

Urbanization and lifestyle changes related to non-communicable diseases: An exploration of experiences of urban residents who have relocated from the rural areas to Khayelitsha, an urban township in Cape Town

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## **Keywords**

**Lifestyle** refers to the way a person (or a group) lives. This includes patterns of social relations, food consumption, behaviours, and interests. A lifestyle typically also reflects an individual's attitudes and one's interaction with the world.

**Urbanization:** The increase in the proportion of a population living in urban areas and the process by which an area loses its rural character and way of life. Urbanization is a consequence mainly of rural-urban migration (A Dictionary of World History, 2000).

**Migrants:** A person who moves from one place to another so as to find work (The Concise Oxford English Dictionary, 2006).

**Physical Activity:** Any form of body movement that has a significant metabolic demand. Thus, physical activities include training for and participation in athletic competitions, the performance of strenuous occupations, doing household chores, and non-sporting leisure activities that involve physical effort (The Oxford Dictionary of Sports Science & Medicine, 2006).

**Diet:** Pattern of eating. The quality, quantity, and times of the day a person eats. (The Oxford Dictionary of Sports Science & Medicine, 2007).

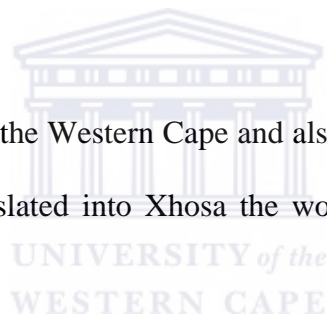
**Obesity:** Obesity can be described as an imbalance between energy input (derived from food consumed) and energy output (energy used by the body to perform normal tasks) as a result, excess energy is then stored in fat cells, which expand or increase in numbers (Goedecke, Jennings & Lambert, 2005).

**Non-communicable diseases:** These are diseases that cannot be passed onto others these include diseases such as cancer, diabetes, hypertension and arthritis. In this study non-communicable diseases will mainly refer to hypertension and diabetes.

**Rural areas:** this is a place where inhabitants are active in agricultural activities; such places are remote and away from cities

**Urban areas:** also known as the city is characterized by large population size. Urban areas have infrastructure such as an industrial base transportation, health facilities, and proper roads.

**Khayelitsha** is a township in the Western Cape and also one of the biggest townships in South Africa. When translated into Xhosa the word Khayelitsha means ‘a new home’



## ABSTRACT

### URBANIZATION AND LIFESTYLE CHANGES RELATED TO NON-COMMUNICABLE DISEASES: AN EXPLORATION OF EXPERIENCES OF URBAN RESIDENTS WHO HAVE RELOCATED FROM THE RURAL AREAS TO KHAYELITSHA, AN URBAN TOWNSHIP IN CAPE TOWN

MPH minithesis, Department of School of Public Health, University of the Western Cape.

**Background:** The prevalence of non-communicable diseases such as hypertension and diabetes including obesity has increased among the black population over the past few years. The increase in these diseases has been associated with increased urbanization and lifestyle changes. No studies have documented the experiences of people who have migrated to urban areas. **Aim:** To describe the type of lifestyle changes, reasons for the lifestyle changes and the barriers to adopting a healthy lifestyle among people who have migrated from rural areas to urban areas in the past 5 years and reside in Khayelitsha. **Objectives:** (1) To identify people who have moved from rural to urban areas in the past 2-5 years; (2) To explore reasons for moving to the city; (3) To explore experiences of respondents on moving to the city; (4) To identify the types of lifestyle changes related to chronic diseases among respondents on arrival to the city; (5) To identify reasons for the lifestyle changes among respondents; (6) To identify coping strategies that have been adopted by respondents; (7) To identify barriers to healthy lifestyle among respondents; (8) To make recommendations for development of appropriate interventions that will enable migrating populations to adjust better to city life. **Methods:** A descriptive qualitative

study was used to uncover the nature of respondents' experiences. The study population was men and women from Khayelitsha who have relocated from the rural areas and have been residing in urban areas for 5 years and less. In-depth interviews were carried out with participants aged 35-64 years. Interviews were recorded on an audio tape recorder. Content analysis was done to identify themes and patterns that emerged. The main themes were summarized and illustrated with quotes. **Findings:** Rural-urban migration (urbanization) was associated with factors such as seeking employment, better life and working opportunities. On arrival in the city migrants face a number of challenges such as inability to secure employment and accommodation. Faced with these challenges, migrants change their lifestyle including buying fatty foods, increasing frequency in food consumption and decreasing in physical activity. In the city factors such as poverty, environment including lack of infrastructure, and lack of knowledge about nutrition, social pressures and family preferences were identified as hindrances to a healthy lifestyle. **Conclusion:** This study identified various factors that influence the decision to migrate from rural areas. Lifestyle changes in an urban setting are due to socio-economic, environmental and individual factors. Perceived benefits of moving to urban areas can pose challenges to health and this may have negative health-outcomes.

**Declaration:**

I declare that URBANIZATION AND LIFESTYLE CHANGES RELATED TO NON-COMMUNICABLE DISEASES: AN EXPLORATION OF EXPERIENCES OF URBAN RESIDENTS WHO HAVE RELOCATED FROM THE RURAL AREAS TO KHAYELITSHA, AN URBAN TOWNSHIP IN CAPE TOWN is my own work, that it has not been submitted before any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.



Lungiswa Primrose Tsolekile

May 2007

Signed: .....

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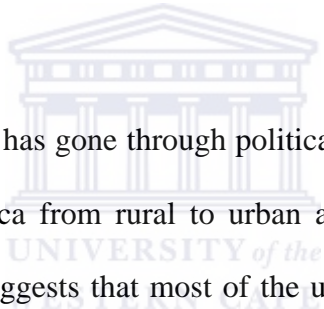
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## Chapter 1: Introduction

Over the past few years there has been an increase in the number in the black population moving from rural to urban settings. This movement has been influenced by the perception that urban settings have better opportunities. On arrival in the city many immigrants find themselves faced with a harsh environment where survival is of paramount importance. Lack of integration into the economy of the city forces people to adopt alternative ways of living and in most instances they change their lifestyles which put them at risk of developing non-communicable diseases (NCDs). These changes have been found to have negative health outcomes such as obesity, diabetes mellitus, hypertension, cardiovascular diseases and certain types of cancers (Popkin, 1998; Vorster et al., 2000).



South Africa is a country that has gone through political transition. The migration of black Africans in South Africa from rural to urban areas dates back to the 1910s (Smit, 1998). Smit (1998) suggests that most of the urbanization in South Africa is related to the growth of the mining industry.

During the apartheid era, the movements of the black population were restricted through influx control legislation that prohibited this population from settling permanently in urban areas. There were other legislations such as the Group Areas Act that were put in place to further restrict movements of the black population. This segregation was enforced by laws such as the Native Land Act of 1913 which designated 13% of available land as the only areas where the black population could purchase and reside in. About 3.5 million people were forcibly moved by the state from 1960-1982 and 700 000 more people were removed from urban areas which

were declared as 'white' (Marais, 1998). The creation of 'Bantustans' or 'Homelands' served as a tool for controlling the influx of black people into cities. In order to strengthen the segregation the government introduced a Pass Law which restricted the movements of the black population to urban areas. In the post apartheid era the laws that restricted the movement of the black population were abolished resulting in an influx of people to urban areas. In 1996 it was estimated that more than 60% of the population lived in the urban areas (Statistics South Africa, 1999). This urban migration has been accelerated by the economic differences between urban and rural.

In the early 1980's the Western Cape experienced a housing crisis, due to the influx of black people from the 'Homelands'. The situation was aggravated by the discontinuation in the construction of new houses in the township of Langa, Nyanga and Gugulethu. Between 1967 and 1975 there was a quarter of a million Pass arrests in the Western Cape (*A pass (permit) also known as 'dompass' was a document that was carried by blacks at all times during the Apartheid era. This was a requirement for blacks over the age of 15 who were residing in urban areas and those who were found without this document were arrested and deported to 'homelands'*). In 1980, about 16 327 'illegal' residents were arrested and by 1981 the number of arrests dropped but 3000 people were deported to the 'homelands', during this period private-ownership housing for families was prohibited (West, 1982).

In 1983 an announcement was made that black people who were illegal residents in the Metropolitan Cape Town would be housed in Khayelitsha an area that is 39km away from the metropole. This township was planned to accommodate a quarter of a

million black residents (Cook, 1986). At the time of the announcement of Khayelitsha, Cape Town was already a home to 206 482 black residents and 23 083 of these residents were migrant workers. The existing townships could only house half of these workers in the hostels that were built for migrant workers. During this period there were an additional of 76 000 'illegal' residents who lived in the Western Cape and were therefore not entitled to any housing in terms of the influx control regulations. By then an estimated 15 000 shacks had been erected in the backyards of township houses (South African Institute of Race Relations, 1984). The decision to stop the building in existing townships came as part of the Khayelitsha Proposal (Cook, 1986).

In 1983 corrugated aluminium huts were built in Khayelitsha which were erected to house the people from the squatter camps. The construction of 'core' housing started later in 1983 and the Government introduced a 99-year leasehold. This process was completed in 1985 and 1740 'legal' families moved to the township. Site C, which was a serviced site, was opened to 'illegal' residents for the construction of shacks in 1984 and by 1985 black people were no longer forced to move from where they previously resided (Cook, 1986).

Khayelitsha was constructed in an area that was designated a Coloured Labour Preference Area in 1966 (Smith and Boysen, 1977). It is situated on dune land, with low lying areas subject to seasonal flooding (Cook, 1986). This area is bordered by the N2 Highway (north), False Bay Coast (south) and Mitchell's Plain (west). A large percentage of the population living in the informal settlements of Khayelitsha have moved from rural areas of the Eastern Cape.

Non-communicable diseases (NCDs) are a major health problem in industrialised countries and are increasing rapidly in the developing countries due to the demographic transition and changing lifestyles among people (Nissenen, Berrios & Puska, 2001). There is a rapid increase in the burden of NCDs worldwide. In 2001 NCDs contributed to 60% of the 56.5 million deaths in the world and 46% to the global burden of disease (WHO, 2002). The World Health Organization (2002) (WHO) predicts that by 2020 two-thirds of the world's global burden of disease will be attributable to non-communicable conditions. Previously NCDs such as hypertension, diabetes and ischaemic heart diseases were thought to be diseases of affluent countries (Popkin, 1998), but currently they are more prevalent in developing countries where poverty is rife.

The mortality profile of South Africa for 2000 showed that 21% of deaths were due to communicable diseases, 37% were due to NCDs, 12% were due to injuries and 30% were due to HIV/AIDS (Bradshaw et al., 2003). Data from the 9 provinces in South Africa indicated that NCDs were a significant cause of mortality (Bradshaw et al., 2004). This clearly illustrates that NCDs are affecting people across the different races and from different socio-economic background.

