The impact of culture on health

– A study of risk perception on unhealthy lifestyles in Babati town, Tanzania

Authors: Isabelle Rosén
Supervisor: Lise-Lotte Hallman
Abstract

This paper aims to determine how culture factors influence the occurrence of overweight and obesity among adults in Babati town, Tanzania. A qualitative field study in Babati was conducted in February and March 2014, to gather information and identify how culture influences health perceptions and behaviours. Then the study could identify and understand how risks associated with overweight and obesity can be averted. In order to understand health outcomes, it is important to highlight the role of culture and its influence. This essay is using a culture-centred approach to understand the health of the population in Babati. In this study, the theoretical concept of the PEN-3 cultural model has been a tool in order to identify the underling causes that lead to a particular behaviour and action. Few studies in Tanzania have focused on the perceived risk of being overweight and obese and adapted it to the ruling culture. This study has contributed to wider knowledge within the field, both locally and globally. The results show that overweight in Babati is not only caused by the increasing urbanization, a growing middle-class, new ways of labour where physical activity is not necessary needed and changes in food and eating habits. Attitudes, knowledge and perceptions issues have a much higher impact. Being overweight is often associated with perception of wealth and health, this is why many strive to achieve that ideal, both men and women. Culture has proved to have a significant role in this study. Everything that people does and what decisions they make can be linked to their cultural belonging, which ideals people aims for, food choices, perceptions of physical activity and risk perceptions about illness. Culture cannot be excluded in interventions on health.

Keywords: Non-communicable diseases, knowledge and attitudes, PEN 3-cultural model, Sub-Saharan Africa.
Acknowledgements

I would like to send my appreciations towards those who made this study possible. First of all, thanks to all the people and especially the informants in Babati town who provided valuable information and also thanks for your warm hospitality and kindness. I am very thankful to the field assistants, for all the help with finding informants, whom explained the context of Babati and also for the best assistance possible.

I am also thankful for all the help from my supervisor Lise-Lotte Hallman, who helped and guided me through the process and gave me good advise. Finally, I am very thankful to Södertörn University, and especially the teachers of the School of Natural Science, Technology and Environmental Studies, for your hard work and dedication to give the students the opportunity to visit Babati. I appreciated this invaluable experience so much, and it is something I will never forget.

Isabelle Rosén

May, 2015
### List of acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>BMI</td>
<td>Body mass index</td>
</tr>
<tr>
<td>HBM</td>
<td>Health Belief Model</td>
</tr>
<tr>
<td>HIC</td>
<td>High-income countries</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>LMIC</td>
<td>Low- and middle-income countries</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NCD’s</td>
<td>Non-communicable diseases</td>
</tr>
<tr>
<td>NS</td>
<td>Nutrition status</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
# Table of contents

1. Introduction .................................................................................................................. 1  
   1.1 Background ........................................................................................................... 2  
   1.2 Problem formulation ............................................................................................. 3  
   1.3 Purpose .................................................................................................................. 4  
   1.4 Research questions ............................................................................................... 4  
   1.5 Delimitations ......................................................................................................... 4  
   1.6 Previous research ................................................................................................. 5  

2. Theoretical framework ................................................................................................. 7  
   2.1 Culture centred approach .................................................................................... 7  
   2.2 PEN-3 Cultural Model .......................................................................................... 8  

3. Method .......................................................................................................................... 12  
   3.1 Study site ............................................................................................................. 12  
   3.2 Data collection method ....................................................................................... 12  
   3.3 The interviews in Babati ...................................................................................... 13  
   3.2 Method discussion ............................................................................................. 16  
   3.3 Analysing the material ....................................................................................... 17  

4. Findings ....................................................................................................................... 18  
   4.1 The NCD situation in Babati .............................................................................. 18  
   4.1 Cultural ideals and weight status ......................................................................... 20  
   4.2 Nutrition attitudes and habits ............................................................................ 21  
   4.3 Perception of physical activity ............................................................................ 23  
   4.4 Risk perception ................................................................................................... 23  
   4.5 Conclusion of the results .................................................................................... 26  

5. Analysis ....................................................................................................................... 27  
   5.1 Key influences and impact of behavior on health .............................................. 27  
   5.2 Focus on interventions ....................................................................................... 31  

6. Conclusion ................................................................................................................... 34  

7. Discussion and recommendations ............................................................................... 36  

References ....................................................................................................................... 38  
   Appendix 1: List of informants .................................................................................. 42  
   Appendix 2: Pictures .................................................................................................. 43  
   Appendix 3: Interview Questions ............................................................................. 44
1. Introduction

Over the past two decades, large and rapid changes have occurred in the presence of the human diet, food availability and lifestyle (Popkin et al, 2011a). For the first time in modern context, it is estimated that globally, there are more people overweight than underweight (Brewis, 2011). The increase of overweight and obesity are becoming one of the most serious social and public health problems in the coming decades (James, 2008). Overall, calculations indicate that globally more than 700 million adults will be obese by 2015 (WHO, 2011a). Overweight and obesity are common modifiable risk factors, which underlines the major burden of non-communicable diseases (NCDs) (WHO, 2014a). Globally, NCD’s kills the most people every year (WHO, 2011b). This burden is only growing, the number of societies and people affected are increasing. The spread of this epidemic shall not be underestimated, NCD’s are causing poverty and undermines the economic growth in many countries (WHO, 2014a). Heart diseases, cancer, hypertension, diabetes and other chronic diseases are often associated with high-income countries (HIC). In fact, only 20 percent of the deaths in chronic disease occur in HIC, while 80 percent occur in low- and middle-income countries (LMIC) (WHO 2014b).

Africa, a continent usually associated with starvation, now has severe problems with obesity (Brewis, 2011). The burden of NCDs in Africa is set to increase in the next decades (WHO, 2011c). The reason for the dramatic increase in obesity under the last couple of decades is hard to give an easy answer to. However, research has helped us to understand the underlying causes of the epidemic (Popkin et al, 2011a, Brewis, 2011). The contemporary rise of obesity and NCD’s is a result of globalization, rapid urbanization of rural areas with fast migration from rural to urban areas, a rapid economical and sociodemographic transition has been taken place in many developing counties (Amunaa & B. Zotor, 2008, WHO, 2011c). Other factors that affects the spread of NCD’s, is that the urbanised population are being exposed to sedentary lifestyles, unhealthy diets (as food becomes more processed with higher levels of fat, sugar and salt) alcohol intake and the use of tobacco, in combination with a decreasing level of physical activity (Mayige et al, 2011). NCDs has its epicenter in countries with a lower level of income and within the societies and populations, extra vulnerable to human, social and economic factors. Poverty increases the risk for NCDs and can contribute to the down going spiral, which forces people into poverty (WHO, 2011b). In most of the LMICs, the current systems for monitoring population weight loss and nutrition are insufficient (Swinburn et al, 2010). These countries face a variety of challenges when it comes to the increasing
amounts of NCD’s (Skolnik, 2012). Overweight policies in developing and transitional countries are often limited due to the present focus on reducing poverty, hunger and infectious diseases (Pawloski et al, 2012).

1.1 Background

Tanzania is one of the poorest countries on the planet. The majority of the population lives under extreme poverty (1,25 USD/day). The most common reason of deaths is still, infection diseases, Malaria, HIV/AIDS and malnutrition (Kwesigabo et. al, 2012, Mayige et. al, 2011). Tanzania is one of the LIC were NCD’s is expected to increase. In 2008, NCDs were estimated to account for 27 percent of all deaths in the country (WHO, 2011b). The socio-demographic and economic transition plays a big role in the rise of NCDs (Mayige et. al, 2011). NCD’s are causing illness and mortality, especially in a land with limited economical recourses and where the healthcare is to insufficient to handle the increasing numbers of patients. Diseases such as diabetes, cardiovascular and cancer is best treated with early treatment, in order to prevent the spread of the disease and also by adopting a healthy lifestyle such as embracing a healthy diet, avoiding alcohol intake, cigarette smoking and participating in physical activities.

For health care systems that lack prevention strategies for these diseases, the burden will be even greater and the stress on the system will only escalate. The health care in Tanzania needs to overcome a number of challenges, there are still more deaths from infectious diseases than NCDs, although NCDs are increasing. The lack of a functional infrastructure, human recourses and sustainable investments for healthcare leads to limited recourses for treatment of those affected by NCDs (ibid).

A deeper understanding of the cultural context of obesity is needed in order to understand the outcome of obesity and learn to interact with obesity at a community level. An interesting example of a country where levels of overweight and obesity have risen and are extremely high is Samoa, in the South Pacific Ocean. The body mass index (BMI) increased significantly among both women and men between 1976 and 2002. In 1976, 51 percent of the women were obese. In 2002, 71 percent of American Samoan women were obese, and 19 percent were also overweight, which means that 10 percent of the women had a normal BMI (Keighley et al, 2006). Modernization, lifestyle changes like a reduction in physical activity that comes with a transition away from an agriculture economy and the influence of the American culture has led to food changes from traditional fish-based food to a diet with highly processed imported food. This has resulted
in more carbohydrates, higher consumption of calories, more fat and sugar. All those factors have contributed to the epidemic levels of obesity and diabetes in Samoa. It has been shown that a large body size among adults is considered accepted. A large body size is considered beautiful and correlated with social prestige. It can be hard to change food related health behaviors when the culture has a strong influence. It was also found that people believed that food was considered as a gift and must not be rejected, feasting is a big and important part of the culture, which cannot be ignored (McCullough, 2013).

