukucoca indlu nje ngangambili	**0**
B	Uyayicoca indlu kodwa ayishiye enye inkunkuma	**1**
C	Ufuna uncedo lokucoca indlu	**2**
D	Akayicoci indlu	**3**
E	Ayikho	**0**

15. UKUTHENGA

A	Uyakwazi ukuthenga nje ngangaphambili	**0**
B	Uyakwazi ukuthenga ezinto ezimbalwa ngexesha	**1**
C	Ufuna umntu akuncede ukuthenga	**2**
D	Akakwazi ukuthenga	**3**
E	Ayikho	**0**

16. EZEMALI

A	Uyakwazi ukuyiphatha imali nje ngangaphambili kwaye uyilanda ngokwakho inkam-nkam	**0**
B	Uyalazi ixabiso lemali kodwa ufuna ukuncedwa ukuya kulanda inkam-nkam	**1**
C	Akalazi ixabiso lemali kwayo ufuna ukuncedwa ukuya kulanda inkam-nkam	**2**
D	Akakwazi ukulanda inkam-nkam okanye akuliqondi ixabiso lemali	**3**
E	Ayikho	**0**

TOTAL SCORE .....

Enkosi ngokuthabatha inxaxheba kule mibuzo.

Appendix 4. Modification of the Bristol Activities of Daily Living Scale

Original items in the BADL are shown below. The modifications made for the study and the reasons for making the changes are presented in the table below.

THE BRISTOL ACTIVITIES OF DAILY LIVING SCALE.

This questionnaire is designed to reveal the everyday ability of people who have memory difficulties of one form or another.
For each activity. Statements A-E refer to a different level of ability. Thinking of the last four weeks, tick the box that represents your relative's ability. If the person has not participated in the activity in the last month tick "E"
Only one box should be ticked for each activity.
(If in doubt about which box to tick, chose the level of ability which represents their average performance over the last four weeks).

	ORIGINAL BADL ITEM Activities considered over the last two weeks	**MODIFIED BADL ITEM** Activities considered over the last four weeks	**REASON FOR MODIFICATION** Pension is collected monthly

FOOD

A	Selects and prepares food as required	**A**	Able to prepare food as before	Ambiguous language, revised version valid for all styles of food preparation
B	Able to prepare food if ingredients set out	**B**	Able to prepare food only if food is put out	
C	Can prepare food if prompted step by step	**C**	Able to prepare food only if shown step by step	
D	Unable to prepare food even with prompting and supervision	**D**	Unable to prepare food	
E	Not applicable	**E**	Not applicable	

EATING

A	Eats appropriately using correct cutlery	**A**	Eats as always used to	Use of cutlery not necessarily used in the western way. Using fingers may be culturally acceptable.
B	Eats appropriately if food made manageable and/or uses spoon	**B**	Needs someone to cut up or mash food	
C	Uses fingers to eat food	**C**	Needs someone to help guide food to mouth	
D	Needs to be fed	**D**	Needs to be fed	
E	Not applicable	**E**	Not applicable	

DRINK

A	Selects and prepares drinks as required	**A**	Able to make tea/coffee as before	Making tea/coffee is a multi step process, rather than just drinking water. Question made specific for clarity of understanding
B	Can prepare drinks if ingredients left available	**B**	Able to make tea/coffee only if ingredients put out	
C	Can prepare drinks if prompted step by step	**C**	Able to make tea/coffee only if shown step by step	
D	Unable to make a drink even with prompting and supervision	**D**	Unable to make tea/coffee	
E	Not applicable	**E**	Not applicable	

DRINKING

A	Drinks appropriately	**A**	Question omitted. Assistive devices unavailable in area
B	Drinks appropriately with aids, beaker/straw etc	**B**	
C	Does not drink appropriately even with aids but attempts to	**C**	
D	Has to have drinks administered (fed)	**D**	
E	Not applicable	**E**	

DRESSING

A	Selects appropriate clothing and dresses self	**A**	Dresses as before	Ambiguous language. Made specific, applicable to all styles of dressing
B	Puts clothes on in wrong order and/or back to front and/or dirty clothing	**B**	Puts clothes on incorrectly	
C	Unable to dress self but moves limbs to assist	**C**	Tries to dress self but needs help	
D	Unable to assist and requires total dressing	**D**	Has to be dressed	
E	Not applicable	**E**	Not applicable	