It has been documented that urbanization is associated with lifestyle changes leading to the emergence of NCDs including obesity. Lacking are studies which document the experiences of people who have moved from the rural areas on arrival to urban areas. This study will therefore explore the experiences of this population including lifestyle changes that have occurred, the reasons for these changes, and barriers to

sustain a healthy lifestyle. The information obtained will be used to develop appropriate interventions to enable migrating populations to adjust better to city life.



## Chapter 2: Literature Review

### 2.1 Urbanization and the emergence of non-communicable diseases

South Africa is a country with a diverse population but the black population is in the majority and is currently estimated at 79.5% (Statistics South Africa, 2006). Over the years migration from rural to urban areas has increased significantly. The urban population increased from 1996-2001 from 53.7 % to 57.5% respectively (Statistics South Africa, 2003).

Popkin (1999) suggested that urbanization is one of the important components which can help us better understand lifestyle changes. Urbanization is an important factor in the aetiology of obesity, and a major risk factor for NCDs. It accelerates the changes in diet, physical inactivity and increases access to tobacco products and high fat foods which are all risk factors of NCDs (Vorster et al., 2000). Diet and physical inactivity are modifiable risk factors associated with changes in lifestyle.

Diets of the African population tend to differ between rural and urban dwellers. Studies have shown that rural dwellers diets are low in fat and sugar but high in carbohydrates and fibre (Steyn et al., 2001), while their urban counterparts show high fat and low fibre and carbohydrate intake (Bourne et al., 2002) which is typical of a Western diet.

Popkin (1999) suggests that the shift from an agricultural economy to industrialization is one of the major economic changes that are associated with nutrition transition. Globally lifestyles are increasingly becoming sedentary due to a shift from energy expenditure-intensive to automated occupations, and changes in transportation (Bell,

Ge & Popkin, 2002). Evidence shows that physical activity plays a protective role against NCDs (Sparling et al., 1994; Levitt et al., 1999; Kruger et al., 2002). Urbanization brings about shifts in physical activity patterns.

## **2.2 Factors associated with urbanization**

Rural-urban movements of the black population date back to the beginning of the mining industry. In South Africa migration is usually from rural to urban areas. Todaro (1982) suggested that migration is influenced by ‘push’ factors, pull factors’ and ‘pushback’ factors.

### **2.2.1 Push factors**

The poverty that has emanated in rural areas due to lack of agricultural activities has resulted in people migrating. This case of migration is not a matter of choice but rather essential for the survival of many households (Mears, 1997). Lack of infrastructure and facilities has resulted in people moving in order to seek better services in urban areas.

### **2.2.2 Pull factors**

Throughout the years the most common reason for migration from rural areas was to seek employment. Mears (1997) maintains that the urban sector offers significantly higher wages than the rural sector. This difference in wage rate from subsistence to the industrial sector has influenced the movements of the population. The decision to migrate can be an investment decision, as people may be motivated by the desire to maximize the real net income during economic years (Sjaastad, 1962).



### **2.2.3 Pushback Factors**

Currently the unemployment rate in South Africa is very high. de Swardt et al. (2005) suggested that in Khayelitsha there were more than 40% people who were unemployed. Developments in the agricultural sector can motivate migrants to return to rural areas due to high unemployment rates in the urban areas (Smit, 1998).

## **2.3 Determinants of Non-communicable diseases**

### **2.3.1 Nutrition transition**

South Africa is a developing country undergoing transition. Rapid urbanization has brought about changes in nutrition. Nutrition transition is characterized by changes in dietary patterns and nutrient intake. These changes are influenced by social, cultural and economic changes during the demographic transition (Drewnoski and Popkin, 1997; Walker & Segal, 1997). It has often been reported that the migrating populations tend to abandon traditional diets when exposed to the urban environment and pursue a Western diet which is characterized by a decrease in carbohydrates and an increase in fat (Popkin, 1999; Bourne, 2002).

Demographic and economic changes are constantly taking place and these play a role in dietary changes (Popkin, 1998). In a comparison of rural and urban diets Popkin (1998) found that urban dwellers consume superior grains, more milled and polished grains, food with higher fat content, more animal products, more sugar and food either processed or prepared away from home. Others reported that new arrivals often have time to prepare low-cost maize and legume based dishes which have long preparation times, while established city dwellers consumed food that was high in fat and easy to prepare (Bourne, Lambert & Steyn, 2002).

### **2.3.2 Exposure to obesogenic environment**

Urbanization in developing countries may influence food availability and choices (Mendez & Popkin, 2004). In developing countries such as South Africa, urbanization has resulted in changes in the socio-cultural environment such as mass media marketing and availability of less traditional foods, these factors play a role in influencing taste and preference (Chopra, Galbraith & Darnton-Hill, 2002; Lang, 1999; Evans et al., 2001). In the context of poor settings in South Africa, the availability of fatty snacks such as ‘vetkoeks’ (equivalent to doughnuts) through street vendors and limited selection of healthy foods in local shops, were found to predispose the inhabitants to obesity (Puoane, Bradley & Hughes, 2005). In South Africa obesity has become a public health concern as it is one of the main predisposing factors for NCDs.

Globalization has played in creating an obesogenic environment especially in developing countries. It has introduced impoverished population to western diets that are high in animal fat and low in complex carbohydrates (Mollentze et al., 1993). Such diets predispose urbanized populations to NCDs such obesity, diabetes and hypertension.

### **2.3.3 The epidemiologic transition**

South Africa, like many developing countries, is currently undergoing epidemiologic transition, a process defined as:

..the evolutionary changes in different societal settings from a situation of high mortality, high fertility, short life expectancy, young age structure, and predominance of communicable diseases; especially in the young, to one of low mortality, low fertility, increasing life expectancy, aging and predominance of

degenerative and man-made diseases, especially among middle and old ages.. (Omran, 1996: 5).

Omran (1971) described the epidemiologic transition as a phenomenon consisting of three periods:

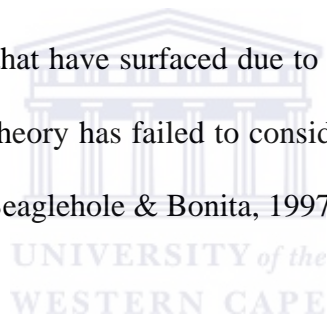
- a) The era of pestilence and famine;
- b) The era of receding pandemics; and
- c) The era of degenerative diseases and man-made diseases.

These periods as described by Omran (1971) mainly occurred in the western countries during the eighteenth century and early twentieth century. Beaglehole and Bonita (1997) suggested that these periods overlap and the progression is neither linear nor are mortality declines due to improvements in morbidity and disability. A fourth stage in the epidemiologic transition was proposed in an effort to explain the resurgence of old infectious diseases and the emergence of new infectious diseases in combination with NCDs (Olshansky & Ault, 1986; Rogers & Hackenberg, 1987). Rogers and Hackenberg, (1987) suggested that in the fourth stage the patterns of mortality and morbidity are largely due to individual lifestyle. Beaglehole and Bonita (1997) argued that this interpretation undermines the influences of social and economic determinants of epidemics, and exaggerates the role of individual determinants of disease.

Although the epidemiologic transition framework is the basis or attempts to explain the mortality and morbidity pattern, it varies as not all countries experience it in the same way. Waters (2006) suggested that transformation is not uniform and it transpires at different times among and within different societies and at different velocities. Waters further explains that patterns of morbidity and mortality differ among socioeconomic groups due to differences in their relationship to globalizing

forces. The City of Cape Town's mortality data illustrates this situation well because the mortality rates differ in the various districts and within districts. Areas such as Khayelitsha are experiencing a quadruple burden of disease, where communicable diseases, NCDs, injuries and HIV/AIDS are occurring at the same time. Waters (2006) suggests that the path taken by the epidemiological transition is related to social, economic, political, cultural systems and processes that are influenced and redefined by globalization.

Beaglehole and Bonita (1997) agree that the epidemiologic transition framework is best for describing patterns of mortality but it offers no explanation on the differences in death rates between countries and furthermore it has limited ability to predict changing patterns of disease that have surfaced due to modernization. They feel that the epidemiologic transition theory has failed to consider violent deaths due to either intentional or unintentional (Beaglehole & Bonita, 1997).

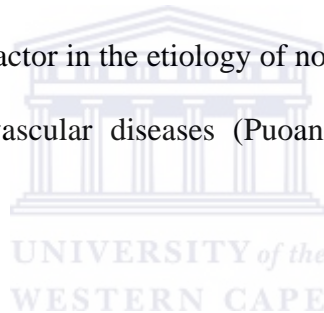


#### **2.3.4 Globalization in the emergence of NCDs**

Globalization is one of the terms currently used to describe the links and inter-connections that exist between different countries and their economies. Yach and Bettcher (1998) describe this phenomenon as one that links individuals and the global context of development. Globalization has brought about both improvements and risks to health. For example, tobacco and alcohol trade increases the availability and use of such products which have a negative impact on health especially in developing countries (Yach & Bettcher, 1998). However, globalization has also created opportunities that can have a positive impact on health. These include accessibility to

modern information technologies such as telemedicine, interactive health networks and human resource development, which are all beneficial to health (WHO, 1997).

During the apartheid era South Africa was excluded from the global economy. This was due to the sanctions that were put in place by the global community. Thus multinational companies were prohibited from investing or even having links with South Africa. Many multi-national companies invested in South Africa after Apartheid was abolished. This surge of multi-national companies, especially fast food chains introduced 'western foods' that are high in fat and refined carbohydrates. The prices of such food have been low and more accessible to low income earners, thus becoming a health threat to the poor people. It has been well documented that fast foods are a contributing factor in the etiology of non-communicable diseases such as hypertension and cardiovascular diseases (Puoane, Bradley & Hughes, 2005; Haddad, 2003).



## **2.4 Consequences of Urbanization**

Urbanization has adverse effects on social networks and health. An increased prevalence of diabetes, hypertension and obesity has major public health implications.

### **2.4.1 Isolation and breaking of family structures**

During the apartheid era, African men held jobs in the urban areas but due to the restrictions that prevented Africans from being permanent residents in urban areas (Mears, 1997), women were left to fend for the children in rural homes. There was constant movement to and from urban areas with the rural home being the base (Smit, 1998). However, there are other studies that showed different trends such as a study

in Kenya which reported that successful migrant workers were increasingly cutting their links with rural areas (Francis and Hodinott, 1993).

#### **2.4.2 Increase in the prevalence of hypertension and diabetes**

Hypertension is a common condition in South Africa and is more prevalent in urban Africans. In the Transition and Health during Urbanization of South Africans (THUSA) study that was aimed at investigating the association between blood pressure and factors known to contribute to hypertension, it was found that age and urbanization had the highest association with systolic blood pressure (van Rooyen et al., 2000). Steyn et al. (1996) found that the duration of urbanization was an independent predictor of the presence of hypertension in the black community of Cape Town. However research conducted by Mollentze et al. (1995) yielded different results which showed no significant differences in the prevalence rate of hypertension between rural and urban setting in the Free State province.