1.2 Problem formulation

In order to handle the growing burden of NCDs in an affective way, health interventions needs to be adapted to the ruling culture. Today, most professional literature is lacking the cultural model for understanding attitudes, knowledge and beliefs of NCDs within populations (Airhihenbuwa 2007a, Dutta 2007, Shaw et al. 2009). Health interventions often fail to make behaviour changes sustainable. Many believe that the problem often occurs when an individual's inability to listen and engage in various health interventions. Often, diseases are blamed on cultural practices or inefficient management, but according to Airhihenbuwa (2010) culture should be seen as an asset. In resent years multiple studies has proved that the cultural affects on health has been of significant importance (Airhihenbuwa 2007a, Dutta 2007, Shaw et al. 2009). Culture affects health in many ways and can be linked to people's health behaviours and their perception of the diseases. The perceptions of illness vary among cultures, something considered normal in one country may be perceived as an illness in a foreign country (Skolnik, 2012). In order to understand the culture, it is important, to understand what we eat, with whom and how we eat it. Eating is an expression of cultural identity, whether it is intentional or not (Airhihenbuwa, 2010). Many scientists agree that it is important to understand the culture in order to understand health behaviours. Therefor, it is important to encourage and involve cultural aspects, in order to understand the perspectives of different cultures (Airhihenbuwa, 2010, Unger and Schwartz, 2012, Skolnik, 2012).

At the World Health Assembly in Geneva, Switzerland, in 2012, the ministers representing the developing countries spoke about obesity as one of the most survive health risks and it was a high priority matter on the agenda. It was suggested that cultural related methods was needed in order to reduce the burden of obesity, hypertension and diabetes. To understand the cultures role in food consumption patterns, it is important to grasp the interaction between weight gain, obesity, diabetes and hypertension from one
culture to another and the ability to handle the matter (Airhihenbuwa et al, 2013). There are insufficient culture investments in health interventions today. Locals views and perceptions about health risks, is one step in the right direction in order to prevent overweight and obesity at both individual and public health levels. This contribution is necessary in order to raise awareness around the current situation in Tanzania, thus increasing the awareness for futures opportunities in the prevention and control of NCDs. NCDs are expected to increase in the future unless action is taken to counter the prevailing situation.

1.3 Purpose

This study aims to examine how cultural factors can influence the occurrence of overweight and obesity among adults in Babati town, Tanzania. By identifying how culture influence perception of body ideals, food choices, nutrition attitudes and habits and also physical activity, the study could identify and understand how risks associated with overweight and obesity can be averted. Few studies in Tanzania have focused on the perceived risk of being overweight and obese and adapted it to the ruling culture. This study shall contribute to wider knowledge within the field, both locally and globally. As the purpose of this study is to fill the gap in the limited scientific research about cultural determinants of health behaviour in Tanzania. In order to achieve the purpose of the study the following questions will be answered.

1.4 Research questions

- What kind of knowledge and perception does people have of the risks of being overweight or obese?
- What are people’s perceptions of healthy and unhealthy lifestyles?
- What significance does the female and male body ideal in Babati have on overweight?
- In what way does cultural factors influence health behaviours among the population?

1.5 Delimitations

This study only focuses on the context of Babati town, in Babati district of Manyara Region located in northen Tanzania. This paper examines how awareness, attitudes and preceptions about health appear in Babati. Furthermore, it has not gone deeper into how the healthsystem handles the increasing burden of NCD’s. It aims to investigate how knowlage and preceptions of unhealthy lifestyles and risk preceptions
with overweight and obesity among the population in the district. Also, observations about the doctors and health care provider’s perception of the population's awareness of NCD’s has been taken into account.

1.6 Previous research

Prevalence of obesity is increasing in Tanzania (Njeleleka et al, 2003, Shayo and Mugusi, 2011). In a study on nutritional variation and cardiovascular risk factors (Njeleleka et al, 2003) it was shown that Body mass index (BMI) was higher in urban areas in both genders and also that obesity and hypertension had increased in the urban areas compared with data from the same areas a decade ago. Also, studies point to an increase (Mayige et al, 2011). Studies that has reported about the level of physical activity among the population in Tanzania concludes that it is lower in urban compared to rural areas, thus the urban population had a higher BMI and cholesterol compared to the population in rural areas (ibid). Previous studies have focused on the prevalence of overweight and obesity linked to socio-economic (SES) and socio-demographic development. In some cases the results have shown that increased prosperity is resulting in a growth of BMI. In a study from Tanzania it was shown that obesity was highest among those with high SES (29.2%), in comparison to those on a medium level (14.3%) and low SES (11.3%). The explanation for this was that those with higher SES were found to have an increased food intake and a reduced level of physical activity because of a more sedentary lifestyle (Shayo and Mugusi, 2011). Others argue that obesity in developing countries can no longer only be regarded as a disease among persons with greater socio-economic status, obesity in developing countries also tends to occur in populations with lower socioeconomic status (Monteiro et al, 2004).

The correlation between BMI and education has in previous studies revealed different results, some argue that low education is a risk factor for obesity, whereas other studies suggest the opposite (Pieniak et al, 2009). In a study from Tanzania, that examined the prevalence of obesity and associated risk factors among adults in 400 households, pointed to that BMI was significantly higher in participants with no formal education (29.2%), unlike them with primary (19.5%) and secondary education (14.2%). Notably the BMI was increasing for those with post secondary education (20.9%) (Shayo and Mugusi, 2011). An important result, which was found in another study, was that people who were overweight were not aware of their increased risk of developing diseases such as diabetes, which in this study showed lower awareness among the obese population. (Pieniak et al, 2009). Other studies have also shown that those with lower education were less aware of the links between overweight and heart diseases.
In a study on obesity and overweight in Europe, it was found that people, who were overweight, did not consider themselves to be overweight (Pieniak et al, 2009).

The global epidemic of obesity around the world is well documented in literature (WHO, 2011b). In order to deal with the growing societal problems that overweight and obesity contributes to, it is important to understand how people think and their level of awareness of these diseases. Earlier interventions on obesity have focused on individuals risk behaviours (Adler and Stewart, 2009). Public health and health promotions often use theories of health behaviour (Airhihenbuwa, 2010). Health behaviour models is based on the statement that personal beliefs affects helth behaviours, where the purpose is to identify which underling structures that forms individuals health behaviours. This is done by examine how personal belifes and perceptions around health risks is looked upon. However, in order to do so, individuals must have control over the situation and make rational conscious choices to change their diet and physical activity habits (Adler and Stewart, 2009). At the moment there is a paradigm shift in how the intervention strategies shall be formed in order to reduce the global burden of NCDs. It has long been known that focus on the individual level should be changed to the cultural contexts and what impact it has on individuals behaviours (Airhihenbuwa, 2012). Obesity can been seen as a cultural production caught in the middle of institutions (restaurants) and systems (agriculture and the food industry), this has in many cases led to larger portions and this has slowly affected the general growth of obesity within a population (Morland et al, 2002). Previous studies shows that NCDs could be prevented if the risk factors associated with lifestyles are taken into account. Obesity is a modifiable risk factor, physical inactivity and unhealthy diets are “cultured” by physical and social environmental factors (Beaglehole et al, 2011, Sacco et al, 2011).
2. Theoretical framework

In order to understand the perceptions of overweight and obesity, it is important to highlight the role of culture and its influence. This essay is using a culture-centred approach to understand the health of the population in Babati. In this study, the theoretical concept of the PEN-3 cultural model will be a tool in order to identify the underlying causes that lead to a particular behaviour and action. In this study, the model aims to identify and understand perceptions of health behaviours, the study will use the following theoretical framework to examine how culture influence health behaviours in body ideals, food and eating habits as well as physical activity. The framework of the PEN-3 cultural model will facilitate the analysis of the findings in order to investigate in what way culture factors influence health behaviour among the community. It will also, contribute to the understanding of how the burden of NCD’s should be handled.

2.1 Culture centred approach

In recent years there has been a significant increase of research related to the cultural impact on health (Airhihenbuwa, 2007a, Dutta, 2007, Shaw et al, 2009). The increase is not only due to the greater interest in cultures influence on health, but also because researches have began to understand its importance in eliminating health problems, increase health literacy and to develop and implement affective public health interventions (Airhihenbuwa, 2007a, Swat et al, 2009). In order to be able to investigate how culture affects individual health it is important “to recognize that the forest is more important than the individual tree” (Airhihenbuwa, 1999, s. 269). It is important to understand the cultural context in order to understand and appreciate how individuals are formed and analyse how links, roles and relations (both positive and negative) in between individuals (Iwelunmor et al, 2014). This dynamic is important to make the outcome of health actions efficient and as sustainable as possible. The cultural context is also important in the design of the practice and to understand the perceptions of food, eating habits, activity, beliefs and attitudes about body size, and weight status (Dutta, 2007, James, 2004) and also the perceived need for weight control (Kumanyika and Obarzanek, 2003). Culture influences peoples behaviours outside time and space, affecting the historical, geographical, social and political outcome, which appears to either limit or encourage individuals ability to adopt healthier choices in life (Hunt et al, 2004). Therefore, a culture-centred approach is necessary to understand perceptions about health and lifestyles.
Culture in this context, is about shared common values, norms and codes that together shapes attitudes, behaviours and perceptions about weight and health through interaction in and with the environment (Iwelunmor et al, 2014). This has been shown to have a significant role in the design of health problems and solutions (Airhihenbuwa, 1995, Dutta, 2007) and it is exactly what has been investigated during the field study in Babati. One model has been dominant in order to understand the influence of culture on health, is the PEN-3 cultural model (see figure 1). To illustrate these points, this essay applies the PEN-3 model to address the impact of culture on health behaviours.