HYGIENE

A	Washes regularly and independently	**A**	Washes self as before	Ambiguaous language.
B	Can wash self if given soap, flannel, towel, etc	**B**	Able to wash self only if given soap, towel and water	
C	Can wash self if prompted and supervised	**C**	Able to wash self but needs help	
D	Unable to wash self and needs full assistance	**D**	Has to be washed	
E	Not applicable	**E**	Not applicable	

TEETH

A	Cleans own teeth/dentures regularly and independently	**A**	Cleans teeth as before	Not specific, revised question explains what are appropriate items Dentures are uncommon
B	Cleans teeth/dentures if given appropriate items	**B**	Cleans teeth only if given water and toothpaste or gargle	
C	Requires some assistance, toothpaste on brush, brush to mouth etc	**C**	Able to clean teeth but needs help	
D	Full assistance given	**D**	Unable to clean and teeth	
E	Not applicable	**E**	Not applicable	

BATH/SHOWER

A	Bathes regularly and independently	**A**	Question omitted because access to baths is limited in area of study. Older people bathe their bodies using a bucket or basin.
B	Needs bath to be drawn/shower turned on but washes independently	**B**	
C	Needs supervision and prompting to wash	**C**	
D	Totally dependent, needs full assistance	**D**	
E	Not applicable	**E**	

TOILET/COMMODE

A	Uses toilet appropriately when required	**A**	Uses toilet as before	Options "C" and "D" the same
B	Needs to be taken to the toilet and given assistance	**B**	Able to use toilet or bucket if helped	
C	Incontinent of urine and faeces	**C**	Incontinent of urine	
D	Incontinent of urine and faeces	**D**	Incontinent of urine and faeces	
E	Not applicable	**E**	Not applicable	

TRANSFERS

A	Can get in/out of chair unaided	**A**	Able to get on and off a chair as before	Simplified language
B	Can get into a chair but needs help to get out	**B**	Able to get on a chair but needs help to get off it	
C	Needs help getting in and out of a chair	**C**	Needs help getting on and off chair	
D	Totally dependent on being put into and lifted from chair	**D**	Has to be lifted on and off a chair	
E	Not applicable	**E**	Not applicable	

MOBILITY

A	Walks independently	**A**	Walks as before	Ambiguous language
B	Walks with assistance, ie furniture, arm for support	**B**	Walks holding onto the wall or someone's arm	
C	Uses aids to mobilise, ie frame, sticks etc	**C**	Walks with a stick	
D	Unable to walk	**D**	Unable to walk	
E	Not applicable	**E**	Not applicable	

ORIENTATION-TIME

A	Fully orientated to time/day/date etc	**A**	Understands the time/day/date as before	Simplified language
B	Unaware of time/day etc but seems unconcerned	**B**	Unaware of time/day/date but is not worried about it	
C	Repeatedly asks the time/day/date	**C**	Repeatedly asks what the time/day/date is	
D	Mixes up night and day	**D**	Mixes up night and day	
E	Not applicable	**E**	Not applicable	

ORIENTATION-SPACE

A	Fully orientated to surroundings	**A**	Aware of surroundings as before	Houses very small, some have only one room with no formal bathroom.
B	Orientated to familiar surroundings only	**B**	Aware of familiar places only	
C	Gets lost in home, needs reminding where bathroom is etc	**C**	Gets lost in home, needs reminding where toilet is	
D	Does not recognise home as own and attempts to leave	**D**	Unable to recognise own home	
E	Not applicable	**E**	Not applicable	

COMMUNICATION

A	Able to hold appropriate conversation	**A**	Able to converse as before	For clarity, communication narrowed to act of talking
B	Shows understanding and attempts to respond verbally with gestures	**B**	Understands others and tries to talk back	
C	Can made self understood but difficulty understanding others	**C**	Unable to talk to others but can understand what is being said.	
D	Does not respond to or communicate with others	**D**	Does not talk	
E	Not applicable	**E**	Not applicable	

TELEPHONE

A	Uses telephone appropriately, including obtaining correct number	**A**	Uses telephone as before	Simplified for clarity
B	Uses telephone if number given verbally/visually or predialled	**B**	Uses telephone with help	
C	Answers telephone but does not make calls	**C**	Answers telephone but does not make calls	
D	Unable/unwilling to use telephone at all	**D**	Does not use the telephone	
E	Not applicable	**E**	Not applicable	