There are dietary factors that are related to hypertension such as increased salt intake which is common in South Africa especially in poor settings. Self-reported data from the South African Demographic Health Survey (SADHS) showed a hypertension prevalence of 5.8% and 17.4% among African men and women respectively. The prevalence of hypertension was lower among African urban population as compared to their non-urban counterparts (SADHS, 1998).

South African mortality data shows an increase in the number of deaths due to diabetes among the different ethnic groups especially the black population where the number of deaths due to diabetes doubled from 1985 to 2000 (Bradshaw et al., 1995;

2004; 2003). The SADHS (1998) showed a self reported diabetes prevalence of 2.4% and 3.7% among males and females respectively. The prevalence of diabetes was higher in urban men and women as compared to non-urban Africans (Steyn et al., 2001).

### **2.4.3 Obesity**

Obesity is defined as a body mass index (BMI) greater than 30 (Poston & Foreyt, 1999), and is described as an imbalance between energy expenditure and intake (Goedecke, Jennings & Lambert, 2005). Obesity is a major risk factor for NCDs including type II diabetes, stroke, hypertension and certain types of cancers (WHO, 2000). The prevalence of obesity amongst South African population has increased over the past few years. The SADHS of 1998 reported a prevalence of 29% and 56% in men and women respectively. White men and African women had the highest prevalence of obesity. Urban women had a higher BMI compared to their rural counterparts. In the same survey, central obesity was found in 42.2% of women and 9.2% of men. The prevalence of central obesity was high in urban African women and those of mixed-ancestry as well as in white men while African men were more pear-shaped (Puoane et. al, 2002). Central obesity is associated with increased risk of heart disease, diabetes mellitus, hypertension and insulin resistance. Obesity is one of the major risk factors affecting populations in both the developed and developing countries.

Some studies have reported that obesity among African women was associated with being affluent, attractive and healthy (Mvo, Dick & Steyn., 1999; Puoane et al., 2005), and although they were aware of the consequences of being overweight,

women preferred to be overweight due to perceptions that losing weight is associated with HIV (Puoane and Hughes, 2005).

## **2.5 Successful Intervention programmes for non-communicable diseases**

In South Africa the health system focuses mainly on the individual and on curative interventions. NCDs are prevalent in all ethnic groups and therefore interventions aimed at the prevention of such diseases should be population based.

Currently there are successful interventions that have been implemented to deal with NCDs. The North Karelia Project is an example of such interventions. This was one of the first community based programmes for cardiovascular diseases and was based on low-cost lifestyle modification and community participation (Puska et. al, 1998; Tian et al., 1995). The Mirame Project in Chile was established in the late 1980s and it was aimed at reducing the prevalence of cardiovascular diseases. This programme was aimed children as cardiovascular diseases already presented in early life. A programme was designed to evaluate strategies to promote healthy lifestyles in school children and their families based on the principles of social learning theory (Nissinen, Berrios & Puska, 2001). After 3 years of intervention there was a significant positive impact on alcohol consumption and smoking in the intervention school. There was a net change of 8%-11% in favour of the intervention and currently the programme covers 30 000 school children in Chile.

In South Africa there are a few interventions aimed at the prevention of non-communicable diseases. A community-based intervention in Khayelitsha (Cape Town) was developed to implement the WHO global strategy for the prevention of



NCDs. Community health workers were trained to be agents of change. One of the outcomes of this intervention is the formation of a health club. The health club's main focus is physical activity and nutrition (Puoane Bradley & Hughes, 2006). Other programmes include the Community Health Intervention Programmes (CHIPs), a programme that was introduced to disadvantage communities in the Western Cape. This programme was formed in response to the growing prevalence burden of NCDs and it was aimed at promoting health through regular physical activity. CHIPs has been sustainable and since its inception in 1997 the project has opened over 40 branches, trained more than 300 leaders and impacted on 8685 individuals' lives (Sports science institute, 2007) .

We can learn from successful interventions aimed at reducing the prevalence of NCDs. The WHO CINDI (Countrywide Integrated Non-communicable Disease Intervention) Programme is an example of a programme that can be used to assist migrants in the city. This programme focuses its action on the reduction of levels of major non-communicable diseases, through modification of four lifestyle-related factors namely: tobacco, diet, physical activity, and alcohol. This programme is guided by four major strategies: policy development, capacity building, surveillance, dissemination of information and experience. All of these strategies are related to the improved functioning of the socio-economic environment by focusing on major social determinants of NCD: poverty, lack of educational opportunities, unemployment and social inequality (WHO, 2004). However, intervention programmes that are aimed at assisting migrants with skills to cope in urban settings are lacking in developing countries.

## **Chapter 3: Research Design and Methodology**

This chapter discusses the methods used to collect and analyze data for this study.

### **3.1 Aim**

To describe the type of lifestyle changes, reasons for the lifestyle changes and the barriers to adopting a healthy lifestyle among people who have migrated from rural areas to urban areas in the past 5 years and reside in Khayelitsha.

### **3.2 Objectives**

- To identify people who have moved from rural to urban areas in the past 2-5 years
- To explore reasons for moving to the city
- To explore experiences of respondents on moving to the city
- To identify the types of lifestyle changes related to non-communicable diseases among respondents on arrival to the city
- To identify reasons for the lifestyle changes among respondents
- To identify coping strategies that have been adopted by respondents
- To identify barriers to healthy lifestyle among respondents
- To make recommendations for development of appropriate interventions that will enable migrating populations to adjust better to city life

### **3.3 Methods**

#### **3.3.1 Study Setting**

The study was undertaken in Khayelitsha, the largest black township in Cape Town which has predominantly informal settlements (57.4%). In Census 2001 the

population of Khayelitsha was estimated to be 329 002, but others have estimated the population to be 1 million (Lawson, 2005). There is a higher percentage of females (51.9) compared to males (48.1). Khayelitsha has a relatively young population with 75% of the population under the age of 35. Fifty one percent of the economically active population is unemployed and more female than male are unemployed. The rate of unemployment increased by 10.6% from 1996-2001. The majority of households (72%) earn less than R1600 per month, and 69.3% of households consist of 4 people or less (Information and knowledge management Department, 2005)

### **3.3.2 Study Design**

In this study a descriptive qualitative study design was used. A qualitative study was appropriate as the research was undertaken to gain a deeper understanding of the issue under investigation (Strauss & Corbin, 1990).

### **3.3.3 Study population and sample**

The study population was men and women from Khayelitsha who have moved from the rural areas and have been residing in urban areas for 2 -5 years. Lifetime exposure to urban environment is associated with body mass index, diabetes and hypertension and it has been shown that city dwellers who have 2 years exposure to urban environment were more likely to have higher blood pressure compared to rural dwellers (Sobngwi et al., 2004). There were two respondents who had moved less than two years ago. These respondents were included as they had previously lived in the in urban areas for more than two. Recent migrants are more likely to remember the changes than those who relocated more than 5 years ago.

The intention was to draw respondents from the Community Survey conducted in 2005. Although seven possible respondents were drawn from the survey, only one could be located and five no longer resided in the area while one had moved back to the rural areas. This meant that additional respondents who fitted the study criteria had to be recruited from the community. Purposive sampling was used to select men and women aged 35-65 years. People who had hypertension and diabetes were also eligible to participate in the study. Purposive sampling was preferred as it focused on selecting information-rich cases. Purposive sampling reduces bias as it offers the researchers some degree of control. In purposive sampling the outliers are included deliberately (Barbour, 2001). People who have lived in the city for more than 5 years were excluded from participating. The younger age-groups were excluded on the assumption that they have different challenges than the adult population

Community health workers recruited individuals who fitted the selection criteria, around areas where they were working and scheduled appointments (i.e. venue and suitable time) for the interviews.

### **3.3.4 Data collection**

Data was collected through in-depth interviews. This method of data collection enabled respondents to give their views without feeling overwhelmed by group dynamics as is the case in focus group discussions. In-depth interviews were conducted using a semi structured questionnaire, which was in English and translated to the local language, IsiXhosa. This means that the interviews were conducted on the basis of a loose structure consisting of open ended questions that defined the area to be explored (Britten, 1995), but in order to ensure that all the issues were covered an

interview guide was utilized (See Appendix 2). The interviews took place at two venues in the community, that is, at the municipal buildings (6 interviews) and at a church hall (4 interviews). It was important to interview the participants in a place where they felt comfortable. Green & Thorogood (2004) state that naturalism is linked with conducting research that are naturalistic and to settings that are defined as natural and not artificial.

The respondents were recruited in January 2007 through community health workers who were working in Khayelitsha. Appointments were scheduled with the respondents and agreements regarding the time and the venue for the interviews were made.

On the day of the interview the purpose of the study and how the findings could be used was explained. Each respondent gave consent to be interviewed. Interviews were audio taped. After demographic information was collected, the following open ended questions were asked.

- 1) Tell me about your experiences in the rural areas in terms of food consumed, physical activity, and support?
- 2) Tell me about your experiences when you moved to the city, in terms of food, physical activity, support, challenges or difficulties and changes that had occurred?

Probing questions which related to their stories about city life were asked. This type of data collection allowed the respondents to express their views spontaneously. Further probing allowed the researcher to gain deeper and more comprehensive responses that were in line with the goal of the study. The respondents were allowed

to talk until no new information (saturation) emerged. The interviews took about 40 minutes to one hour.

### **3.3.5 Data Analysis**

Data analysis occurred at the same time as the data collection process, and this allowed questions to be refined and new avenues of inquiry to develop (Pope, Ziebland & Mays, 2000). The recorded interviews were transcribed into English at the end of the data collection process. Transcriptions were read and the researcher listened to the tapes. This was the beginning of the data analysis process. The five stage framework approach (Pope, Ziebland & Mays, 2000) was used to analyze data. This framework is informed by the aims and objectives of this study. Similar answers were identified and highlighted; these were then grouped together. The main themes were then summarized and illustrated by the use of quotes.

### **3.3.6 Validity**

An external person transcribed the tapes to further improve validity: this was important as the researcher may be too involved with the data. For the purpose of this study there was a process of cross-checking interim findings. The findings were presented to each of the respondents to check if the data collected is the reflection of their views. The supervisor checked interpretation of data and transcripts; this was an external verification process known as peer reviewing. When disagreements regarding the interpretation of the findings occurred, discussions were held until a consensus was reached. Community health workers were also consulted to verify certain issues that were not clear.

### **3.4 Ethical consideration**

Ethical approval was obtained from the ethics committee of the University of the Western Cape. The aim of the study was explained to the participants. Written consent for participation and for the recording of the interview was obtained from the respondents. The respondents were assured that participation in this research was voluntary and that they had the freedom to withdraw from the study without giving an explanation to the researcher. Although the data was handled by the researcher and supervisor, confidentiality was guaranteed as these were individual interviews.

### **3.5 Limitations**

Finding male respondents was difficult as most of the new male arrivals fell in the younger age categories; potential respondents were younger than 35 years and the older men who could have been respondents had been in urban areas for more than 5 years. Men and women who were employed were not interviewed because interviews were conducted during the day. This meant that possible participants who were employed were missed.