2.2 PEN-3 Cultural Model

The PEN-3 model is a model used to understand the influence of culture on health and was developed as a response to the omission of culture in explaining health outcomes in the existing theories and models of health behaviours (Airhihenbuwa, 1989). Airhihenbuwa (1989, 1995, 2010, 2012) developed the PEN-3 model and the aim was for it to function as a cultural lens and was intended for use by those who where engaged in health issues and problems. The model was developed to be used as a framework for disease prevention and health promotions in African countries (Airhihenbuwa, 1989). The model has been revised since it was invented in 1989 and has been used to manage a variety of health problems, like type 2 diabetes, perceptions of HIV stigma, knowledge and beliefs about cancer (Airhihenbuwa, 2013), and have dealt with health problems in relation to food choices (Cowdery, 2010), and obesity (Kumanyika and Obarzanek, 2003). It has been applied in more than 100 studies worldwide to explore how cultural and social context affects perceptions of health praxis and it can be used as a guide for culturally focused health initiatives (Airhihenbuwa, 2013).

In this study, the model is a theoretical framework in order to centralize culture of health behaviours, health beliefs and health outcomes. It will also be a tool to analyse the empirical material and back up the collected data for the essay. This model addresses health promotion in a three dimensional way. Each domain includes three different factors form the acronym PEN and each of those play an important role in decision making of health (Airhihenbuwa, 1992, 1995). The there domains are: Key influence on health behaviours (Perceptions, Enablers and Nurturers), Impact of behaviour on health (Positive, Existential, Negative), and Focus on interventions (Focus on Person, Extended Family and Neighbourhood). Together they form a base in order to understand health problems (see figure 1) (Airhihenbuwa, 2013).
Figure 1. The PEN-3 Cultural model. Adapted from Collins O. Airhihenbuwa, the founder of the model.

The first domain, *Key influence on health behaviours*, highlights knowledge, attitudes and risk perceptions of health problems. This domain also examines what enablers and nutures the perception on health, through understanding cultural- and social factors, values and norms, for example body ideals. These can be considered either as structural or societal. Whether they are environmental factors, medial factors or health care providers, they promote or discourage the health methods becoming effective. Family and relatives also influences efficient decision-making in the management of health problems (Iwelunmor et al, 2014). The need to centralize culture in studies on health behaviours has been shown to be significant important in researches that have used the PEN-3 cultural model. In previous studies, it was found that traditional social norms and expectations were in conflict with efforts aiming to achieve health-related lifestyle changes (Grace et al, 2008). The study showed that it was important to understand how cultural context shapes health behaviours among men and that it was important to understand how traditional views of manhood affects men's perception of their health (Abernethy et al, 2005).
The second domain, *Impact of behaviour on health*, behaviours that are positive are identified first, then attitudes and beliefs that are existential, before identifying the negative health practices, which becomes a barrier. That way, it can be determined how cultural beliefs and practices affects health and identifying which solutions to health problems that should be encouraged. The harmless ones can be recognized, and then the harmful ones that can have negative consequences on health can be controlled. (Iwelunmor et al, 2014). Prevention researchers begin to realize that focus on personal weaknesses and negative aspects is not a good path to take in order to prevent illness. Instead, it is important to focus on the strengths and exploit the personal qualities that could serve as a protection against diseases. For example, in individual behaviours, positive aspects can lead to increase healthy behaviours in eating habits, which can lead to improved health (ibid). Previous studies rewired show that regardless how the health behaviour or how the health situation is, the PEN-3 model has been effective for examining cultural practices. Furthermore, understanding how people perceive their health and how health behaviours have been influenced, based on relationships and interactions formed within the culture (ibid). The third domain, *Focus on interventions*, focus on the intervention points of entry. These appear on different levels, a personal level (ex. mothers or healthcare workers), relatives (grandparents) or neighbourhoods (communities or villages) and affect the level of knowledge and shaping individuals.

So to clarify, instead of seeing culture as an obstacle or a barrier, this approach regards culture as an asset. Because culture affects individuals' perceptions and the PEN-3 model shifts the focus from the individual to put a greater emphasis on depiction and expectations of individuals in a cultural context. Public health and health promotions will not be sustainable if focus only lies on individuals, since lifestyles and health are formed by the culture context (Airhihenbuwa et al, 2013). In a study made in Michigan about Afro-American women, it was shown that a culture centred approach when studying behavioural factors helped to promote healthy nutrition among women. Through the use of the PEN-3 cultural model, it was possible to identify the factors that were an obstacle and which factors helped women to healthier eating habits. The results from the study showed that the family system was important and it promoted healthy eating habits. It also requires a social commitment to develop and spread culturally appropriate nutrition and health programs in order to reduce the burden of obesity and hypertension in societies (Kannan et al, 2009). Culture is of great importance for how individuals interpret and handles nutrition and the risks linked to it. In another study about the variation of the presence of coronary heart disease among Japanese men in three different regions around the globe, it was found that the occurrence was lowest among the male population in Japan, Hawaii came on second place and Japanese males living in the US had the
highest prevalence of coronary heart disease. The same population group had been studied but the geographical place and culture has been varied. This shows that depending on where a person lives, the health outcome can vary and this is of major importance in order to achieve health results within a population (Marmot and Syme, 1976, Singer, 2012).
3. Method

3.1 Study site

Babati, a growing town in Babati District of Manyara Region in northern Tanzania. The location were the study was performed is of interest, as Babati town at the moment is undergoing a rapid urbanization. The study focuses on people who are living in growing areas, where NCDs are increasing the most. Many people have had a change in their lifestyle. Sedentary jobs have become more common, food and alcohol have become more accessible to the greater mass, resulting in a reduced physical activity among the population. Babati town has a population of around 93 108 habitats. In Babati there is one regional hospital, several small private clinics in the center and health workers active in the field.

3.2 Data collection method

The study use a qualitative research method, which focus on how individuals interpret and perceive reality and is therefore considered best for this study. Social reality is constantly changing and individuals can alter and construct their reality (Bryman, 2011). Also culture is never static, it is constantly changing (Airhihenbuwa, 2013). This research strategy also has an epistemological position which means, putting emphasis on understanding the real social unity by studying how the participants in a particular environment interprets its reality. An ontological position, described as constructionist, where social characteristics are formed through the interaction between individuals (Bryman, 2011), is useful in this paper, when the study will examined the expectations of the individual in a cultural context.

Through a cultural centred perspective, this studie will provide a bottom-up strategy about how culture affects health behaviors in Babati town. In order to get a deeper and more nuanced picture locally of the situation in a city with rapid urbanization and changing lifestyles, primary data was collected in Babati between February and Mars 2014. Interviews were conducted with adult key informants, through semi-structured interviews. In addition, a top-down strategy will be given in order to get a clear picture of the current situation in the hospitals of Babati town. In order to obtain broader background knowledge of the current situation of obesity and NCDs in Babati as a whole, a small number of interviews were hold by other student colleagues who were examining the NCD situation in Babati. The interviews were situated in Babati town at one regional hospital, at three private clinics, with health workers, at the district council and
on several different pharmacies. Information from their interviews has been useful in this study and these observations have led to valuable information about expert’s (doctors, health workers and pharmacists) opinions and their perceptions have been of interest in order to get their view about the awareness among patients with NCDs.

In the initial phase of the study, scientific peer-reviewed articles on the subject have been studied, to get a pre-understanding for the context. Previous research in the field of how culture effects health outcomes and risk perceptions in Tanzania have been examined and taken into account. The peer-reviewed scientific articles were retrieved from the database of Södertörn University, Söder scholar, Google scholar, and Web of Science. Through some of the articles reference lists, it was discovered that more relevant articles could be found. Keywords that have been used in various combinations were: culture and health, risk perception, overweight, obesity, NCDs, cultural ideals, health behaviour, PEN 3-culture model, Tanzania, low and middle-income countries and global health. Numbers published in public reports from the World Health Organisations (WHO) and town council in Babati were also used. These have been used in order to get a pre-understanding in the context of the current situation in Tanzania. These are not scientific reports, although the data from these areas can give an indication of the current situation. Although, it should be taken into account that these statistics from the town council in Babati are among the first to become accessible. Earlier it has been difficult to obtain these numbers, because it has been an underreporting of the health status and the access of reliable data has been insufficient. This study has therefore taken the reliability into account, which has considered in these reports and also compared with other scientific sources, in order to identify the most reliable information.

3.3 The interviews in Babati

The research is limited within the field of the perceived risk of being overweight and obese and how the attitude towards healthy lifestyles in Babati and Tanzania is looked upon. Therefore semi-structured interviews were of interest, with four themes as a starting point and with open-ended questions so that the respondent could communicate their opinions and perceptions by themselves. The semi-structured interviews were conducted during 13 field days onsite in Babati town, Tanzania. All respondents lived in Babati town. A total of 24 people were interviewed, 12 women and 12 men. It was a conscious choice to choose half men, half women, because the study is intended to describe both women's and men's perceptions. The selection group were adults in Babati town, age between 20-65 years. The respondents
had different social backgrounds and different education levels, from a primary to a master level of education. They had different income levels and different professions, such as small scale farmer, welder, shoemaker, cook, tourist guide, teacher, business women, advertiser on a NGO, development worker, house wife, pharmacists, restaurant owner (Mama Lishe) and doctors. It has been important to include all the above mentioned types of factors, because previous studies have shown that these factors can affect education levels, awareness and attitudes related to health issues. As well as different nutritional status, attempted to obtain a spread on respondents, both slim and corpulent people, which was of interest because perceptions may vary.