HOUSEWORK/GARDENING

A	Able to do housework/gardening to previous standard	**A**	Able to clean the house as before	Women traditionally do all housework and gardening. For clarity, meaning of housework is limited for these purposes to be cleaning the house
B	Able to do housework/gardening but not to previous standard	**B**	Cleans the house but misses some dirt	
C	Limited participation even with a lot of supervision	**C**	Needs help to clean the house	
D	Unwilling/unable to participate in previous activities	**D**	Does not clean the house	
E	Not applicable	**E**	Not applicable	

SHOPPING

A	Shops to previous standard	**A**	Able to shop as before	Ambiguous language, more than one variable in "B"
B	Only able to shop for 1 or2 items with or without a list	**B**	Only able to shop for a few goods at a time.	
C	Unable to shop alone, but participates when accompanied	**C**	Needs a person to help them shop	
D	Unable to participate in shopping even when accompanied	**D**	Unable to shop	
E	Not applicable	**E**	Not applicable	

FINANCES

A	Responsible for own finances at previous level	**A**	Manages finances as before and collects own pension	Cheque books not used, illiterate people unable to sign their name. Finger prints and making a mark is acceptable form of identification for collection of pension
B	Unable to wrote cheque but can sign name and recognises money values	**B**	Understands the value of money but needs help to collect pension	
C	Can sign name but unable to recognise money values	**C**	Does not understand the value of money and needs someone to help to collect pension	
D	Unable to sign name or recognise money values	**D**	Unable to collect pension or understand money values	
E	Not applicable	**E**	Not applicable	

GAMES/HOBBIES

A	Participates in pastimes/activities to previous standard	**A**	Lack of leisure time to participate in games or hobbies Could be a person who prefers being alone. Question left out
B	Participates but needs instruction/supervision	**B**	
C	Reluctant to join in, very slow, needs coaxing	**C**	
D	No longer willing to join in	**D**	
E	Not applicable	**E**	

TRANSPORT

A	Able to drive, cycle or use public transport independently	**A**	Poor public transport system, deemed unsafe for older people. Unlikely that anyone would have a drivers licence. Question left out
B	Unable to drive but uses public transport alone	**B**	
C	Unable to use public transport alone	**C**	
D	Unable/unwilling to use transport even when accompanied	**D**	
E	Not applicable	**E**	

Appendix 5. Instruments for first pilot study

SUBJECT NUMBER (.....) DATE (.....)
GAMA LOMNTU OBUZAYO *(NAME OF INTERVIEWER)*.....

IGAMA LOMNTU LOWO UMDALA *(NAME OF ELDERLY PERSON)*.....

.....

UMHLA WOKUZALWA *(DOB)*.....

UYEKE KWELIPHI IBANGA ESIKOLWENI*(LEVEL OF EDUCATION)*.....

IDILESI *(ADDRESS)* .....

..... (indlu yezitena,*brick house*) (lityo tyombe,*shack*)

ABANYE ABANTU ABAHLALA ENDLINI *(OTHER PEOPLE WHO LIVE IN THE HOUSE)*

Inani labantwana abanga phantsi kweshumi elinesithandathu *(number of children under 16 years)*( )

Inani labadala *(number of adults)* ( )

UNEXESHA ELINGAKANANI UHLALA EDOLOPHINI/ELOKISHINI*(HOW LONG HAVE YOU LIVED IN AN URBAN AREA?)*.....

INGABA KUKHO EZINYE IZINTO EZINXULUMENE NEZEMPILO EZICHAPHAZELA LOMNTU *(ARE THERE OTHER MEDICAL CONDITION S AFFECTING PERSON?)*

(Ewe,*Yes*) (Nayi,*No*) (circle the correct response)

Ukuba zikhona zichaze *(If yes state them)* .....

.....

IGAMA LOMNONOPHELI/ILUNGU LESAPHO *(NAME OF CARER/FAMILY MEMBER)*

.....UMHLA WOKUZALWA *(DATE OF BIRTH)* .....

UBUHLOBO NALO MNTU UMDALA *(RELATIONSHIP TO ELDERLY PERSON)*

.....

Activities of Daily Living scale

SUBJECT NUMBER ( )
Field worker is to circle the elderly person's response to the question.

IMIBUZO YOMNTU OMDALA

QUESTIONS FOR THE ELDERLY PERSON.