The researcher had originally planned on drawing the sample from the Community Survey (2005) but most of the individuals who met the selection criteria could not be found, as they no longer resided in the area. In December 2006 people of Site C were moved from the area to formal housing.

The recruitment of participants by community health workers due to unavailability of participants from the Community Survey may have introduced biases to the findings as the respondents may have been more exposed to health information.

Findings from the study cannot be generalized to all populations who have migrated from rural to urban areas as the sample is not fully representative of this population. Payne and Williams (2005) describe the term ‘generalization’ as to claim that what is the case in one place to time will be so elsewhere or in another time. In qualitative research, the researcher is concerned with analytical generalizing rather than statistical power (Curtis et al., 2000). Thus the experiences and phenomenon described in this study may not apply to all situations, and they do not demonstrate the experiences of the whole migration population.





## **Chapter 4: Findings**

In this chapter the findings of the study will be presented, including the demographic characteristics of the sample. The findings will be presented in themes that emerged during the analysis, and quotes will be used to illustrate the comments made by the respondents.

### **4.1 Characteristics of the sample**

A total of ten respondents were interviewed. These were two males and eight females. The age ranged from 35 to 64 years. All the respondents spoke Xhosa and had migrated from rural Eastern Cape and had been in the urban area for 6 months to five years. Of the ten respondents, three were widowed; four were divorcees and 3 were single. Four of the respondents had secured formal housing while six lived in informal houses (informal houses are structures that are made of cardboard, wood and corrugated iron and are erected in areas that are not serviced). Eight respondents had spent 6 to 10 years at school; two respondents had not received any schooling. Two respondents had hypertension and one had hypertension and diabetes, and the rest had neither diabetes nor hypertension. Nine respondents had a family history of either diabetes or hypertension. Two of the respondents were recipients of a social grant. One respondent was employed but the others were unemployed and depended on others for financial support. There were 3 respondents who were part of a health club an initiative that was aimed at the prevention of non-communicable diseases in disadvantaged areas.

## 4.2 Findings from in-depth interviews

There were a number of themes that emerged from the analysis. These included reasons for rural-urban migration, experiences on arrival in the city, challenges in the urban areas, lifestyle changes which included dietary habits (food consumption in rural areas, food consumption in urban areas, portion sizes, meal patterns) and changes in the levels and types of physical activity, coping strategies during food shortage, perceived reasons for lifestyle changes, changes in body size and perceived causes of weight gain and barriers to healthy lifestyle.

### 4.2.1 Reasons for rural-urban migration

All the respondents reported that they moved to the urban areas due to a number of factors, and these included rural poverty, seeking employment, seeking better health care services, joining family members, and to begin a new life.

#### 4.2.1.1 Seeking employment

Seeking for employment was one of the most important reasons stated by the respondents:

*What made me move was the poverty or the poor conditions that I was living under in the rural areas. I decided to come to the city and look for a job.*

*I came here because I was struggling in the rural areas..... During this time my husband was unemployed.*

*I came here because of ill-health.*

Six of the respondents had jobs in the rural areas, and these included working in the fields, washing clothing and plastering houses. This type of employment was temporal and the income earned was insufficient.

#### **4.2.1.2 Better working opportunities**

Despite the availability of temporal employment in rural areas, respondents felt that the money earned was not enough and they could not survive on such amounts:

*I would go and work in someone else's field from 6 o'clock in the morning until 6 o'clock in the evening and would receive a sum of R 6.*

At times people did not receive money but rather food in exchange for the services rendered. Most of the respondents preferred working in the urban areas as they received more money compared to rural areas. One respondent summarised this by saying:

*In the rural areas if I work for a teacher she might not pay me..... she may give me R20 even though her washing (load) was large. What is R20? It is better here [city] because one receives R300 a month.*

#### **4.2.1.3 Better life opportunities**

All participants felt that life in the city is better than in the rural areas. They mentioned easy access to schools, better health services, and better opportunities for women:

*We decided that we want our children to go to the schools here because it was going to be easy for us as things here are cheaper and better than in the rural areas.*

*In the rural areas hospitals are far and when one suddenly becomes sick one struggles to get transport and may end up not going. The situation is worse when something happens in the evening as there would be no transport..*

*Life in the city is better because doctors are nearby, clinics are also close. When I have a problem I can quickly consult a doctor or the clinic. In the rural areas such services are far. One even struggle to get transportation to get there. At times I may not even have the money to pay for the transport when it's needed and may end up not going to the hospital.*

Despite relocating to the city some respondents still had connections with people in the rural areas. One respondent felt strongly about moving back to the rural area because of crime in urban areas.

*.....the work that I was doing made me stay here but I also had fears as there are too many criminals here.*

Some people move back and forth from urban to rural areas:

*I no longer reside there (rural area) I constantly visit my parents' home so that I can make sure that their possessions such as livestock are still taken care of*

#### **4.2.2 Challenges faced in urban areas**

Arriving in the city was not easy for some of the people. All the respondents faced various challenges in the city. The common challenge mentioned by 8 respondents was the difficulty in finding employment:

*Not getting a job has been one of my biggest challenges as I'm still fit to work. If I could get a job I think that things will be better.*

Other respondents felt that they could not ask for assistance as they were strangers in the neighbourhood and they did not know the relationship their relatives had with the wider community. There were respondents that experienced family problems such as marital problems on arrival in the city.

One respondent had problems regarding accommodation, and has summarised her experiences as follows:

*Things were tough here (city) we did not have a place of our own; we did not even have a bed. We used to lay cardboards and we would sleep on top of them. We did not have blanket, at times when one comes to the city one thinks that people here have everything and are unaware that one should bring their own things.*

Regardless of the challenges that respondents faced in the city, most were hopeful that their situations would improve.

*I did not know what I would eat or what I would use to wash myself in the rural areas, so even though there are difficulties here I think that life is better because my situation is temporary as I do not have a job. When I have a job I have no more difficulties.*

*Here I don't think about what would I have for supper as I have a sister who is working, I still feel sad about the fact that I'm not working but I'm hopeful that I'll get a job. (*

#### **4.2.3 Experiences on arrival in the city**

All the respondents had a relative, a friend, a partner or someone they knew when they arrived in the city. Almost all the respondents had intentions of getting employment but most were unsuccessful in securing employment.

Distant relatives who had been in the city for a longer period also played a role. They supported the new arrivals by offering accommodation, assisted in job seeking and taking them to relevant health services:

*I stayed with my cousin and I only moved out when I felt that we were overcrowded .....*

Although most respondents received support when they arrived in the city there was a respondent who felt rejected by her spouse, but neighbours and relatives were the ones who were supportive during this process.

Neighbours and friends also offered support in a different way, such as telling them about areas of possible employment.

*The person who showed me the places I could go to in order to find employment was my neighbour who was also looking for a job at the time.*

#### **4.2.4 Lifestyle changes**

The relocation from rural to urban areas resulted in changes in dietary intake and physical activity amongst the migrants. The way people lived in rural areas differed from the way they lived in urban areas.

##### **4.2.4.1 Dietary habits**

The changes that occurred regarding dietary intake included types of food consumed, meal pattern or frequency of consumption and portion sizes of food.

##### **4.2.4.2 Food consumption in rural areas**

Respondents felt that diets in the rural areas were monotonous and the staple was maize products such as samp, meliemeal (maize meal) and mielie-rice. Meals in

rural areas included **imifino** (wild green leaves), a mixture of pumpkin and mielie-rice known as **umqa**. All the respondents used to consume traditional meals in rural areas:

*In the rural areas we ate food such as samp, crumbled mielie meal pap (imiphokoqo), mixture of mielie meal and wild green leaves (imifino), mixture of mielie meal and pumpkin (umqa).*

*.....in our household we ate a mixture of mielie meal and wild green leaves (imifino) for three consecutive days as we had nothing else*

The food consumed in rural areas is seasonal and most of the respondents consumed food that they had produced:

*There (rural areas) I did not only depend on my groceries I made things (food) myself in order to save money.*

Food items such as meat and fruit were consumed occasionally:

*In rural areas I did not always have food such as meat; I only ate it at the end of the month.*

The prices of food such as fruit and vegetables in rural areas made such foods less accessible. One respondent explained:

*We used to eat them (fruit and vegetables) in the rural areas but they were not as common as here in the urban areas. Fruit in the rural areas is available but the chances of putting it in your mouth are slim as it is expensive and scarce because one only gets it when one goes to the nearest town.*

#### **4.2.4.3 Food consumption in urban areas**

A majority of the respondents felt that the city offered a variety of foods. Respondents ate more meat in the city than they did in the rural areas. The food that

they are consuming in urban areas included foods such as meat and fruit which is scarce in rural areas.

*...the type of food consumed here is different; here I can have food such as yoghurt.*

*I eat food that is sold such as fish and chips...*

In spite of the variety of food that the city offered, some respondents added a lot of fat in their food preparation. These are some of the comments regarding fat use:

*Here in Cape Town food always has fat. When one cooks rice they would have gravy, or they would have it with meat and even if one has a cabbage and fat will still be added*

*...2 Litres oil that I buy must last me a month. I come from a place where even oil was scarce, because I used to get it every now and then. Now when I have food I don't have a problem with getting oil*

Some respondents felt that the food that is consumed in the city is healthy because what they consumed in the rural areas was monotonous. Some of the respondents felt that the food that they consumed in cities was not healthy such as the fatty meats that they purchase from the street vendors. All the respondents could identify a difference in the type of food consumed in the rural and urban areas, although there were a few respondents who could not differentiate as to which food is healthier.

Despite the fact that most of the respondents had experienced changes in their dietary intake when they relocated to the city, there was one respondent whose diet did not change, but did acknowledge the presence of more vegetables in the city.

*Here in Cape Town not much has changed. The food here is also samp and maize meal but it is different and it's not cooked (prepared) in the traditional way. There are a lot of vegetables here.*



#### 4.2.4.4 Portion sizes of food

Nine of the respondents reported an increase in their portions sizes when they moved to the city. They expressed this by using expression such as *.....the way I eat now(urban area) has changed I can now fill my*. In rural areas this was not the case as food had to be saved, meaning that they ate small quantities in order to feed everyone. A respondent explained by saying the following:

*We try to save everything when we are in the rural areas because we would like it (food) to stretch and not be finished earlier.*

#### 4.2.4.5 Meal patterns

Meal patterns or frequency of consumption was irregular in the rural areas. The majority of the respondents would either skip breakfast or lunch but supper was a meal that was rarely skipped. The irregularities in meal frequency were a result of hard work. Most respondents were involved in activities that placed them away from homes thus they could only eat when they were at home.