All respondents were asked the same opening questions in order to cover important parameters, such as age, education level and profession. The interviews were based on a number of themes, the themes were prepared in advance and provided as a template in the interviews. Areas discussed during the interviews were: culture ideals and weight status, nutrition attitudes and habits, physical activity, knowledge and perceptions about risk with overweight and obesity. This was a successful approach for keeping an open conversation without missing important aspects, and also to ask follow up questions that arose during the interviews (Bryman, 2011). The interviews began by showing pictures of different body sizes. First a pictures of bodies with the same sex where shown. They were given the pictures so they by themselves could point out and explain their reflexion of the pictures.

![Picture on women](image1.png) ![Picture on men](image2.png)

*Figure 2. Pictures that was shown for all respondents in the beginning of the interviews (Webpage: Hawaii Naturopathic Retreat).*

It felt like a good opening, people laughed and the atmosphere was relaxed. This approach helped the informant to share their views and perceptions about what a healthy and unhealthy body were. By studying the picture, they could describe which associations that came to them and also explaining why they thought
so. After that, a picture on the opposite sex was shown. The respondents described how their view of the opposite sex was, what was considered to be healthy, unhealthy and appealing. Also, what were the expectations around body ideal among the population within the community in Babati. After that, questions were asked about perceptions of changes in food, eating and drinking habits in Babati town, following a reflection on physical activities. Last knowledge and perceptions about risks with overweight were discussed.

It was easy to find informants, most were forthcoming and appreciated to be interviewed. The interviews lasted from 30-60 minutes and most of them went well. The majority of the interviews contributed with relevant information about culture and health. The interviews were held at locations chosen by the informants, to make them feel comfortable and relaxed, for example in their homes or at their workplace. None of the interviews were recorded, notes were taken during all interviews. In most of the interviews an interpreter was needed. The field assistant translated to the respondent and then back hence. There was time to write small notes, thoughts and observations during all the interviews. Afterwards the conversation were written down on the computer and analysed when the information was new. All interviews had the approval of the respondents and total anonymity was granted.

From the beginning the idea was to interview middle-age men and women in Babati town, as they are in the largest risk group for overweight and NCDs. However, two younger informants were interviewed and it turned out that their perceptions about body ideals were somewhat different from the older ones. Therefore, it was also interesting to get the younger informants perceptions of body ideals and what a healthy lifestyles is, according to them. It gave a wider understanding about the population’s awareness about risks with unhealthy lifestyles. Therefore, the selected group was adults in Babati town, aged between 20-65 years. The selection group of informants was also made with the help of field assistants, who knew Babati town well. Men and women were selected, with different education levels, different types of professions and incomes and living conditions and different nutritional status. The informants nutrition status was noted (from underweight to obese), which was listed on the image scale above and has been of interest when the respondents answers was analysed. It was interesting to see how a corpulent person and a skinny person perceived weight and health.
3.2 Method discussion

The findings and data collected from the interviews in Babati should not be generalized, it can only give an indication of how the prevailing perceptions about the risks of obesity and how the cultural ideals among adult is. The small selection of respondents obviously cannot answer for how everyone in Babati perceives their reality and situation. As this study is a qualitative study, the aim is not to generalize the results (Bryman, 2011). However, this qualitative study has a quantitative component in the presentation and analysis of the empirical data, because a summary of what the majority of the informants said has been made. It is also important to keep in mind that many respondents have their roots in approximately the same context and social-economic background, which can have an impact on their perceptions. The study is aiming to target different socio-economic backgrounds through the respondents. Although, it was difficult to find an exact spread under the circumstances and time limit during the fieldwork.

The approach for open discussions of overweight and health related factors with semi-structured topics and questions were a method that worked well in this study. As mentioned before, the use of pictures in the interviews was a convenient way of starting an open-minded discussion with a foreigner. In most cases, the atmosphere in the interviews was not perceived as stiff and formal. This can be an advantage when trying to obtain a person views, perceptions and knowledge. The pictures that was shown for the respondents, was chosen in order to get a natural pictures as possible, therefore a drawn picture was chosen. This meant that the respondents would not be affected or distracted by outside factors like appearance, a persons skin tone and personal attributes. As the interviews were held in places chosen by the respondent, on their workplace or at home, it sometimes happened that family members were present, or that a colleague, neighbour or just a curious person was present in the background of the interview. In some cases this might have had an impact on respondents' answers. Nevertheless, the perception was that the respondents were honest in their replies. The translation from Swahili to English and vice versa could be a bit problematic sometimes. Communication and language barriers can occur when an interpreter is used, because the researcher does not know the language itself. Therefore it was important to clarify the aim of the study with the field assistant. It was important to choose which words that should be used in the translation, when the study is based on the translator's knowledge and performance in order to get the right information that are related to the study. Another limitation was that it was sometimes difficult to initiate a discussion when using an interpreter, it was easier to discuss in English.
The methodology of the research have been described above in order to facilitate and illustrate how the study was conducted and thus promote the reliability and validity of the results. Factors such as gender can have a significant impact during the interviews, a male researcher or female researcher can be treated differently depending on whether it is a male or female respondent, also even if there is a male or female translator present during the interview. In some cases, a male or female translator can either promote or be a barrier between researcher and respondent. In this study the researcher was able to choose gender of the translator depending on the situation, either a male or a female translator was used. In addition, the author's own perceptions about the subject as well as respondent's answers may have an impact on the study, which has been taken into consideration. The study must also have an objective perspective on the collected material. The study also takes into consideration that some choice of words can be perceived differently depending on the person, for example, ”a moderate body”, the meaning of body definition can be perceived in different ways depending on the person. BMI as a measuring tool is also a problematic measurement to use, but BMI are the most common measurement to estimate adult overweight and obesity globally and also a very standardized measurement.

3.3 Analysing the material

The PEN-3 cultural model has been used to analyse the data collected and will help to interpret qualitative data. By using the three components of the model, Key influence on health behaviours, impact of behavior on health and focus on interventions, these components becomes a tool in order to filter through the empirical material gathered and define, separate and delineate the material. The PEN-3 model is well suited to use as a tool in this study, as it is about exploring the origin source in order to understand where the problems lies. It is important to understand risk behaviours, social networks, and the environment in order to be able to analyse the problems of overweight and obesity. The model has been interpreted and adapted to this study. In a study such as this, it is important not to restrict its results to a model but one should look beyond the theoretical framework to analyse the key aspects that emerged in the study. Since the aim was to analyse primary data as objectively as possible and not be affected by previous interpretations.
4. Findings

The following chapter presents the empirical data collected through the interviews and observations during the field study in Babati. To begun with, an initial description of the overall situation of overweight and NCD’s presence in Babati will follow. First trough a top-down perspective to get a picture of how the hospitals, doctors and pharmacists who work with these diseases perceive the current situation in Babati, and then also a description of how staff perceive the awareness of patients about these diseases. After that, there is a section with empirical data from interviews with male and female respondents. It will be divided according to the four themes of the interviews assumed. Cultural ideals and weight status, nutrition attitudes and habits, physical activity and at last risk, perception with overweight and obesity. In the presentation of the data regarding cultural ideals and weight status, the perceptions of the body will be described based on the picture that was shown during the interviews. Where WHO’s definitions for BMI will apply to what the informants said about the different body sizes during the interviews. The bodies are defined by the following, from the left, Underweight, Healthy BMI, Overweight and Obese. In the following paragraphs, unless otherwise stated, the majority of the informants expressed the following.

![Picture on women](image1.png) ![Picture on men](image2.png)

Figure 2. Pictures that was shown for all respondents in the beginning of the interviews. From left: Underweight, Healthy BMI, Overweight and Obese (Webpage: Hawaii Naturopathic Retreat, 2014).

4.1 The NCD situation in Babati

To begin with, the general perception doctors in Babati has, is that overweight and obesity are increasing rapidly. The increase is partly due to the fast urbanization and a growing middle class. Different kind of food has become easier to access for more people, which has led to changes in eating habits. Also, the
alcohol consumption is higher, because it is more accessible nowadays. People's physical activity levels have decreased, as there are less physical activities in work. An NCD specialist doctor said that NCDs were previously only a problem in the wealthier population, but today it affects all social classes and it is increasing the most among poor people because of improved living standards. Previously, the risk group of overweight and obesity was middle-aged men and women, but today also younger people from age 25 are in the risk group. The prevalence is also more common among women. According to several doctors, the patient’s awareness of the risks associated with overweight and obesity are low. Most patients are not aware that being overweight can lead to diabetes, hypertension and heart diseases, not even the health workers. Many people think they have a “normal” body size and are not at risk for developing diseases. The doctors believe that patients get aware of the risks first when they come to the hospital and get diagnosed.