1. UCOCEKO. *(PERSONAL HYGIENE)*

Uyakwazi ukuhlamba umzimba wakho?
Are you able to wash your body

Ngokwakho — *By yourself*
Kukho umntu okuncedayo — *someone helps you*
Uhlanjwa ngomnye umntu — *someone washes you*

2. UKUNXIBA. *(DRESSING)*

Uyakwazi ukuzinxibisa?
Are you able to put your clothes on?

Ngokwakho — *By yourself*
Kukho umntu okuncedayo — *someone helps you*
Kukho umntu okunxibisayo — *someone dresses you*

3. UKUYA NGASESE *(TOILETTING)*

Uyakwazi ukuya ngasese?
Are you able to attend to your toilet needs

Ngokwakho — *By yourself*
Kukho umntu okuncedayo — *someone helps you*
Kukhona umntu okusulayo wakugqiba umcimbi wakho. — *someone attends to all your toilet needs*

4. UKUZITYISA *(FEEDING)*

Uyakwazi ukufaka ukutya emlonyeni wakho?
Are you able to put food in your mouth

Ngokwakho — *by yourself*
Uyancediswa — *someone helps you*
Uyatyiswa — *someone does it for you*

5. UKUJIKELEZA *(MOBILITY)*

Uyakwazi ukuzijikelezela?
Are you abletomove around?

Ngokwakho — *By your self*
Uyancediswa — *Someone helps you*
Uhleli ndawonye — *you are not able to move around*

6. UKULUNGISA UKUTYA *(FOOD PREPARATION)*

Ukwazi ukulungisa ukutya kwakho?
Are you able to prepare your food?

Ngokwakho — *By yourself*
Uyakwaziukuzilungiselela ukutya — *someone helps you*
Uyalungiselelwa — *someone prepares food for you*

7. UKUPHEKA *(COOKING)*

Uyakwazi ukukupheka ukutya kwakho?

Are you able to cook your food?

Ngokwakho	Uyancediswa ngo mnye umntu	uyaphekelwa ngomnye umntu
By yourself	*Someone helps you*	*someone cooks for you*

8. UKUYA KUTHENGA *(SHOPPING)*

Uyakwazi ukuthenga izinto ozifunayo?

Are you able to buy goods that you need?

Ngokwakho	uyancediswa ngomnye umntu	kukho umntu okuthengelayo
By yourself	*Someone helps you*	*someone shops for you.*

9. UKUCOCA INDLU *(HOME MAKING TASKS)*

Uyakwazi ukucoca indlu?

Are you able to clean the house?

Ngokwakho	Kukho umntu okuncedisayo	Kukho okucocelayo indlu yakho
By yourself	*someone helps you*	*someone cleans the house for you*

10. UKUHLAMBA IIMPAHLA. *(LAUNDRY)*

Impahla zakho uyazihlamba?

Are you able to wash your clothes?

Ngokwakho	Uyancediswa	Kukho umntu okuhlambela impahla
By yourself	*someone helps you*	*someone washes your clothes*

11. INKAM-NKAM *(PENSION)*

Uyazilandela inkam-nkam yakho?

Are you able to fetch your pension?

Ngokwakho	Kukho umntu okuncedisayo	kukho umntu okulandelayo inkam-nkam yakho
By yourself	*someone helps you*	*someone collects your pension* ***for you***

12. UKUPHATHA IMALI *(MONEY MANAGEMENT)*

Uyakwazi ukuyisebenzisa imali yakho?

Are you able to decide how to spend your money?

Ngokwakho	Uyancediswa	Ilawulwa ngomnye umntu imali yakho
By yourself	*someone helps you*	*someone manages your money for you*

13. UKUHLANGANA *(SOCIALISING)*

Uyakwazi ukuya kutyelela abahlobo/izihlobo?

Are you able to go out visiting friends or family?

Ngokwakho	Uyakhatshwa	Awutyeleli
By yourself	*someone helps you*	*you never go out*

14. AMAYEZA *(MEDICATION)*

Uyakwazi ukulungisa amayeza?

Are you able to organise your medication?

Ngokwakho kukho okuncedayo kukho umntu okulungiselela wona

By yourself *someone helps you* *someone organises it for you*

15. UKHUSELEKO *(SAFETY)*

Uyakwazi ukueshixa umnyango wendlu yakho?