*In the rural areas it depended on whether you went to fetch woods in the morning and in such instances you will eat in the afternoon and late supper*

In rural areas most respondents ate less than three times a day. While in the urban areas the number of meals consumed a day increased. They reported that they ate three times a day or more. One respondent's meal pattern changed by consuming fewer meals as she was very busy during the day

#### 4.2.5 Changes in the levels and types of physical activity

In rural areas most of the respondents were involved in labour intensive activities such as working in the fields, cleaning the houses, fetching water and fire-wood. Male respondents' duties included attending to livestock while female respondents'

duties also included rebuilding mud houses. All of the respondents used to spend most of their time fulfilling their household duties:

*In the rural areas we have home gardens and the same time we are responsible for household work such as cleaning.*

*At times we would make mud bricks and use them to build a house, and we would then plaster it*

In the city most of the respondents abandoned these duties but there was a respondent who was still involved in gardening. All the female respondents still worked in the household fulfilling duties including cleaning the house and taking care of children. There were two respondents who were involved in physical activity in the city as they were members of a health club:

*At times we would play skipping rope, but before joining the club I was unable to skip but now I can.*

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#### **4.2.6 Coping strategies during food shortages**

In rural areas most respondents had coping strategies that they employed when there was a shortage of food. These included working for people in exchange for food, borrowing food from neighbours, stealing food from farmers, and begging for food.

*If one did not have a garden they were forced to go and steal from the other farm.*

Other respondents received food from family members during times of food shortage. In urban areas most respondent borrowed food from neighbours and relatives when there was lack thereof but some respondent felt uncomfortable asking neighbours for food.

#### 4.2.7 Perceived reasons for changes in lifestyle

The respondents identified reasons that have led them to change their lifestyle. In the city most of the respondents felt that there was nothing to do. Some respondents identified access to ready-food which meant that one does not have to prepare food from scratch. One of the respondents commented as follows:

*.....Here food is accessible I don't have to grind maize in order to make mieliemeal, everything is ready for me to cook. I just need to put it in the pot*

Access to fuel such as electricity and paraffin meant that people could eat more frequently and one respondent summed this up by saying:

*In the city I'm in no hurry as I don't have to fetch wood in order to prepare food. I just buy paraffin or use electricity and eat when I want to eat*

#### 4.2.8 Changes in body size

Movement from the rural area to the city brought about changes in body weight. Most of the respondents reported weight gain since they moved to the city but there were a few that did not experience any weight changes. Clothing and changes in body parts were used by respondents to describe weight gain or loss. Respondents mentioned the following:

*I can even see the difference I have gained weight since I came here. I never used to have such big thighs.*

*When I arrived I was not this size, I was small and slender. Now I'm bigger. I was beautiful and I was a slender. When I arrived here I used to wear a size 36.....Now I wear size 46.*

*When I arrived I was much smaller than now. At the moment I can feel that my clothes are becoming tighter and I'm not as thin as I used to be*

Those who gained weight were happy about the weight gain and they were proud about it.

*I'm very happy..... when I'm at home (rural area) they compliment me and say that I'm fat. I tell them that rural life is different from city life.*

There were a few respondents that were not happy about their weight gain. This was especially the case amongst the male respondents.

*There is nothing good about weight gain, if there was a machine that I would get into and come out thin then I would, because I don't like the situation that I'm in.*

Although many respondents experienced weight gain there was one respondent who experienced weight loss and was concerned about the unexplained weight loss because she associated weight loss with ill-health.

#### **4.2.9 Perceived causes of weight gain**

Most respondents perceived happiness as their cause for weight gain; others identified lack of physical activity and the type of food that is consumed in urban areas as the cause of weight gain.

*I don't know whether it's the food or the fact that I'm happy here.*

*Firstly it may be due to the fact that I no longer work that hard and secondly the food here is different from the food I used to eat in the rural areas.*

*Thirdly there is more fun here although I don't go to parties. Here I don't think about what I would have for supper as I have a sister who is working...*

There were some respondents who attributed weight gain to lack of strenuous or hard work. However, there were respondents who could not explain their reason for weight gain:

*I don't know what it is; I'm not that happy either so I would not know what is causing it.*

#### **4.2.10 Barriers to Healthy Lifestyle**

There were various factors that were identified by the respondents as hindrances or barriers to healthy living. These included urban poverty, environment, lack of money and lack of knowledge.

*I think that poverty is one of the problems because even in the city there is poverty .*

*.....have you noticed that the meat that is sold by the street vendors has flies and you know that flies roam around even in the wrong places? But one will buy it because one can get it on credit*

There was a respondent who identified lack of knowledge as barrier to healthy eating.

*When I ate my food I thought that I was eating healthy. It is only when I met the club leaders that I started to understand that the way I was doing things was wrong*

Personal preferences and family habits or practices can be a hindrance even though people are aware of the consequences of their actions. This was the case amongst the two respondents who belonged to the health club. Family habits can lead to isolation, as the other members may have different eating habits. One respondent who belongs to a health club commented:

*.....for example we are told to eat chicken breast in the club. I cannot eat that part (chicken breast) it is too dry. I prefer eating it with the skin or with some fat. The problem is that at home people eat it with the fat and yet I'm not allowed.*

One of the respondents identified lack of money as a reason for lack of physical activity.

*...here I do nothing but I had the intentions of joining the gym but my problem is that I don't have money to do so.*

### **4.3 Summary of findings**

In this study it was found that respondents moved from rural areas due to a number of reasons including seeking employment, better life and working opportunities. Crime was identified as a factor that would influence the decision to move back to rural areas. The city posed challenges such as inability to secure employment and accommodation. Although faced with challenges the majority was hopeful that the situation will improve. On arrival in the city many respondents had relatives, friends and extended family members who played an important supportive role. The movement to urban areas brought about changes in dietary intake, physical activity and body size. These changes were due to access to prepared food and availability of alternative forms of fuel in the city. Many respondents experienced food shortages in both rural and urban areas. During such periods strategies such as working for people in exchange for food, borrowing food, begging for food or stealing food were employed. In the city factors such as urban poverty, lack of money, environment, lack of knowledge and family preferences were identified as hindrances to a healthy lifestyle. The next chapter will be a discussion of the findings.

## Chapter 5: Discussion

This study describes the factors associated with urbanization, challenges faced by the urbanized population, the type of lifestyle changes adopted and barriers to adopting a healthy lifestyle among urban residents who have migrated to Khayelitsha in the past 5 years. Such information is important in designing appropriate interventions for populations that have migrated from rural to urban areas.

This study indicates that rural-urban migration or urbanization is influenced by multiple factors that are intertwined. In this study rural-urban migration is influenced by factors such as poor living conditions in rural areas which include poor infrastructure, household food insecurity and lack of access to basic services and poor education facilities. Although people relocate to urban areas, they still maintain strong linkages with their rural homesteads and tend to move in between their rural and urban homes. This circular migration was identified as a strategy to minimize the impacts of poverty and the income obtained in the city served as a safety net for households in rural areas especially during periods of crisis such as drought and sudden loss of employment (Evans and Pirzada, 1995).

Many of the respondents who relocated in the hope of finding employment had difficulties in acquiring employment. Since arriving in the city the majority of the respondents were unemployed but had been in and out of temporary employment. This confirms data collected by de Swardt et al. which shows high rates of unemployment in Khayelitsha (de Swardt et al., 2005).

Lack of education may be a contributory factor in the inability to find employment as all of the respondents had less than 11 years of schooling. In a survey conducted in Khayelitsha, de Swardt et al. (2005) reported an association between education level and the likelihood of obtaining paid work. Results from the survey revealed that a decrease in education level decreases the likelihood of obtaining employment. Lack of accommodation is one of the challenges that migrating population experience in the city. Many therefore resorted to staying in the informal settlements or lodge with others. The Census data from 2001 showed that 57.4% of the population in Khayelitsha resides in informal settlements (Information and knowledge management Department, 2005)

The dependence on purchased food in the urban areas is another burden that the migrating population faces. In a population where unemployment is high (50.8%) (Information and knowledge management Department, 2005), this poses a challenge. The need for money in urban settings becomes crucial thus limiting the food choices in this population. Drewnoski and Specter (2004) suggested that energy-dense food which includes refined grains or fats may represent lower-cost options to consumers. In an environment where the majority of people rely on purchased food, sharing becomes very difficult as people have to save the little they have.

However, respondents feel that being in the city is beneficial. The perceived benefits are the availability of transport and this improvement in infrastructure allows people to have easy access to services such as hospitals. The availability of food especially commercially prepared food such as samp and mieliemeal, means that less time is spent on crushing and grinding maize as was the case in rural areas. Access to other



fuel sources such as electricity and paraffin means that less time is spent on preparing food and people can eat more frequently. This has an impact on physical activity as many of the tasks that used to be performed in rural areas are now no longer necessary resulting in a decrease in physical activity.

Both the challenges and the perceived benefits of being in the city have an influence on an individual's behaviour. For example, availability of fast food including cheap fatty food may result in an increase in frequency of food consumption and snacking in between meals (Mazengo et al., 1997), large portion sizes (Puoane et al., 2005) and decreased physical activity, which in turn partly influenced by lack of physical safety (Puoane, Bradley and Hughes, 2005)

In the current study, all respondents reported consuming maize as the staple food but the consumption of meat, vegetables and fruit was low in the rural areas. These findings confirm those of Mazengo et al. (1997) who looked at food consumption patterns in rural and urban areas, and revealed that the consumption of protein (animal origin) was low amongst the rural subjects. The findings of this study support those of Huang and Boise (1996), who found that in China urbanization led to a large increase in the consumption of fruit and moderate consumption in meat, fish and eggs while there was a decrease in vegetable and grain consumption amongst urbanized Chinese.

In this study, respondents also reported an increase in the frequency of consumption of food rich in fat and an increase in food portion sizes after moving to urban areas. Similarly a review by Bourne, Lambert & Steyn (2002) showed a shift in dietary intake amongst urban blacks who have moved from rural areas. Data revealed

increase of 59.7% in fat intake from 1940 (16.4%) to 1990 (26.2%) in urban areas, while the intake of fat in rural areas was also on the increase although it was below the Prudent guidelines for fat (Bourne, Lambert & Steyn, 2002). Although most respondents in the current study increased the quantity of food consumed, poor financial resources and poor availability of food can compromise the quality of food consumed. This is probably due to that fact that a large percent of the urbanized population is unemployed and therefore cannot afford healthy meat and resort to cheap fatty meat that is sold by street vendors (Chopra & Puoane, 2003; Puoane et al., 2005; Puoane, Bradley & Hughes, 2005). Another possible explanation is that poor people tend to sacrifice their food for material possession (Puoane et al., 2006). This change in priority is driven by the competitive lifestyles in urban areas.

The respondents felt that the work performed in rural areas was hard and by being in the city they could now relax. Thus not performing strenuous tasks became a luxury. The level of physical activity decreased in the urban areas and most of the respondents were sedentary or had low levels of physical activity. In rural areas respondents performed household tasks such as plastering mud houses; collecting firewood, fetching water and working in the fields. Such activities were longer in duration and more intensive, while in urban areas these duties were abandoned due to improved access to infrastructure such as water and electricity. In a Chronic Poverty survey (2002) it was reported that females in rural areas spent more than one hour a day performing tasks such as fetching water (40%), fetching wood (43%) and domestic work (76%) while their urban counterparts spent more than one hour performing tasks such as domestic work (85%), child care (28%) and searching for work (20%). On the other hand males in rural areas spent more time doing gardening

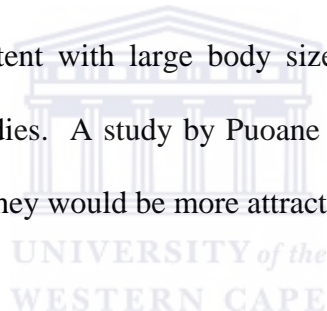
in order to produce food (57%) and fetching wood (20%) while urban dwellers spent more time in domestic work (42%) and searching for work (19%) (de Swardt, 2003). Findings from the THUSA study revealed a tendency towards lower physical activity amongst urban women (Kruger et al., 2002). Physical inactivity in this population needs to be considered as one of the priority areas for interventions.