Obesity and the associated diseases, like type 2 diabetes, hypertension and heart problems are becoming an increasing social problems in Babati. While observing student colleagues interviews at hospitals in Babati, it was obvious that resources to handle NCDs and their complications are scarce and that other diseases are prioritized. The diseases considered to be more important right now are, malaria, HIV, pneumonia and diarrhea diseases. Several doctors believed that NCD’s should be prioritized more, because it is increasing. At the moment there is a lack of resources, medicine, trained personnel, equipment and not enough capacity to handle the burden and evaluate the patients. The majority of pharmacist interviewed agreed, there was not enough medicines. Diabetes patients are not given the insulin they need, instead they are eating tablets, which is a contributing factor to that the majority of persons diagnosed with type 2 diabetes dies. There are no national or regional prevention guidelines for the increasing burden of NCD’s. Although, doctors desired a greater focus on these diseases and they are aware of the difficult situation. When patients are diagnosed they are informed about the diseases. The doctors give them recommendations of how to improve their food and eating habits, however it is not effective enough. Unfortunately in many cases it has already gone too far and it is hard to avoid the burden, which leads to many fatalities.

---

1 Interview: DI-NCD Specialist Doctor at District hospital, Babati.
2 Ibid.
3 Ibid.
4 Interviews: PH1-Pharmasists in Babati town.
5 Interview: DI-NCD Specialist Doctor at District hospital, Babati.
6 Interviews: DI- Doctor at Private Health center, Babati and NCD Specialist Doctor at District hospital, Babati.
4.1 Cultural ideals and weight status

The perceptions among the female informants are that a woman should look like the overweight women on the reference picture that was shown during the interviews. The informants considered that body as the healthiest one, because they think it is looking healthiest. They suggested that a big body equals a healthy lifestyle. The first two bodies on the reference picture, the underweight and the healthy BMI, is considered by the informants as sick and unhealthy. They associate these bodies with diseases such as HIV/AIDS or TB. The majority of the women talked about the perfect body ideal, it is to be moderate or average, they describe it like, not to “fat” not to “thin”. This is of course a matter of definition, and differs between individuals. But according to most of the respondents, a “moderate” woman is a woman who are “bigger built” and pointed on the picture which was the overweight women. The perception among female informants is that many of them consider that the community expects a woman to be like the overweight women in the picture. Several of the male informants also said that a woman should look like the overweight women on the picture. They called it "the African body". “If a woman is curvy, have big breast, butt and hips, that is the optimal body ideal for most of the men”⁷. Another male informant mentioned “Many women aged between 20-30 have begun to take a chines herb, a medicine that makes her curvy. She gets large breasts and butt and many women strive to achieve that kind of body”⁸

The majority of the male informants believed that the man with healthy BMI, on the reference picture were the most healthy ones. Most of the respondents thought that that body ideal in Babati was between the healthy BMI and the overweight man⁹ on the reference picture. The majority of the men said that now one wanted to be the man whom looked underweight, because everybody thinks that man is poor, working hard with the body and cannot afford to eat food. While showing the reference picture during the interviews the informants often associated the overweight and obese man with a rich person that could eat balanced food. Most of the male informants considered the majority of Babatis men to be thin but the ideal is to be more moderate and many strive for that ideal, this was more often seen among the men with a lower level of education. When female informants expressed their view of men, most of them believed that the Healthy BMI figure in the reference picture, were the healthiest one and they also thought that men should look like that. Many women also mentioned that it is important that a man can “perform”, as women expect that men are capable of working on the farm and be able to lift heavy loads. Both male and

⁷ Interview: MI- Male informant.
⁸ Interview: MI- Male informant.
⁹ Ibid.
female informants said that the overweight and obese man in the picture, looked like an office worker and that richer people look like that. Some of the older women mentioned that it is important to have a man who is bigger built, as it shows that he has a lot of money and can support a family.

The answers differed, depending on the level of education. Generally, those who were less educated, which was the majority of the respondents, answered that if a person is thin, it is associated with poverty, diseases, and that the person has difficulties in his or her life. A large built person is according to these informants usually a rich person, satisfied with life and can afford to eat a lot of food. Having that said there was a few exceptions, a highly educated male informant said: “If a person is obese, many people in Babati believe that this person is successful, these people believe that this body is normal and something to achieve”\textsuperscript{10}. He considered these people uneducated and that it was mostly older people that had that perception. Another older male respondent, also with a high education said:

“In the past many believed that if a person have a big body structure, this person was healthy. People are generally more aware of health issues today, the school has played an important role. Most people are finishing form four in secondary school, previously people just went to the standard seven in primary school. There is greater awareness today, society and government makes people understand. Media also plays an important role, and hospital, health centres and Ministry of Health. Globalization and access to the Internet contributes to public awareness”\textsuperscript{11}.

4.2 Nutrition attitudes and habits

The majority of the respondent’s believed that food and eating habits have changed in Babati, in recent years. The food is becoming more accessible, the availability is getting better and people are eating more. The growing middle class has also led to food and eating habits changes, and there is also a higher alcohol consumption today. Previously, many ate twice a day, in the morning and in the evening, but today it is more common with three meals per day, as well as snacks between meals. The biggest changes in terms of food, is that the food has changed from natural and traditional food to more processed food, foods with additives, factory produced food, and much of the food is no longer locally produced. Earlier people cultivated everything themselves and worked with the body, today it is more common with machines that

\textsuperscript{10} Interview: MI- Male informant.
\textsuperscript{11} Interview: MI-Male informant.
do the work. The perception of unhealthy food differed somewhat from person to person, but recurring products which was mentioned by the informants where: different sauces like tomato sauce, oil, fat, not natural food products, fried potatoes, rice etc.

For most people in Babati, it is difficult to store food for a long time, given that many households do not have any storage possibilities most of them does not have a fridge. Therefore many people eat a lot of leftovers and the food is eaten during the day, to avoid throwing food away. Both female and male respondents agreed that the woman of the household cooks the food. The male is usually the person in the family who buys the food from the market, or from shops or the butcher. According to several male respondents, the cultural habit is to dine with guests, friends, colleagues, with someone who runs guesthouse or a restaurant, a Mama Liche, or in someone's store. Often before going home to the family, they usually stop in the market.

“The market is an important meeting place, to buy food, talking, socializing. I often stop somewhere and share a bite to eat, drink beer and it can happen several times in a day”

Through observations during the weeks in Babati, it was revealed that the portions were usually very large, often mountains of food on the plate. Many believed that it was healthy to eat a varied diet and many believe that they also did. When eating habits was discussed it was revealed that the informants eat Ugali (maize porridge) almost everyday, added with different types of ingredients like vegetable’s, chicken and so on. According to the majority of the informants, it is a perfectly balanced diet. It was also noteworthy that there was basically no respondent mentioned that potato chips, soda, cookies, candy, white sugary bread etc where unhealthy. This type of food is available in many stores but they do not appear to eat such food. Basically all said that Ugali is a healthy food, because it contains vitamins and minerals. Further healthy food identified were, corn and beans, vegetables, rice and beans, food without oil, milk, meat, fruit, boiled food, bananas, cassava, potatoes. Most of this food are including in their traditional dishes. Many talked about “natural food”, i.e. “the food you ate before the pre-industrial produced food came”. A balanced diet means for most of them Ugali, they eat it most days of the week, added with various ingredients such as spinach, vegetables, meat, chicken and beans. The perception of other food cultures like the European kitchen was very low. The majority of the informants had no idea what European food culture meant.

12 Interview: MI- Male informant.
As good as, all respondents agreed that alcohol consumption in Babati has increased in recent years, people are starting to drink earlier at younger ages, from 12-18 years. They expressed that alcohol is easily accessible, many people drink a lot, many of does people do not have jobs and are mostly men, the informants said that people gets big stomachs of it and age prematurely.

### 4.3 Perception of physical activity

The informant’s spoke of changes in the physical activity among people, the population of Babati had become more “fat”. The reason is because the technology has changed and also the work tasks. Because of this people does not move the same way as before. In summary, the typical physical activity consists of walking to and from the work and to the market. The female informants gains their physical activity or “exercising” from working with their small scale farming, when they carry water, washing, cleaning, cooking, working or taking care of the kids, etc. The first response from most of the participants on the following question, *“what happens with your body if you are moving or exercising?”*, where that they “felt sweaty and tired”. Positive responses about exercising from the informants was that the “body becomes more relaxed, flexible, stable, not heavy and lazy”. The exception was one female teacher whom said that “the body could handled illnesses like malaria better and if you exercise you will become more healthy and fit”. When a question of what happens if a person is disabled was asked, the responses was that “you can get diseases like hypertension, diabetes, you become tired and sick”, “you could have leg problem”, “heart problems, the body is unable to take care of diseases”, “fever or maybe die”\(^\text{13}\). Two younger male respondents were exempted from the others and said that they sometimes tend to work out, by running in 15-20 minutes and lift weights or boxing\(^\text{14}\). Many female informants expressed that it is important that a man can perform, because he have to work on the farm and be able to lift heavy things.

### 4.4 Risk perception

In general, the informants had good knowledge of the risks with to little exercise and that it could cause diseases. Many informants stated: *“Inactivity, can often lead to obesity*”. Many of them knew it could be dangerous for a person to be obese. *“Being obese can lead to diseases, as an overweight person cannot manage to move...