Are you able to lock up your house

Ngokwakho Uyancediswa ukhunjuzwe Uyatshixelwa indlu ngumntu

By yourself *someone helps you* *someone does it for you*

ENKOSI NGOKUTHABATHA INXAXHEBA KULEMIBUZO

THANK YOU FOR YOUR PARTICIPATION

Informant–based Activities of Daily Living scale

SUBJECT NUMBER ( )
Field worker is to circle the relative's/carer's response to the question

IMIBUZO YOM NONOPHELI

QUESTIONS FOR THE RELATIVE OR CARER

1. UCOCEKO *(PERSONAL HYGIENE)*
Ingaba umntu omdala uyakwazi ukuzihlamba umzimba wakhe?
Is the elderly person able to wash her body?

Ngokwakhe Kukho umntu omncedayo Uhlanjwa ngomnye umntu
By herself *someone helps her* *someone washes her*

2. UKUNXIBA. *(DRESSING)*
Ingaba umntu omdala uyakwazi ukuzinxliba?
Is the elderly person able to put her clothes on ?

Ngokwakhe Kukho umntu omncedayo Kukho umntu omxibisayo
By herself *someone helps her* *someone dresses her*

3. UKUYA NGASESE *(TOILETTING)*
Ingaba umntu omdala uyakwazi ukuya ngasese?
Is the elderly person able to attend to toilet needs?

Ngokwakhe Kukho umntu omncedayo Kukho umntu omsulayo akugqiba umcimbi wakhe
By herself *someone helps her* *some one does it for her*

4. UKUZITYISA *(FEEDING)*
Ingaba umntu omdala uyakwazi ukufaka ukutya emlonyeni wakhe?
Is the elderly person able to put food in her mouth?

Ngokwakhe Kukho umntu omncedayo Kukho umntu omfakayo
By herself *someone helps her* *someone does it for her*

5. UKUJIKELEZA (*MOBILITY)*
Ingaba umntu omdala uyakwazi ukuzijikelezela?
Is the elderly person able to move around?
Ngokwakhe Kukho umntu omncedayo Akajekelezi konke konke
By herself *Someone helps her* *She is unable to move*

6. FOOD PREPARATION *(UKULUNGISA UKUTYA)*
Ingaba umntu omdala uyakwazi ukulungisa ukutya kwakhe?
Is the elderly person able to prepare her food?

Ngokwakhe Kukho umntu omncedayo Uyalungiselelwa
By herself *someone helps her* *someone prepares her food*

7. UKUPHEKA *(COOKING)*

Ingaba umntu omdala uyakwazi ukupheka ukutya kwakhe?

Is the elderly person able to cook her food?

Ngokwakhe	Kukho umntu omncedayo	Kukho umntu omphekelayo
By herself	*someone helps her*	*someone cooks for her*

8. UKUYA KUTHENGA *(SHOPPING)*

Ingaba umntu omdala uyakwazi ukuthenga izinto azifunayo

Is the elderly person able to buy goods that she needs

Ngokwakhe	Kukho umntu omncedayo	Kukho umntu omthengelayo
By herself	*someone helps her*	*someone shops for her*

9. UKUCOCA INDLU *(HOME MAKING TASKS)*

Ingaba umntu omdala uyakwazi ukucoca indlu.

Is the elderly person able to clean the house?

Ngokwakhe	Kukho umntu omncedayo	Kukho umntu omcocelayo indlu yakhe
By herself	*someone helps her*	*someone cleans the house for her*

10. UKUHLAMBA IMPAHLA *(LAUNDRY)*

Ingaba umntu omdala uyakwazi ukuhlamba impahla?

Is the elderly person able to wash her own clothes?

Ngokwakhe	Kukho umntu omncedayo	Kukho umntu omhlambelayo
By herself	*someone helps her*	*someone washes her clothes*

11. INKAM-NKAM *(PENSION)*

Ingaba umntu omdala uyazi lendela yakhe?

Is the elderly person able to fetch her own pension

Ngokwakhe	Kukho umntu omncedayo	kukho umntu omlendelayo inkam-nkam yake
By herself	*someone helps her*	*someone collects her pension*

12. UKUPHATHA IMALI *(MONEY MANAGEMENT)*

Ingaba umntu omdala uyakwazi ukuyisebenzisa imali yakhe?

Is the elderly person able to decide how to spend her own money?

Ngokwakhe	Kukho umntu omncedayo	Ilawulwa ngomnye umntu
By herself	*someone helps her*	*someone manages her money*

13. UKUHLANGANA *(SOCIALISING)*

Ingaba umntu omdala uyakwazi ukuyakutyelela izihlobo ?