In both rural and urban areas many of the respondents experienced periods of food shortages. During such periods many employed coping strategies such as working for others in exchange for food, borrowing food from neighbours, begging for food and stealing while in urban areas people depended on borrowing food from neighbours and relatives during food shortages while some felt uncomfortable with borrowing from neighbours. Although in both rural and urban areas, the majority had coping strategies, in urban areas the situation was different as there was a lack of sharing due to limited resources. In urban areas many depend on purchased food compared to those in rural areas who still produced their own. The option is to resort to cheap unhealthy food which is energy-dense and lower in cost (Drewnoski and Specter, 2004).

There was an increase in the frequency of food consumption in the urban area because respondents ate three times or more while in the rural areas they ate less than three times a day. The frequency of consumption in rural areas is influenced by the physical activities as rural dwellers spent more time engaging in tasks that require them to be away from their homes while urban dwellers lead a sedentary life as they spend less time on strenuous activities. The easy access to food tends to increase the frequency as well as the amount of food consumed in some families. These findings

confirm those of (Bourne, Lambert & Steyn, 2002; Drewnoski & Popkin, 1997; Walker & Segal, 1997), who found that the nutrition transition was associated with urbanization.

Regardless of the challenges faced by migrants in urban areas many have gained weight since moving to the city and this change in body size is perceived as good. Several studies have shown that being overweight among black South African women have positive connotations (Mvo, Dick & Steyn, 1999; Puoane et al., 2005; Kruger et al., 2001). Although the change in body size was viewed as positive there were a few who expressed dissatisfaction in the increase in body size. Similarly in a study by Mvo, Dick and Steyn (1999) responses regarding body size satisfaction varied, some of the participants were content with large body size while other women showed discontentment with their bodies. A study by Puoane et al. (2005) differs in that all the respondents thought that they would be more attractive and healthier when thin.

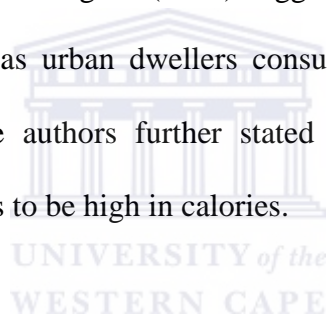


When comparing the dietary intake and physical levels of the respondents in rural and urban areas it is not surprising that they would gain weight. According to literature, weight gain is a result of an increase in energy consumption and a decrease in energy expenditure (WHO, 2000). Some of the respondents assessed weight gain through clothing. These findings are similar to those of Mvo, Dick and Steyn (1999) where women described themselves as large according to clothing which no longer fitted or from comments made by others.

The increase in body size in this study is attributed to happiness and lack of strenuous physical activity. Similar findings were reported in other studies, which found that

large body size in black urban women was perceived to reflect happiness and affluence (Puoane et al., 2005; Mvo, Dick, & Steyn, 1999). These positive perceptions to large body size pose a challenge in the prevention and management of NCDs in black communities.

In an area such as Khayelitsha many migrants find themselves having to cope in an unhealthy environment. The environment in informal settlements hampers the ability to choose food. The study identified various factors that may hinder one's ability to live healthily. These findings confirm those of Puoane, Bradley and Hughes (2005) which found that a large number of street vendors in the township sold fatty meat and sausages. Puoane, Bradley and Hughes (2005) suggested that the environment may play a role in food choices as urban dwellers consume what is available in their immediate environment. The authors further stated that the urban population is exposed to fast food that tends to be high in calories.



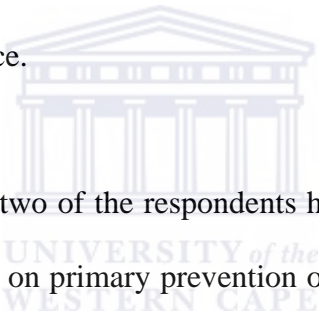
The barriers to a healthy lifestyle included urban poverty and lack of money. Kim, Symons and Popkin (2004) examined the link between socioeconomic status and lifestyle factors in China and the United States and revealed that in China as socioeconomic status improved, lifestyle was less healthy, while in the United States improvements in socioeconomic status was related to healthier lifestyle. She attributed these findings to lack of knowledge about nutrition rather than to poverty. Similarly Puoane et al. (2005) identified lack of knowledge on nutrition amongst community health workers who were overweight as a contributory factor to their condition.

Family preferences were also identified as a barrier to healthy eating in the current study. Similarly Charlton, Brewitt and Bourne (2004), found that food choices were influenced by taste, preference of the rest of the family and food prices.

The changes in lifestyle that occur in this population when they move to urban areas have serious health implications. These changes brought about by urbanization put this population at a risk of developing NCDs such as hypertension (van Rooyen et al., 2000), diabetes (Steyn et al., 2001), cardio-vascular diseases (Vorster, 2002) and certain types of cancers. The consumption of excess food, increase frequency and physical inactivity in urban areas can lead to overweight or obesity. A recent National survey has identified obesity an emerging public health problem among urban African women (Puoane et al., 2002). This is a growing concern because obesity has been identified as one of the major risk factors in the development of NCDs (WHO, 2000). Alternatively the decreased fat content of rural diets and lower frequency in consumption, accompanied by high intensity physical activity can be protective towards the development of NCDs, but circular migration poses a challenge as risky behaviours and practices may be introduced to those residing in rural areas.

The emergence of NCDs is characteristic of the era of degenerative diseases described by Omran (1971), but as resurgence of old infectious diseases and new infections (fourth stage) as suggested by Olshansky & Ault (1986) is characteristic of the situation that is occurring in developing countries such as South Africa. Evidence from the Cape mortality data (2001) revealed the number of deaths per 100 000 people was as follows, HIV/AIDS (102), injury (120), non-communicable diseases (520) and communicable (363) (Scott et al., 2003). This mortality data is an

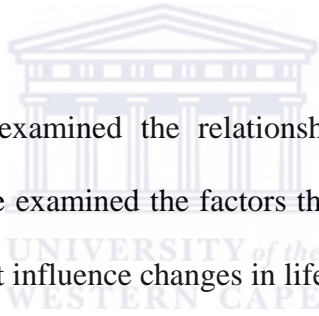
indication that the periods in the epidemiological transition overlap (Beaglehole & Bonita). Rogers & Hackenberg (1987) reported that the patterns of mortality and morbidity are due to individual lifestyle, but others have argued that this oversimplification undermines the influences of social and economic, political and cultural systems (Beaglehole & Bonita, 1997; Waters, 2006), and findings from this study show that NCDs are not only influenced by an individual's lifestyle but rather by the environment and socio-economic status. This is in line with what was reported by Puoane et al., 2005, that environmental factors have an influence and can expose people to the risk of developing NCDs. Such a situation is characteristic of a 'toxic environment' described by Poston and Foreyt (1999), where there is an increase in food portion sizes, reduction in physical activity, low socioeconomic status and impoverished place of residence.



It was interesting to note that two of the respondents had attended the health club, an intervention program focusing on primary prevention of NCDs in Khayelitsha. These two members had an insight on proper eating practices. Other members from the community can learn from such interventions. It would be beneficial if the information given in health clubs can be widely distributed to those arriving from rural areas

Social support was one of the strategies used by migrants to cope with the challenges posed by urban areas. Support offered by family relatives, friends and neighbours was important as it made the transition from rural to urban areas less stressful. Social support was defined as any environmental mechanism that buffers the effects of stress and refers to supportive interaction between humans and may refer to structural

aspects of social networks (Orth-Gomér & Undén, 1987). In communities where there is trust, interpersonal connections are supported and these have been found to have positive structural benefits (Putman, 2000) such as better access to social and health services (Hendryx & Ahern, 2001; Rosenheck, 2001). However, communities where trust does not exist, the opportunity to share information can be missed (Mulvaney-Day, Alegria & Sribney; 2007). Although urban life may diminish social capital, it is important to recognize that non-governmental organizations and community based organizations which are very active in urban areas can play a role by serving as catalyst for improved social cooperation (Ruel, Haddad & Garret, 1999). Appropriate interventions are therefore needed to assist the urbanized populations to lead a healthy lifestyle and thus reduce the prevalence of NCDs.



A number of studies have examined the relationship between urbanization and lifestyle changes but few have examined the factors that contribute to these changes. This study looks at factors that influence changes in lifestyles after moving to the city. Although the sample size is small, this study provides valuable information that can be used to plan and implement interventions to assist migrating populations to adjust properly in the city, thus a reducing risk factors to NCDs.



## **Chapter 6: Conclusion and Recommendations**

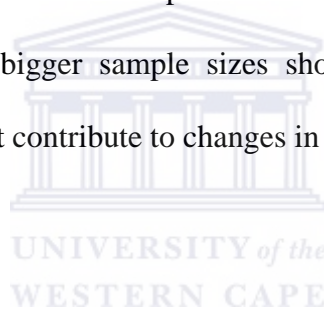
It is evident from the findings of this study, that there are various reasons for rural-urban migration. These include rural poverty, prospects of employment, improved health and educational facilities in urban areas. However, many migrants who have relocated are faced with challenges such as the inability to secure employment, lack of accommodation which results in the erection of temporary houses (informal settlements) in areas that are not supplied with basic services including proper water sanitation and electricity. Life became more difficult than had been anticipated.

On the other hand, the perceived benefits for residing in urban areas seems to have a negative influence on physical activity, frequency of food consumption and dietary habits. The adoption of an urban lifestyle resulted in the consumption of food with high fat content and an increase in frequency of food consumption, large portion sizes of food and reduced physical activity. This in turn has resulted in an increase in body size, which was also perceived as a positive outcome. Such changes in body size were attributed to happiness and lack of strenuous physical activity.

The environment, urban poverty, lack of money, lack of knowledge and family preferences were identified as barriers to healthy lifestyle in urban areas. All of these factors have negative health implications in this population and may also hamper any interventions aimed at preventing the onset of NCDs among the newer arrivals

The following recommendations can be made based on the findings of this study:

- Employment opportunities should be created in the rural areas. This may discourage rural dwellers from relocating to urban areas and also attract migrants in urban areas who are also struggling with employment,
- There should be intervention programmes in the city that target people who have recently relocated to urban areas. Such programmes should focus on nutrition and the importance of physical activity.
- Recreational facilities such as stadiums and parks should be constructed in order to assist disadvantaged communities in increasing in their levels of physical activity,
- Nutrition education to such populations should consider the influence of family, environment and cultural aspects in making food choices, and
- Further studies with bigger sample sizes should be undertaken to further explore the factors that contribute to changes in lifestyle



## References

*A Dictionary of World History*. (2000). [Online], Available

<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t48.e37>

92 [03/03/07 14:00 PM]

Bell, A.C., Ge, K. and Popkin, B. (2002). The road to obesity to the path for prevention: motorized transportation and obesity in China. *Obesity Research*, 10(4): 277-283.