\(^{13}\) Interviews: Several male and female informants.  
\(^{14}\) Interviews: MI- Male informants.
and therefore the body cannot take care of diseases.” The most common diseases mentioned were, diabetes and hypertension, some informants also said heart diseases and leg problems. These diseases were in most cases related to little physical activity. To clarify the situation in Babati, inactivity is not about one person not working out. In this context it is more about, for example, work on the family’s farm, household chores such as washing, cleaning, cooking, going to the market or walking to and from work, etc. Almost no one expressed that a combination of little physical activity in combination with unhealthy food can lead to diseases. Except for one man whom differed from the rest:

“It depends on the person, everybody are unique, some are bigger by nature but it’s the combination of too much carbohydrates, fat and no physical activity, you must eat in small quantities.” Another informant also differed from the others said “Earlier we thought that a big person was healthy but today we are better informed, government and society makes people understand, now we are more educated”.

Regarding the availability of information surrounding nutrition, physical activity and general knowledge of health in Babati. The informants said that they get health information from family, relatives, they hear about it in the neighborhood or at community meetings. Several women said they are sharing information with neighbors and other mothers within the community. If a person was diagnosed with diabetes or hypertension for example, they told the others about the recommendations given to them. More physical activity and healthier nutrition was typical recommendations. Media also reports about health, for example on the radio, in the newspaper or on the television. Regarding diabetes the risks surrounding the disease and how to survive once affected is often highlighted. Media also reports that obesity can lead to hypertension and heart diseases. The informants also get health information from doctors at hospitals. Only one informant mentioned the church as an information source. Most agree that the availability for such information must be better, today it is too hard to get the right information. Almost no one said that they learned about it in school. Several informants suggested that the information about NCD’s was something they had to actively learn for themselves, if they where interested about it. It is not easy to find information about how to eat and what types of nutrition that is healthy or not. The empirical data shows that, everybody has their own perception of healthy and unhealthy food, it seems that they have been

---

15 Interview: FI- Female informant.
16 Interview: MI- Male informant - highly educated.
17 Interview: MI- Male informant - highly educated.
taught differently. Almost all of the informants said that that Ugali was their first choice for healthy food. Examples of statements about healthy nutrition: “I have heard that rice is unhealthy because it takes a long time to measure, which results in bigger portions”. Some informants have mentioned “sugar, carbohydrates, industry made chicken and pasta as unhealthy”. Some of the informants said, “I believe that there is no unhealthy food in Babati”. One female respondent said “you must use oil in the food otherwise it is unhealthy”. A young male respondent stated, “Unless ginger is used when cooking meat, it is very unhealthy”. Only one older man said, “Everything that is too much becomes unhealthy”.18.

18 Interviews: Several male and female informants.
4.5 Conclusion of the results

To summarize this, the prevalence of overweight and obesity has increased rapidly in Babati. The increase is caused partly by the fast urbanization, with a growing middle class, resulting in changes in food and eating habits, and also a higher alcohol consumption, together with lower physical activity’s caused by not working with the body in the same way anymore. But according to doctors the major problem is the patients perception, those how seek help for diseases linked to overweight and obesity are not aware of the risk surrounding it. The say that the patients concede themselves to have a “normal” body size, and do not believe they are at risk of developing diseases. Here, a summary of the findings follows:

- The perception of “normal” bodyweight, for both men and women is above what is considered to be healthy.
- The body ideal and the norm for women is to be overweight, men should be slightly above normal weight.
- Overweight was associated with prosperity and health therefore many strived for that ideal.
- Associations with a thin body were often poverty and diseases.
- Cultural body ideals have a big impact on overweight.
- General knowledge about healthy nutrition was relatively low.
- Eating habits have changed during resent years today food is more accessible resulting in larger portions and people eat more often.
- Physical activity was defined as everyday chores such as of household routines, walking to and from work or grocery shopping and working with small-scale farming.
- The majority is aware of the risks of being overweight or obese, diseases such as diabetes and hypertension if often mentioned. Although the boundaries for what is considered to be overweight and obese is slightly higher than what WHO consider being a healthy BMI.
- Information regarding health is spread amongst family, friends, neighbors, community, health care, hospitals and through media.
5. Analysis

This analysis will be structured in the three dimensional instalments of the PEN-3 culture model. The first domain, *Key influence on health behaviour*, will identify knowledge, attitudes and perceptions of health and understand how these occur. This domain also analyzes what enablers and nurture the perception on health in Babati, through understanding cultural- and social factors, values and norms, for example cultural body ideals. Environmental factors, media and health care providers will also be analyzed. The second domain, *Impact of behavior on health*, has been integrated in the first one, to provide an analysis of it, by identifying the positive, existential and negative aspects that influence health behaviours. The last domain, *Focus on interventions* and will analyze how cultural identity is shaped and tells us what individuals are influenced by in their environment, in order to understand how health outcomes can be effective.

5.1 Key influences and impact of behavior on health

The findings mostly indicate that the level of knowledge of healthy food was relatively low among the informants. They majority identified Ugali (maize porridge) as healthy food, “because of all the vitamins and minerals”, unfortunately, it contains a lot of carbohydrate, which is not good for your health in large quantities. Consistent with Airhihenbuwa (2012), Iwelunmor (2014) and James (2004), within the context of nutrition, concluded that Ugali is a positive and existential nutrition, eaten by the majority of the population in Babati town, which indicates that is an important meal in their culture. Participant’s positive actions and beliefs, now matter how small they are, need to be acknowledged, affirmed and encouraged. Cultural and traditional practices with positive health outcomes need to be identified and reintroduction. Thereby, the culture will be involved in the general development of knowledge and meaning (James, 2004).

However, it was concern that several informants did not consider any existed unhealthy food in Babati, this is an indication of a negative impact on health. The findings mostly indicate an increase in factory-produced food. The majority of the informants agreed that processed food is unhealthy and also that it was better when the food was locally produced and when the food was made from scratch. Many other LMIC are having trouble with the increase in consumption of fast food, but that is not the case in Babati. Previous, the population cultivated their own food, today they buy ready-processed food instead. Through the field study and observations, noted that eating habits has changed in the recent years, the portions eaten are often very large and people are eaten many times a day. It was stated by one of the informants, a
middle age women said, “Earlier, people only ate rice and stews for celebrations, today it’s something you eat all the time, people are better off, and also eats more”\(^{19}\). Environmental factors are also important to keep in mind. One problem highlighted was the ability to store food, many have no access to refrigeration and therefore it is not possible to save food. The result of this is, that food must be eaten in a shorter period of time and there might be a reason for larger portions and for several big meals a day.

During the field study, it was noted that people were very proud to show their traditional dishes, they wanted to show how to cook them and invited happily everyone around. On several occasions, the informants said “I invite you”, which means that you are welcome to eat together with them on the same plate. Individuals are eating the way they do to stay connected to the Tanzanian tradition and culture. Because individuals have a need to feel connection to a social group and eating certain food to feel connected to that group (James, 2004). The traditional Tanzanian food cuisine tends to be high in carbohydrates, it is a lot of fat in their meat, and the portions are, as previously mentioned, really big. The norm is to be “fat”, this results people to gladly eat a lot of food, which could contributes to overweight and obesity. Negative behaviors are beliefs and actions that are identified to be harmful to health, these behaviours need to be understood within their cultural, historical and political context (James, 2004). The negative behaviours identified during the field study in Babati included, a high intake of carbohydrates for example Ugali (maize porridge), pillaw (a rice dish), Cassava (similar to potatos), potatoes and a lot of fat in their meat, and also that they uses a lot of oil when cooking. Beliefs, attitudes and health behaviours differ between the “long term” and “short term” factors. The first one is historically and rooted in tradition and culture and has been around for a few generations and usually harder to change, for example, healthful eating means giving up culture and traditions. The older generation are often more difficult than younger ones to adopt new healthy behaviours.

The existential factors are those cultural beliefs and behaviors that are domestic for a population or group and do not cause any harmful health consequences (Iwelunmor, 2014, James, 2004). These beliefs may not have any scientific evidence and may not be understood by outsiders, but that is how the society looks works. The existential behaviours identified during the field studies in Babati, is that virtually none of the respondents were doing exercising. However, that kind of physical activity performed is to take care of the household, like washing, cleaning, cooking, fetching water or going to and from the market or going to or

\(^{19}\) Interview: FI- Female informant.
from the work. In relation to the empirical data that have emerged, it should be mentioned that many people in Babati living a very harsh life and that it is a hard work to take care of the household chores, it is a form of exercise, the body is exposed of hard work during the whole day. However, most of the adults were aware of the importance of physical activity for the health and also aware of the diseases that occur in case of to little activity. In general, exercising is not a culturally thing to do for the population in Babati. Many people tought it was stange when some of our students were out and running along the roads. Comments like “why are they doing that?”, arose on several occasions. For prevention strategies in the future, it is important that the nutrition and physican infomation is culturally relevant and specific for the population, in this case the Tanzanian population, otherwise, the outcome will not be positive.

The findings indicate that the majority of the adults were aware of the risks with obesity. The risks vary, but the most frequent responses were diabetes, hypertension, heart diseases and leg problems. However, these risks were usually related to wheter moving or not. There were few who mentioned that unhealthy food could be a contributing factor to diseases. Knowledge about risks with obesity, had the participant received from different types of media, for example televison, newspaper and radio reported about the risks associated with it. Many participants trust the media, it is a positive factor that could be a spreader for healthier behavior. There are clear signs of differences in answers depending on the level of education, those with higher education were often more well informed about the risks of overweight and obesity, than those with lower education.