Is the elderly person able to go out visiting friends or family

Ngokwakhe	Kukho umntu omncedayo	Akatyeleli
By herself	*someone helps her*	*she never goes out*

14. AMAYEZA *(MEDICATION)*

Ingaba umntu omdala uyakwazi ukuluingisa amayeza akhe

Is the elderly person able to organise her medicine?

Ngokwakhe Kukho umntu omncedayo Kukho umntu omlungiselelayo

By herself someone helps her someone does it for her

15. UKHUSELELEKO *(SAFETY)*

Ingaba umntu omdala uyakwazi ukutshixa indlu yakhe

Is the elderly person able to lock up her house

Ngokwakhe Kukho umntu omncedayo Kukho umntu omtshixelayo

By herself someone helps her someone does it for her

ENKOSI NGOKUTHABATHA INXAXHEBA KULEMIBUZO

THANK YOU FOR YOUR PARTICIPATION

SUBJECT NUMBER	Date.....

D.O.B.....

The 6 Item Cognitive Impairment Test (6CIT)

	Maximum error	**Score**	**weight**	**Weighted score**
What *year* is it now?	1		*4	=
What *month* is it now?	1		*3	=
Memory Phrase- repeat after me *Pumla / Zibi / E505 / Jabula Street / Khayelitsha*				
About what *time* is it now (within 1 hour)	1		*3	=
Count backwards 20 -1	2		*2	=
Say *months in reverse order*	2		*2	=
Repeat the *memory phrase*	5		*2	=

Score 1 for each incorrect response

TOTAL .....

Appendix 6. Introductory preamble and informed consent form, English version

A PRELIMINARY STUDY OF A CORRELATION BETWEEN SCORES ON A 6-ITEM COGNITIVE IMPAIRMENT TEST AND A MODIFIED BRISTOL ACTIVITIES OF DAILY LIVING SCALE OBTAINED FROM OLDER WOMEN IN KHAYELITSHA.

My name is..... I am from the NOAH project in Z section. I am assisting a researcher from the University of Cape Town. We are carrying out a project on the health of older people in Khayelitsha.
If there is an older person in this house I would like to explain this to her and her carer and get permission to ask both of them, separately, some questions.

If there is an older person in the house address the person as follows.

My name is..... I am from the NOAH project in Z section. I am assisting a researcher from the University of Cape Town. We are carrying out a project on the health of older people in Khayelitsha.
Your information will be of help to us in this research project.

I would like to ask you some questions about every day things that you might know. I would also like to ask the person who cares for you when you are in need, questions about everyday things that you might do.

I would like to assure you that any thing that you tell me will be kept in strict confidence and will not be divulged to any other person. Your name, your carers name or address will not be linked to the information that you give me. Only the researchers will work with the information.

First I would like you to sign an Informed Consent Form, after I have fully explained the contents to you.

Finally, thank you for your participation in the study.

INFORMED CONSENT FORM – ENGLISH VERSION

I, the undersigned, voluntarily agree to participate in the study on older women being conducted by Kathleen Brodrick, O.T., employed by the NOAH Project.

1. I have been fully informed of the purpose and nature of the study, what is expected of me through my participation in this study, as well as the implications resulting from the under-mentioned procedure.

2. The procedure to be undertaken is as follows: An interviewer will ask my carer questions about things that I do everyday. The interviewer will then ask me six questions.

3. I understand that I am free to withdraw from participation in the interview at any time, without prejudice to me or anyone in my household.

4. I understand that all the information divulged by me will be kept in strict confidence and will only be used for research purposes. The information for all the older people studied will be combined, and my name or the names of the members of this household will not be linked to the information. Only the researchers will study the information. No information will be divulged to a third party, e.g. the government, health clinics, churches, or any organisation or agency.

5. I understand that by signing this form I do not forego my rights to any entitlement, such as my right to receive a social pension, health care, etc.

SUBJECT NUMBER .....

Name of older person: .....

Address: .....

Telephone Number: .....

Signed on the.....day of.....2000

....

Study respondent. Interviewer.

Please note:if you have any concerns about your rights as a participant in this study, you may contact Professor Dent, the head of the research Ethics Committee of the University of Cape Town, at tel (021) 406-6492, or the Project Leader, Mrs Kathleen Brodrick at tel (021) 361-3320.