Britten, N. (1995). Qualitative research interviews in medical research. *British Medical Journal*, 311: 251-253.

Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: A case of the tail wagging the dog. *British Medical Journal*, 322: 1115-1117.

Beaglehole, R and Bonita, R. (1997). *Public Health at the Crossroads: Achievements and prospects* (2<sup>nd</sup> edition). United Kingdom, Cambridge University Press.

Bourne, L., Lambert, E.V. and Steyn, K. (2002). Where does the black population of South Africa stand on the nutrition transition? *Public Health Nutrition*, 5(1A): 157-162.

Bradshaw, D., Bourne, D., Schneider, M. and Sayed, R. (1995). Mortality patterns of chronic diseases of lifestyle in South Africa. Fourie J. and Steyn K (eds), *Chronic Diseases of Lifestyle in South Africa: Review of Research and Identification of*

*Essential Health Research Priorities*, Medical Research Council Technical Report.  
Cape Town: South Africa Medical Research Council, 5-35.

Bradshaw, D., Groenewald, P., Laubscher, R., Nannan, N., Nojilana, B., Norma, R., Pieterse, D. and Schneider, M. (2003). Initial burden of disease estimates for South Africa, 2000. *South African Medical Journal*, 93(9): 682-688.

Bradshaw, D., Nannan, N., Laubscher, R., Groenewald, P., Joubert, J., Nojilana, B., Norman, R., Pieterse, D. and Schneider, M. (2004). *South African National Burden of disease Study, 2000: Estimates of the Provincial Mortality*. Cape Town: South African Medical Council.

Charlton, K.E., Brewitt P. and Bourne, L.T. (2004). Sources and credibility of nutrition information among black urban South African women, with a focus on messages related to obesity. *Public Health Nutrition*, 7(6): 801-811.

Chopra, M. and Puoane, T. (2003). Prevention of diabetes throughout obesogenic World. *Diabetes Voice*, 48 (special issue): 24-26.

Chopra, M., Galbraith, S. and Darnton-Hill, I. (2002). A global response to a global problem: The epidemic of overnutrition. *Bulletin of the World Health Organization*, 80: 952-58.

Cook, G.P. (1986). Khayelitsha-Policy change of crisis response. *Transactions Institute of British Geographers*, 11:57-66.

Curtis, S., Gesler, W., Smith, G. and Washburn, S. (2000). Approaches to sampling and case selection in qualitative research: Example in the geography of health. *Social Science and Medicine*, 50: 1001-1014.

de Swart, C., Puoane, T., Chopra, M. and du Toit A. (2005). Urban poverty in Cape Town. *Environment & Urbanization*, 17(2), 101-112

de Swart, C. (2003). *Unravelling Chronic Poverty in South Africa: Some Food for thought*. Paper delivered to the International conference on chronic and policy development, Manchester, 7-9 April.

Drewnoski, A. and Specter, S.E. (2004). Poverty and obesity: The role of energy density and energy cost. *American Journal of Clinical Nutrition*, 79(1): 6-16.

Drewnoski, A and Popkin, B.M. (1997). The nutrition transition: new trends in the global diet. *Nutrition Reviews*, 55(2): 31-43.

Evans, H.E. and Pirzada, G. (1995). Rural households as producers: income diversification and the allocation of resources. Baker, J. and Aina T.A (eds). *The Migration Experience in Africa*. Uppsala, Nordiska Afrika Institute: 65-86.

Evans, M., Sinclair, R.C. Fusimalohi, C. and Liava'a, V. (2001). Globalization, diet, and health: An example from Tonga. *Bulletin of the World Health Organization*, 79(9): 856-862.

Francis, E. and Hoddinott, J. (1993). Migration and differentiation in Western Kenya: A Tale of two Sub-locations. *Journal of Development*, 30(1): 115-145.

Green, J. & Thorogood, N. (2004). *Qualitative Methods for Health Research*. London: Sage Publications: pg 3-26.

Goedecke, J.H., Jennings, C. and Lambert, V. (2006). Obesity in South Africa. Steyn, K., Fourie, F. and Temple, N (eds.). *Chronic Diseases of Lifestyle: 1995-2005, Technical Report*. Cape Town: South African Medical Research Council: 65-79.

Haddad, L. (2003). Redirecting the diet transition: what can food policy do? *Development Policy Review*, 21(5-6): 599-614

Hendryx, M. & Ahern, M. (2001). Access to mental health services and health sector social capital. *Administration and Policy in Mental Health*, 28(3): 205-218.

Huang, J. and Bouis, H. (1996). *Structural changes in the Demand for Food in Asia*. Food, agriculture, and the Environment Discussion Paper no. 11. Washington DC: International Food Policy Research Institute.

Information and knowledge management Department. (2005). *A population profile of Khayelitsha: Socio-economic information from the 2001 Census*. [Online], Available

[http://web.capetown.gov.za/eDocuments/A\\_Population\\_Profile\\_of\\_Khayelitsha\\_1052006142120\\_359.pdf](http://web.capetown.gov.za/eDocuments/A_Population_Profile_of_Khayelitsha_1052006142120_359.pdf) [03/03/07 15:00 PM]

Kim, S., Symons, M. and Popkin, B.M. (2004). Contrasting socioeconomic profiles related to healthier lifestyles in China and the United States. *American Journal of Epidemiology*, 159: 184-191

Kruger, H.S., Venter, C.S. and Vorster, H.H. and Margetts, B.M. (2002). Physical inactivity as a risk factor for cardiovascular diseases in communities undergoing rural to urban transition: The THUSA study. *Cardiovascular journal of South Africa*, 14(1): 16-23

Kruger, H.S., Venter, C.S. and Vorster, H.H. (2001). Obesity in African women in the North West Province, South Africa is associated with an increased risk of non-communicable diseases: The THUSA study. *British Journal of Nutrition*, 86: 733-740.

Lang, T. (1999). Diet, health and globalization: Five key questions. *Proceedings of the Nutrition Society*, 58(2): 335-43.

Levitt, N.S., Steyn, K., Lambert, E.V., Reagon, G., Lombard, C.J., Rossouw, K., (1999). Modifiable risk factors for type 2 diabetes mellitus in peri-urban community in South Africa. *Diabetic Medicine*, 16: 946-950.

Lawson, H.R. (2005). *Travel Report*. [Online], Available

<http://www.parliament.sa.gov.au/NR/rdonlyres/8E71268A-7638-44CE-83E2-EE17C26557E8/6525/20052391557.pdf> [03/08/07 15:00 PM]

Nissenen A., Berrios X. and Puska P. (2001). Community-Based Non-Communicable Diseases Intervention: Lessons from Developed Countries for Developing Ones.

*Bulletin of the World Health Organization* 79(10): 963-970.

Marais, H. (1998). *South Africa: Limits to Change-The Political Economy of Transformation*. Cape Town: University of Cape Town Press.

Mazengo, M.C., Simell, O. Lukmanji, Z., Shirima, R. and Karveti, R.L. (1997). Food consumption in rural and urban Tanzania. *Acta Tropica*, 68: 313-326.

Mendez, M.A. and Popkin, B.M. (2004). Globalization, urbanization and nutrition change in the developing world. *Journal of Agriculture and Development Economics*, 1(2): 220-241

Mollentze, W.F., Moore, A., Joubert, G., Oosthuizen, G.M. Steyn, A.F., Steyn, K. and Weich, D.J.V. (1993). Cardiovascular risk factors in the black population of QwaQwa. *South African Journal of Clinical Nutrition*, 6: 50-51.

Mollentze, W.F., Moore, A., Steyn, A.F., Joubert, G., Steyn, K., Oosthuizen, G.M. and Wegh, D.J. (1995). Coronary heart disease risk factors in rural and urban Orange Free State black population. *South African Medical Journal*, 85(2): 90-96.

Mears, R. (1997). Rural-urban migration or urbanization in South Africa. *South African Journal of Economics*, 65(4): 596-615.



Mulvaney-Day, N.E., Alegria, M. & Sribney, W. (2007). Social cohesion, social support, and health among Latinos in the United States. *Social Science and Medicine*, 64: 477-495.

Mvo, Z., Dick, J. and Steyn, K. (1999). Perceptions of overweight women about acceptable body size of women and children. *Curationis*, 22:27-31.

Omran, A.R. (1996). *The Epidemiologic transition in the Americans*. Washington, Pan American Health Organization.

Omran, A.R. (1971). The epidemiologic transition, a theory of the epidemiology of population change. *Milbank Memorial Fund Quarterly*, 49: 509-539

Olshansky, S.J and Ault, A.B. (1986). The fourth stage of epidemiologic transition: the age of delayed degenerative diseases. *The Milbank Quarterly*, 64(3): 355-391.

Orth-Gomér, K. and Undén, A. (1987). The measurement of social support in population surveys. *Social Science and Medicine*, 24: 83-94.

Payne, G. and Williams, M. (2005). Generalization in qualitative research. *Sociology*, 39(2): 295-314.

Pope, C., Ziebland, S. and Mays, N. (2000). Qualitative research in health care: analyzing qualitative data. *British Medical Journal*, 320: 114-116.

- Popkin, B.M. (1999). Urbanization, lifestyle changes and the nutrition transition. *World Development*, 27(11): 1905-1999.
- Popkin, B.M. (1998). The nutrition transition and health implication in lower income countries. *Public Health Nutrition*, 1(1): 5-21.
- Poston, W.S.C and Foreyt J.P. (1999). Obesity is an environmental issue. *Atherosclerosis* 146: 201-209.
- Puoane, T. (2004). *Transforming the Health Services to Respond to the Emerging Epidemic of NCDs*. Paper delivered at Public Health Association of South Africa conference 2004, Durban, 6-8 June. Unpublished paper
- Puoane, T., Steyn, K., Bradshaw, D., Laubscher, R., Fourie, J. Lambert, V. and Mbananga N. (2002). Obesity in south Africa: the South African Demographic and Health Survey. *Obesity Research*, 10(10): 1038-1048.
- Puoane, T., Bradley, H. and Hughes, G.D. (2005). Obesity among South African women. *Human Ecology Special Issue*, 13: 91-95. .
- Puoane, T., Bradley, H. and Hughes, G.D. (2006). Community Intervention for the Emerging Epidemic of Non-communicable Diseases. *South African Journal of Clinical Nutrition*, 19(2): 56-62

Puoane, T and Hughes, G.D. (2005). Impact of the HIV/AIDS pandemic on non-communicable disease prevention. *South African Medical Journal*, 95(4): 228-229.