Overall, the majority of both male and female respondents considered that a woman should look like the overweight women on the reference picture. According to them, this body was considered to be the healthiest and it was a “normal body” in accordance with the ideals of Babati. Most of the male respondents considered that a woman should have “the African body” and also women themselves strive to get that body. When it comes to men's body weight, the ideal is not to be as large as a woman should be, but he should still be strong and heavy. A common attitude among the informants was “a man with a big body structure, is a man who has a good life, he is successful and that is what you strive for. A thin man associated with poverty and that person is possibly sick.” The majority of female respondents did not think a man should be overweight but they considered that it is important that a man can performe, then he can perform and do heavy work with the body. Some older womens were exceptions, they considered that it is important to

---

20 Interviews: Several Male informants.
find a man who is fat and overweight, it indicates wealth and it is important, as he can support a family.

Cultural norms and factors and also lay beliefs contributes to the current situation in overweight i Babati, which further compound the poor health seeking behaviours (Mayige et al, 2011). Obesity is culturally embraced and perceive as a sign of both health and wealth in Babati. The empirical data indicates that people in Babati perceive a corpulent person or an oververignt person with high status. Because weight indicates that a person is well off and can afford to have a decent life. A thin person associates with poverty and diseases, therefore many strive for a big body structure.

It is possible to see a difference in perception, those informants with low education level, perceived the current context as described above. While the respondents who were more educated, a large body is not something to strive for, because of its unhealthiness and danger to develop diseases. These participants believed that most of the older population in Babat lacks information to consistently make healthy food choices. However, these people do not consider themselves unhealthy. According to them, their bodies are normal and many people strive for that body. Several participant with higher education believed that people today are in general more aware of the risks of obesity. “The school has played an important role and the society and media also makes people understand”. They also believed that Globalization and access to the Internet contributes to public awareness. The parallels that can be drawn, is that perception may vary depending on the level of education. These aspects affect obviously the way people perceive body ideals in the community and affect the health outcome for the population.

However, it should be mentioned that most of the informants, regardless of education, agreed that if a women or man is too thin, she or he is perceived as poor and sick among the community. In general, a slender body is often linked to HIV. HIV is deeply rooted in their history and a thin person often are associated with this disease, therefore it is understandubul that no one wants to look like that. In the long run, this approach will be a great harm to how the health outcome develops, when people strive to have a body that leads to death because of all the diseases that arise.

This study has shown that prevalence of overweight and obesity was higher among the female informants, which is consistent with previous studies done in Tanzania (Shayo and Mugusi 2011). Women strive to look like an overweight woman, if it only depends on how the cultural ideal of women looks like, is hard to say, but it seems to have a big impact.

Doctors in Babati perceived that patients visiting a doctor and being overweight or obese not are aware of the
risks associated with it. They expressed that they have a "normal" body size, and
are not at risk for developing the disease. After interviews with local people, it was found that their own
body images were consistent with what the doctors said. The majority believes that the overweight body on
the reference picture has a normal body size and looks healthy. Several of the informants who were
interviewed were in the same weight class as the overweight or obese body on the picture. However, they
believed or did not perceive that they were at any risk for developing diseases that high weight contributes
to. This indicates that their perception of being overweight is slightly higher than what is healthy and
normal.

5.2 Focus on interventions

Earlier in this study culture factors and their influence on perceptions, attitudes and knowledge related to
health was identified. The following chapter will analyze what individuals are affected by in their
surrounding. Then recommendations for which input health interventions should have in order to
capitalize from the ruling cultural context so that the interventions becomes effective and long lasting in
the long term. Because the ruling norm and ideal within the society is to be overweight, these cultural
factors must be taken into account in the development of interventions. More education and information is
needed about what normal weight is and when weight is starting to affect the health in a dangerous way.
Since many did not consider themselves to be at risk, this is something that should be noted. The status of
being overweight still remains among the informants with a lower level of education. Those with a higher
level of education have a different view on status and overweight shows that more education on this matter
is needed.

Women could be good targets in order to implement healthy eating habits and knowledge because they are
primarily responsible in the family for preparation and cooking the food. The woman in the family decides
what the rest of the family is eating. The majority of the female respondents were corpulent, this affects
what future generations outcome will be. As previously mentioned, in order to understand the influence of
culture on health it is important “to recognize that the forest is more important than the individual tree”
(Airhihenbuwa, 1999, s. 269). During the fieldwork it was shown that they eat together with friends and
families, many share the same plate and they eat with their hands together and at the same time. The
mothers are also concerned with the families’ health and during the field study the mothers in the families
were talking about how they share information with neighbors and other mothers within the community.
Friends, relatives and neighbors are responsible of health and nutrition information and also important in influencing health-related decisions.

Although there are food myths of what is considered to be healthy food, inaccurate information and negative behaviors when it comes to eating habits the positive aspects of traditional Tanzanian food should be emphasized. Even when speaking about the need for change or decrease the negative behaviors, like eating large portions with a large amount of carbohydrates and fat, which is known to be harmful to health (James, 2004). A focus on the impact of culture is especially pertinent at a time when researchers questions limits with examine only individual health behaviors. But this approach highlights which factors that inhibit or nurturing healthy behavioral changes. While many of the conventional health behavior theories focus on individual behaviors to promote health changes. This study has offered a culture-centered approach to health and has, with help from the PEN-3 cultural model analyzed how the context in Babati appears, and also which factors that factors that either promoted or hampered the individual. Focus on individual behavior alone, limits the success of public health interventions.

Health interventions must determine where efforts should be focused on, the individual, extended family or neighborhood, and also understand that neither of them can be ruled out, they overlap. The results of this study suggest that focus should be amid towards the women, they are the ones preparing the food and are responsible for the family’s health and often the ones that take care of the children and can influence the family to healthier assumptions. To begin with, the intervention should emphasize the positive aspects of nutrition. There is a vast cultural value in food and those dishes should not be eliminated from the nutrition. Instead corrective action should focus on smaller portions so that the population eats less carbohydrates and smaller amounts of meat, and modifying the recipes because the food usually looks the same, day after day, week after week and year after year. Tanzania has the best conditions in terms of natural resource for eating a varied diet, it is an incredibly fertile land and almost 95% of the population work with agriculture.

Culture and media affects what people choose to eat, their decision making and also public health. Health educators should take into consideration that the information that the population need in order to make healthy lifestyle choices and consider how the information will be delivered and received. These trends are consistent with those found in other research (James, 2004). Differences in health are found in all
socioeconomic groups in the Tanzanian population. Considerations of these factors are crucial to help the Tanzanian population establish healthy eating patterns and lifestyle choices.

In order to change people’s behaviors and attitudes around their lifestyles considerable effort is needed. Since diet and other lifestyle factors are affected by individual, cultural, social and community factors, the PEN-3 model have helped to identify which cultural factors that have affected attitudes and knowledge towards nutrition and identified which the spreaders of nutritional are, individuals, family, community (Iwelunmor, 2014). Through this field study the cultural factors has been identified in order to understand which influences affects the outcome of overweight and obesity. By integrating cultural factors one can understand how to effectively and sustainable develop interventions in health.
6. Conclusion

The increased presence of NCD’s among the population in Babati shows that it is necessary to investigate the cause of this increase. The aim of this study has been to examine how cultural factors influence the occurrence of overweight and obesity. By examining how perceptions and attitudes about health appears among the adults in Babati town in Tanzania, this study aims to contribute to the development of more sufficient and effective health interventions in order to prevent the increasing burden of NCDs. The empirical data from the study demonstrate that the PEN-3 model has helped to identify that not only the context of perception, enablers, nurtures of health behavior but also highlights the role of the collective (family, neighborhood and the community) and its influences of health behavior. The model shows that all cultures are unique and has positive as well as negative factors that must be taken into account while studying health. Together these factors are critical for eliminating inequalities in health and for developing public health research and interventions locally and globally.

The conclusion from the results are that the prevalence of overweight in Babati is not only caused by the increasing urbanization, a growing middle-class, new ways of labour where physical activity is not necessary needed, and changes in food and eating habits. Attitudes, knowledge and perceptions issues have proved to have a much higher impact. Being overweight is often associated with perception of wealth and health, this is why many strive to achieve that ideal, both men and women. This is pervading among the informants with a lower level of education while those with a higher level of education believes that overweight is not something to strive for because it can result in diseases. This concludes that the level of education is essential for how high the knowledge about health and nutrition is and also the perception of norms and ideals within the community. The perception of healthy lifestyles is relatively low. The fieldwork revealed that those how where overweight or obese did not themselves think they where at risk. This was also something that doctors confirmed when their patients where treated for nutrition and health related diseases.

Culture has proved to have a significant role in this study. Everything that people do and what decisions they make can be linked to their cultural belonging, for example, which ideals people aims for, food choices, perceptions of physical activity and risk perceptions about illness. Culture cannot be excluded in interventions on health. The lack of prevention strategies with a culture perspective and lack of resources in the health sector means that it is difficult to provide health education and raise the awareness among the
population, and protect the community from harmful use of unhealthy behaviours. Urgent actions for prevention and control of NCDs are needed, within the community, both at local levels as well as on a national level. Cultural factors should first be identified, then it should be determined which parts that can have a positive impact and encourage those while trying to work with those that have a negative effect on health behaviors. Thereby interventions can understand the influences that affect the outcome of overweight and obesity.
7. Discussion and recommendations

The general existing perception worldwide is that overweight, obesity and diet-related diseases is a problem that dominates in high-income countries. During the field study in Babati it became clear that NCDs not only affectes the rich people or the people with higher socio-economic status, as many people believe. It is something that all the different social classes of the population suffer from, which confirms what earlier studies have concluded (Montiero et al, 2004). The poorest people are moreover those who are most vulnerable, because medicines for NCDs are expensive and the access to healthcare will therefore be poor for those people. This research has increased the awareness and made the author realize that this is something that should be given more attention, resources and time. Especially in Tanzania, certainly in several African countries as well, when the general belief is that there are mostly starvation problems among the population. This perception must be modified and nuanced. Results from previous research shows that NCDs will continue to rise in the future for LMIC. Obesity is a big problem for a country's economic stability and development. It will be expensive for Tanzania, unless adopting a measure plan as soon as possible.