Introductory preamble and informed consent form,

Xhosa version

A PRELIMINARY STUDY OF A CORRELATION BETWEEN SCORES ON A 6-ITEM COGNITIVE IMPAIRMENT TEST AND A MODIFIED BRISTOL ACTIVITIES OF DAILY LIVING SCALE OBTAINED FROM OLDER WOMEN IN KHAYELITSHA.

Igama lam ngu.....Ndisuka kwa –NOAH Project ko Z.
Ndincedisa umphandi wase- University yase Kapa. Sikwi project ejongene nempilo yabantu abadala base Khayelitsha.
Ukuba kukho umntu omdala kulendlu ndingathanda ukucacisa oku kuye naku mntu omlandolozayo kwaye ndifumane imvume kubo, ngokwahlukeneyo, ndibabuze imibuzo.

Ukuba kukho umntu omdala kulo ndlu thetha naye ngoluhlobo lulandelayo.

Igama lam ngu.....Ndisuka kwa –NOAH Project ko Z.
Ndincedisa umphandi wase- University yase Kapa. Sikwi project ejongene nempilo yabantu abadala base Khayelitsha.
Inkcazelo esinokuyifumana iyakusinceda kule- project yophando.
Ndinqwenela ukukubuza imibuzo malunga nezinto eziqhubekayo imihla ngemihla ongathi uzazi. Ndikwanqwenela ukubuza ngubani okunonopheleyo xa kukho imfuneko, imibuzo ngezinto zemihla ngemihla ongathi uzenze.

Ndinqwenela ukukuqinisekisa ukuba nantoni othe wayithetha iyakugcinwa iyimfihlelo kwaye ayisayi kuxelwa nakubani.
Igama lakho, igama lomnonopheli okanye idilezi ayisayi kudityaniswa nolu lwazi ulunikezileyo kum. Kuphela umphandi uyakuthi asebenzisa ulwazi kuphela.

Kuqala ndinqwenela ukuba usayine le fomu, emva kokuba ndicacise ngokupheleyo kuwe okuqulathwa yiyo

Okokugqibela, enkosi ngentsebenziswano yakho koluphando.

CONTENTS OF THE CONSENT FORM – XHOSA VERSION

Mna, ndityikitye apha phantsi,ndiyavuma ukuthatha inxaxeba kuphando malunga nabantu abadala. Uphando olu luphethiwe ngu Kathleen Brodrick, O.T. oqeshewe ngu NOAH Project.

1. Ndichazelwe ngokupheleleyo ngeenkcukacha, nesizathu zoluphando. Ndiyayazi into endiyilindeleyo neziqhamo ezizakuphuma apha, ngalenkcazelo ingezantsi.

2 Indlela yophando izakuhamba kanje: Umphandi uzakubuza imibuzo, kubantu endihlala nabo endlini nezinto endihlala ndisenza zona imihla ngemihla. Umphandi uya kundibuza imibuzo emithandathu.

3. Ndiya qonda ukuba ndivumelekile ukuyeka ukuthatha inxaxeba nanini, nanini koluphando, kodwa lento ayinakuphazamisa mna, okanye abantu bendihlala nabo endlini.

4. Ndiyaqonda yonke inkcukacha eniyifumanayo kum izokuba semfihlakalweni. Iza kusetyenziswa kuphando lodwa qha. Inkcukacha zasendlini ezifunwayo, zizaku dityaniswa. Igama lam, okanye amagama abantu endihlala nabo endlini ngeke anxulunya-niswe kwezi nkcukacha. Ngabaphandi bodwa abaza kufunda ezinkcukacha. Akukho nkcukacha ezochazelwa abanye abantu mzekelo: ugovernment, ekliniki, ecaweni okanye ezinye indwao ezinceda abantu.

5. Ndiyaqonda ukuba ukusayina kwam le fomo, akuzuku chaphazela amalungelo am anjengamalumgelo am okufumana inkam-nkam namalungelo empilo yam, njalo-njalo.

Igama lomntu omdala: .....

Idilesi: .....

Inombolo yefoni .....

Igama lomntu obuzwayo .....

Umchazi nkcukacha .....

Nceda, qaphela: xa une nkathalo nga malungelo akho njengo mfundwa koluphando, unga dibana no Professor Dent, intloko ye komiti ye Research Ethics ejunivesiti yesekapa kunombolo yefounu, (021) 406-6492, okanye umkhokheli koluphando, Mrs Kathleen Brodrick kunombolo yefounu (021) 361-3320