Puoane, T., Fourie, J.M., Shapiro, M., Rosling, L., Tshaka, N.C. and Oelofse, A. (2005). Big is beautiful-an exploration with urban black community health workers in a South African township. *South African Journal of Clinical Nutrition*, 18(1): 6-15.

Puoane, T., Matwa, P., Bradley, H. and Hughes, G.D. (2006). Socio-cultural factors influencing food consumption patterns in the black African population in an urban township in South Africa. *Human Ecology Special Issue*, 14: 89-93.

Puska, P., Vartiainen, E., Tuomilehto, J., Salomaa V., Nissinen A. (1998). Changes in Premature Deaths in Finland: Successful Long-Term Prevention of Cardiovascular Diseases. *Bulletin of the World Health Organization*, 76: 419-425.

Rogers, R.G. and Hackenberg, R. (1987). Extending epidemiology transition: a new stage. *Social Biology*, 34(3-4): 234-243.

Rosenheck, R. (2001). Organisational Process: A Missing Link between Research and Practice. *Psychiatric Services*, 52(12): 1607-1612.

Ruel, M.T., Haddad L. and Garrett JL. (1999). Some urban facts of life: implications for research and policy. *World Dev.* 27: 1917– 38

Scott, V., Sanders, D., Reagon, G., Groenewald, P. Bradshaw, D., Nojilana, B., Mohamed, H. and Daniels, J. (2003). *Cape Town Mortality, 2001, Part II, An equity-lens and challenges*. Cape Town: City of Cape Town, South Africa Medical Research Council, University of Cape Town, University of Western Cape.

Smit, W. (1998). The rural linkages of urban households in Durban, South Africa. *Environment and Urbanization*, 10(1):77-87.

Smith, P. and Booyesen, J.J. (1977). *Urbanization in the Homelands*, (Pretoria University, IPSO Monograph 3)

South African Institute of Race Relations. (1984). *Survey of Race Relations in South Africa 1983*. Johannesburg: South African Institute of Race Relations.

Sparling, P.B., Noakes, T.D., Steyn, K., Jordaan, E., Jooste, P.L., Bourne, L.T. (1994). Level of physical activity and coronary heart diseases risk factors in black South African men. *Medicine and Science in Sports and Exercise*, 26(7): 896-902.

Sports Science Institute of South Africa. (2007) *Outreach: Community Health Intervention Programme (CHIPs)*. [Online], Available <http://www.ssis.com/ochips.asp> [03/08/07 16:30 PM]

Statistics South Africa. (1999). *Population Census, 1996: Primary Tables*. Report 30-01-17. Pretoria: Statistic South Africa.

Statistics South Africa. (2003) Census 2001: investigation into appropriate definition of urban and rural areas for South Africa (Discussion document). Report 03-02-20. Pretoria: Statistic South Africa.

Statistics South Africa. (2006). *Mid-year population estimates, South Africa*.

[Online], Available <http://www.statssa.gov.za/publications/pP0302/P03022006.pdf>

[03/03/07 16:30 PM]

Sjaastad, L.A. (1962). The costs and returns of human migration. *Journal of Political economy*, 70(5): 80-93.

Sobngwi, E., Mbanya, J., Unwin, N.C., Porcher, R., Kengne, A., Fezeu, L., Minkoulou, E.M., Tournoux, C., Gautier, J., Aspray T.J. and Alberti, K. (2004). Exposure over the life course to an urban environment and its relation with obesity, diabetes, and hypertension in rural and urban Cameroon. *International Journal of Epidemiology*, 33(4):769-776

South African Demographic Survey 1998. [Online], Available <http://www.doh.gov.za/facts/1998/sadhs98/chapter10.pdf#search=%22mortality%20and%20morbidity%20in%20adults%20%22> [03/03/06 14:30 PM]

Steyn, N., Burger, S., Monyeki, K.D., Alberts, M. and Nthangeni, G. (2001). Seasonal variation in dietary intake of the adult population of Dikgale. *South African Journal of Clinical Nutrition*, 14(4): 140-145.

Steyn, K., Fourie, J.M., Lombard, C.J., Katzenellenbogen, J., Bourne, L.T., Jooste, P.L. (1996). Hypertension in the black community of the Cape Peninsula: The BRISK study. *East African Medical Journal*, 73(11): 758-763.

Strauss, A. L and Corbin, J. (1990). *Basics of qualitative research: grounded theory procedures and techniques*. United States: Sage Publication.

*The Concise Oxford English Dictionary*. (2006). [Online], Available

<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t23.e35493>> [03/03/07 14:10 PM]

*The Oxford Dictionary of Sports Science & Medicine*. (2006). [Online], Available

<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t161.e5276> [03/03/07 14:35 PM]



*The Oxford Dictionary of Sports Science and Medicine*. (2007). [Online], Available

<http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t23.e35493> [03/03/07 14:20 PM]

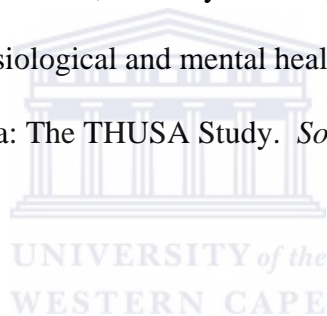
Tian, H.G., Guo, Z.Y, Hu, G., Yu, S.J., Sun W, Pietinen, P. and Nissinen, A. (1995) Changes in Sodium Intake and Blood Pressure in a Community-Based Intervention Project in China. *Journal of Human Hypertension*, 9(12): 959-968.

Todaro, M.P. (1982). *Economic development in the Third World* (2<sup>nd</sup> edition). New York and London: Longman.

van Rooyen, J.M., Kruger, H.S., Huisman, H.W., Wissing, M.P., Venter, C.S. & Vorster, H.H. (2000). An epidemiological study of hypertension and its determinants in a population in transition: the THUSA study. *Journal of Human Hypertension*, 14: 779-787.

Vorster, H.H. (2002). The emergence of cardiovascular disease during urbanization of Africans. *Public Health Nutrition*, 5(1A): 239-243

Vorster, H.H., Wissing, M.P., Venter, C.S., Kruger HS, Malan NT, de Ridder JH, Veldman FJ, Steyn HS, Margetts BM, MacIntyre UE. (2000). The impact of urbanization on physical, physiological and mental health of Africans in the North West Province of South Africa: The THUSA Study. *South African Journal of Science*, 96: 505-514.



Walker, A.R.P. and Segal, I. (1997). Health/ill-health transition in less privileged populations: what does the future hold? *Journal of the Royal College of Physicians of London*, 31(4) 392-395

Waters, W.F. (2006). Globalization and local response to epidemiological overlap in 21<sup>st</sup> century Ecuador. *Globalization and Health*, 2:8

West, M.E. (1982). From Pass Courts to deportation: Changing Patterns of influx control in Cape Town. *African Affairs*, 81:463-477.

World Health Organization. (1997). *Health Informatics and Telemedicine*. Geneva: World Health Organization.

World Health Organization. (2000). *Obesity: preventing and managing the global epidemic*. World Health Organization Technical Report, No 894

World Health Organization. (2002). *Non-communicable Diseases and Mental Health Publication*. Integrated management of cardiovascular risk report of a WHO Meeting. Geneva, 9-12 July.

World Health Organization. (2004). A strategy to prevent chronic disease in Europe  
A focus on public health action: The CINDI vision. [Online], Available  
[http://www.phac-aspc.gc.ca/ccdpc-cpcmc/cindi/pdf/cindi\\_vision\\_en.pdf](http://www.phac-aspc.gc.ca/ccdpc-cpcmc/cindi/pdf/cindi_vision_en.pdf) [20/08/07  
14:20 PM]

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Yach, D. and Bettcher, D. (1998). The globalization of Public Health, I: threats and opportunities. *American Journal of Public Health*, 88(5): 735-738.



## APPENDIX 1: Information Sheet

### INFORMATION SHEET

Urbanisation and Lifestyle changes related to non-communicable diseases: Exploration of experiences of black men and women who have relocated from the rural areas to Khayelitsha, urban township in Cape Town

Dear Participant

I am a student from the University of the Western Cape. I am trying to explore the experiences of black urban club participants and non club participants who have moved from the Eastern. I will be conducting this study among residence of Site C. I am requesting your participation in this study.

#### **Why are we doing this?**

A large population of people living in these informal settlements come from the rural areas. Urbanisation is associated with changes in lifestyle leading to the emergence of non communicable diseases (such as diabetes and hypertension) including obesity in this population. The information obtained can also assist in the modification of the already existing intervention programmes so that they can meet the requirements of the population. On the other hand this study will assist me with obtaining my Masters degree.

#### **Who are the participants?**

The participants are men and women people who reside in Khayelitsha. These people must have moved from rural areas in the past 2-5 years and must be 35 years old and above. People who have diabetes or hypertension will be included in this study.

#### **What do we expect from the participants in the study?**

A researcher who is a student at the University of the Western Cape will ask about your, about your experiences when you came to the city, the changes that occurred in

your life once you were in the city and social support that you received, and the barriers to living a healthy life. This interview will take approximately 45 minutes to one hour. The conversation will be taped in order to make sure that we record the correct information as you said it. All the information collected will be treated confidentially. Only the researchers will have access to it. At a latter stage the researcher will come back to verify what is said in the tape and may also request that you explain certain issues further.

**What can participants expect?**

Once the research is completed, a meeting will be called and the results will be presented to you. The research will be anonymous meaning that no names will be used when writing up the report.

**Can you withdraw from the study?**

Certainly you may withdraw from the study at any time, without giving a reason for doing so. You may also refuse to answer a question should you wish to. The study is completely voluntary.

**Any further questions or complaints?**

If you need more information or you have complaints about my conduct please contact my supervisor Prof Thandi Puoane at (021) 959 2809.

If you are willing to participate in the study, please read and sign the consent form.

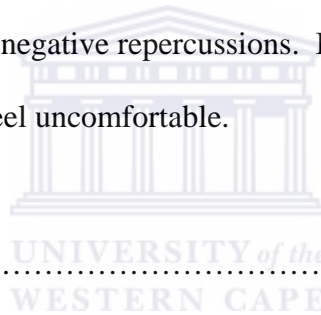
**APPENDIX 2: Consent form****CONSENT FORM**

Urbanization and Lifestyle changes related to non-communicable diseases: Exploration of experiences of urban residents who have relocated from the rural areas to Khayelitsha, urban township in Cape Town

I have been informed about the purpose and the nature of the study. I understand that all information will be confidential. I understand that taking part in this study is voluntary.

I can withdraw from participating in this study at anytime without giving any reasons and my doing so will have no negative repercussions. I also have the right to refuse answering questions when I feel uncomfortable.

Name of the participant:.....



Signature:.....

Researcher : .....

Date:.....

### **APPENDIX 3: Interview guide**

1. Tell me about your experiences in the rural areas? in terms of
  - food consumed;
  - physical activity; and
  - support
  
2. Tell me about your experiences when you moved to the city? In terms of
  - challenges or difficulties
  - support;
  - food;
  - physical activity; and
  - changes that had occurred