The correlation between BMI and education has in this study proved to be consistent with what previous research concluded (Pieniak et al, 2009, Shayo and Mugusi, 2011). The level of education is often linked to how overweight a person is, the knowledge about health and nutrition is also connected to what level of education a person has. It is also possible to discern a difference in the perception of norms and body ideals among this population in the community. In Babati, it is considered beautiful and attractive to be fat or overweight, they call it "moderate", women striving to achieve this ideal, and men want a woman who looks like that. A man who is overweight, has high status, he is perceived as masculine, and his body is associated with wealth, men also strive to achieve it and that is a body that women wants to have.

In western countries on the other hand, most of us worry about being overweight, trying to avoid it by different diets media constantly feed us with. In western countries, for many people, obesity can be perceived as a social symbol of human failure. This is very interesting and certainly indicates that cultural ideals play a major and important role. Another aspect that was notable during the field study was that, when talking about the female body a woman's beauty ideal was always in focus. While talking about the ideal for a man, a big body was preferable in order to be able to perform and a large body also indicated that a man had much money and thereby could take care of a family. It is possible to draw links from this to the western ideals, focus often lays on the male and the female body although westerners have different
ideals about what is considered preferable or attractive they still judge people from their bodys.

BMI are the most common and standardized measure to estimate adult overweight and obesity globally (Brewis, 2011). After conducting this study in Babati, it is possible to agree with others who studied BMI as measuring devices and concludes that there is not possible to only use BMI if you want to solve the problems of health, overweight and obesity. There are so many parameters that must be considered, such as cultural, social and environmental aspects. It is also not good for describing individual health risks, because it does not measure level of body fat. It feels like an old-fashioned mindset and health interventions should not use it as a measure.

Poverty should not be an excuse for poor eating habits. It should not be more expensive to be healthy, that applies everywhere. This should be regulated through taxes or similar action, so that healthy food will be cheaper for consumers. Previous studies have shown that cost of food, especially vegetables, fruits and meat prevents many African Americans from eating healthy. Cost is a more important factor than nutrition (James, 2008). In general, Babati and Tanzania, have very good access to healthy food that also grows in the country. An action regarding the food issue is for example to modifying their traditional recipes to make them healthier. It is important to taking advantage of what they are used to eat, researchers considers that culturally based food often are one of the last traditions people change, because food is an important part of all cultural groups, it distinguishes one group from another (James, 2004).

A final thought, which I think is important to keep in mind when developing health interventions, is to consider how people themselves experience health interventions. Today, researches indicate that too much consumption of unhealthy food and too little physical activity result in poor health. Now when the less developed countries have a higher standard, why would they want to reduce their consumption? Many strive to achieve the perfect body ideal. Now as they are there and finally get to become associated with wealth and health, why would they change their culture ideals? It is a paradox, were people in west strive to be so thin that they become anorexic, people in Tanzania strive for the exact opposite, but both results in diseases. Cultural factors are hard to change, it can be problematic if you not use them right to achieve positive health results and that includes the whole world.
References


Pieniak, Z, Pérez-Cueto, F and Verbeke, W (2009) Association of overweight and obesity with interest in healthy eating, subjective health and perceived risk of chronic diseases in three European countries, *Department of Agricultural Economics*, Ghent University, Belgium.


**Pictures:**

**List of informants- Footnotes**

MI –Male Informant  
FI –Female Informant  
DI 25- Doctor District hospital  
DI 26 -Doctor Private health center  
HWI 27- Health workers  
PHI 28- Pharmasists
Appendix 1: List of informants

Below is a list of the informants and information of the interviewee’s sex, age, education level, profession and approximate nutrition status (NS) (according to the reference pictures).

Informant 1: Male, 45 years old, Secondary school- form six, Cook, NS- Healthy BMI with bigger stomach.
Informant 2: Female, 44 years old, Primary level, Restaurant owner of a Mama Lishe, NS- Overweight.
Informant 3: Male, 47 years old, Primary level- standard 7, Welder, NS- Overweight.
Informant 4: Female, 45 years old, Primary level, Buisness women, NS- Obese.
Informant 5: Male, 20 years old, Secondary school- form four, shop assistant, NS- Normal weight.
Informant 6: Female, 25 years old, Primary school, housewife and selling clothes and popcorn in the neighbourhood and in schools, NS- between overweight and obese.
Informant 7: Female, 28 years old, Bachelor´s degree, Biology teacher, NS- Normal BMI.
Informant 8: Male, 32 years old, Primary level, Shoe polisher, NS- Healthy BMI with muscles.
Informant 9: Male, 27 years old, University education, Tourism profession, NS- Healthy BMI.
Informant 10: Female, 41 years old, Primary level, Buisness shop, NS-Obese.
Informant 11: Female, 38 years old, Primary level, Small-scale farmer, NS- Obese.
Informant 12: Male, 22 years old, Secondary school, Bus ticket seller, NS- Healthy BMI.
Informant 14: Female, 40 years old, Secondary school-form 4, Shop assistant, NS- Overweight.
Informant 15: Female, 40 years old, Primary level-standard 7, Housewife, NS- Obese.
Informant 16: Female, 43 years old, Secondary school-form 4, Buisness women, NS- Between overweight and obese.
Informant 17: Male, 24 years old, Bachelor´s degree, Development program, NS- Healthy BMI.
Informant 18: Male, 58 years old, Master level, Marketing, NS- Between overweight and obese.
Informant 19: Female, 34 years old, Primary level, Farmer, NS- Obese.
Informant 20: Male, 35 years old, Primary level, Shoe polisher, NS- Overweight.
Informant 21: Female, 33 years old, Primary level, Housewife, NS- Overweight.
Informant 22: Male, 48 years old, Primary level, Buisness, NS- Obese.
Informant 23: Female, 50 years old, Primary level, Housewife, NS- Between overweight and Obese.
Informant 24: Male, 45 years old, Secondary school, Buisness, NS- Overweight.
Appendix 2: Pictures

Images were shown for all respondents in the beginning of the interviews. The text below (Underweight, Healthy BMI, Overweight and Obese) was not included during the interviews, only the body sizes were shown.

Picture on women:

Underweight  Healthy BMI  Overweight  Obese

Picture on men:

Underweight  Healthy BMI  Overweight  Obese
Appendix 3- Interview Questions

The interviews always started by showing the pictures above of women and men in four different body sizes, first on the same sex and then the opposite. The interviews were based on a number of themes for keeping an open conversation and the questions below worked as a guide through the interviews for not missing important aspects, and also to ask follow up questions that arose during the interviews.

Cultural ideals and weight status

Picture on same sex:
• According to you which one of these are the healthiest? Why?
• Which association do you get from the picture? (Showing four different body shapes).
• How does the female/male body ideal look like?
• What is the norm in the society? What is the ideal body shape?
• How is a slim/curvy/overweight man/women thought about among the community?

Pictures on opposite sex:
• According to you which one of these men/women are most beautiful or attractive? Why?
• Is there any perfect considered body ideal for men/women?
• How is a slim/curvy/overweight man/women thought about among the community?
• Do you perceive any changes about body ideals? Among both men and women?

Nutrition attitudes and habits

• What kind of food are you eating during one week? How many times each day?
• How big are the portions?
• Who are you eating? Family? At a Mama liche? Etc..
• Where do you buy your food? Is it you or your wife/husband that’s byes the food?
• Have you ever bought something from a western store? Like wiseman for example?
• How do you cook your food?
• What kind of food do you think is healthy? And unhealthy? Give examples. Why?
• What kind of food do you think can contribute to overweight?
• Have the food and/or eating habits changed? How?
• What kind of food is available today, that was unheard of for like ten/fifteen years ago?
• Do you know anything about European food? What is your perception about that food?
• What affects do you think an increased sugar and salt intake could have on our health?

Alcohol:
• How do you perceive the alcohol consumption in Babati town?
• Has alcohol become more accessible? Does people drink more? Or more often?
• At what age does young people start to drink?
Perception of physical activity

- What kind of physical activity do you do?
- Is it important to walk/ move/ exercise? Why?
- What happens with the body if/when you moving/walking/exercise? Are their any positive affects with physical activities?
- In general, what happens with the body if a person is inactive? (never walk, not move)

Risk perception

- In your opinion, when is a person overweight?
- What kinds of problems/risks can occur if a person is overweight/curvy/unhealthy?
- Where do you get health information from?
- What kind of information? Are they talking about the risks of being overweight?
- What are they saying? What advice is given?

Questions for Hospitals, Doctor, Health clinics and Pharmasist

- What kind of people gets NCDs in Babati today?
- What are peoples perception about a ”normal” or ”healthy” body size?
- Do you have the impression that patients are aware of the associated risks with overweight and obesity?
- If their not aware of it, why do you think it is like that?
- When patients are diagnosed with NCDs, what kind of recomendations are given to improve a more healthy behaviour?
- What are the resources to handle the risen burden of NCDs?
- How is the access to medication?
- Which diseases are prioritized?