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AusAID AND HEALTH SERVICES IN FIJI: A CASE STUDY OF NON-COMMUNICABLE DISEASES

Mahezabeen Nisha Khan

A thesis submitted in fulfilment of the requirements for the degree of
Master of Arts in Development Studies

Development Studies Programme
School of Government, Development and International Affairs
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DECLARATION

I, *Mahezabeen Nisha Khan*, declare that this thesis is an original piece of work done by me. Where other sources have been used, these have been duly acknowledged. Any omission and error or otherwise is my own and the main content of this thesis has not been previously submitted for any degree in any other University.

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A Statement by the Supervisor

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ABSTRACT

Health is a critical development issue. Non-communicable diseases (NCDs) are one of the critical health-development challenges globally and also in the Pacific Island countries (PICs) including Fiji. There has been a global shift in disease incidences from communicable to non-communicable diseases in all regions. NCDs, the life-style diseases, are one of the major killers today and a threat to development and to humankind. With growing ageing population, globalization, and urbanization, the incidence of NCDs is rising unprecedently and putting a heavy economic burden on governments. To supplement government's efforts, there have been increasing aid flows to health services especially towards NCDs in the PICs including Fiji. AusAID is one of the major donors providing substantial aid to improve health services including prevention of NCDs in Fiji. However, there exists no systematic study so far analysing the effectiveness of aid to health services and particularly to NCDs in Fiji.

The thesis attempts to bridge the information and knowledge gaps. The study adopted a qualitative methodological approach, using both primary and secondary sources of information to study AusAID support towards NCDs in Fiji. A sample of fifty people was selected from the diabetes patients in the Diabetes Centre, Suva.

The study found clear linkages between NCDs and disability, poverty, ageing, trade and urbanization. The data collated from the survey established a strong correlation between changing lifestyles and increasing incidence of NCDs in Fiji. The study found that diabetes is one of the major contributing factors in the increasing incidence of amputation cases leading to physical disabilities in Fiji. A systematic in-depth study is, however, required to collate diabetes statistics for policy development and preventive measures.

The study found the AusAID programme for health services and especially towards NCDs in Fiji faces numerous challenges in enhancing its effectiveness. The monitoring and evaluation systems for aid in the health sector need to be strengthened in order to be more effective and achieve their intended goals.

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ABBREVIATIONS

AFR	African Region
AIDS	Acquired Immune Deficiency Syndrome
AMR	American Region
AusAID	Australian Agency for International Development
CD	Communicable disease
CHIP	Centre for Health Innovation and Partnership
C-POND	Centre for the Prevention of Obesity and Non-communicable Disease
CWMH	Colonial War Memorial Hospital
CVD	Cardiovascular diseases
DAC	Development Assistance Committee
EMR	Eastern Mediterranean Region
ENSO	El Nino-Southern Oscillation
EU	European Union
EUR	Europe Region
FIC	Forum Islands Country
FSM	Federated States of Micronesia
GBD	Global burden of Disease
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
IFI	International Financial Institution
JICA	Japanese International Cooperation Agency
LMIC	Low and Middle Income Country
MDG	Millennium Development Goal
MCH	Maternal Child Health
NCD	Non-communicable Disease
NT	Nutrition Transition
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development

OPIC	Obesity Prevention in Communities
PEN	Package of Essential Non-communicable Disease
PIC	Pacific Island Country
PIFS	Pacific Islands Forum Secretariat
PNG	Papua New Guinea
SEAR	South East Asia Region
SOPAC	South Pacific Applied Geoscience Commission
SPCZ	South Pacific Convergence Zone
TB	Tuberculosis
UN	United Nations
US	United States
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organisation
WPR	West Pacific Region

CHAPTER ONE

INTRODUCTION

1.1 Background

Good health is a human right, but delivering it poses one of the major challenges for sustainable development. The strong relationship between health[1] and development[2] has an important impact on human potential through, for example, in strengthening community and national capabilities. A healthy population can contribute to higher labour productivity, which helps ensure higher economic growth. Simultaneously, economic growth provides financial resources that can in turn, be invested in better health services and in actions to promote overall wellbeing (WHO, 2013). Good health is also a means to attain other development goals such as higher education, increased food production and declining poverty. Healthier children and adults are able to learn, perform and gain skills to work and reduce poverty.

However, globally diseases both communicable[3] and non-communicable[4] (NCDs) are critical health-development challenges. Communicable diseases (CDs) such as for example, AIDS, tuberculosis (TB) and malaria are taking a heavy toll globally. The world scenario has been changing rapidly. There has been a global shift in dimension from communicable to non-communicable diseases. Non-communicable diseases are now one of the major global challenges, causing high mortality in all countries and regions, poor or non-poor (Negin, Irava & Morgan, 2012). These are the leading threats to human health and human development in the world today.

The transition has changed the way people live and die. There has been an increase in the number of people with disabilities and the amount of time people live with a disability. The health

[1] Health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity (WHO, 2012c).
[2] Development is change or a state of progressing and growing (Thomas, 2000).
[3] Communicable diseases are infectious. They spread from one person to another.
[4]A non-communicable disease or NCD is a medical condition or disease which by definition is non-infectious and non-transmissible among people. NCDs may be chronic diseases of long duration and slow progression, or they may result in more rapid death, such as some types of sudden stroke (WHO, 2012a).

transition experience has profound ramifications for governments, non-government Organisation (NGOs) and other stakeholders working in health and international development (WHO, 2013).

As seen in the Millennium Development Goals (MDGs)[5], NCDs are barely on the health and development agenda in low- and middle-income countries[6] (LMICs) (ibid.). Three MDGs; MDG 4 (reducing child mortality), MDG 5 (improve maternal health), and MDG 6 (combat HIV/AIDS, malaria, and other diseases) specifically address health issues. However, the said MDGs do not currently specifically mention NCDs, either collectively or as single diseases (World Bank, 2011a). Therefore, it has greatly undermined the progress towards the achievement of Millennium Development Goals. Nevertheless it has been possible for some Pacific Island Countries such as Cook Islands and Samoa that have included NCDs in their National MDG target indicators.

NCDs are rising unprecedently and putting heavy economic burden on the governments. To supplement government's efforts, there has been increasing foreign aid flow towards health services especially towards NCDs (WHO, 2013). AusAID is one of the major donors providing substantial aid to improve health services including prevention of NCDs in the Pacific and in Fiji (AusAID, 2013). However, there exists no systematic study so far analysing the effectiveness of aid to health services and particularly to NCDs in Fiji.

As NCDs are cross-cutting and multi-sectoral in nature, investing in NCD prevention and control is proven to deliver significant and measurable benefits for a number of human development indicators (WHO, 2013). Prevention of ill-health and investment in health enhances a countries economic productivity. On a yearly basis 100 million people get trapped into poverty through high health care cost which includes out of pocket expenses. The existing sickness gets worse due to unaffordability of health services (Bradshaw and Steyn, 2001).

[5]The Millennium Development Goals (MDGs) are eight international development goals that were officially established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. All 189 United Nations member states and at least 23 international organizations have agreed to achieve these goals by the year 2015 (UN, 2012).
[6] The World Bank classifies low and middle-income countries as developing countries but notes, "The use of the term is convenient; it is not intended to imply that all economies in the group are experiencing similar development or that other economies have reached a preferred or final stage of development. Classification by income does not necessarily reflect development status (World Bank, 1998).

Moreover, the low and middle-income countries are witnessing the rise in number of people who are either overweight[7] or obese, especially in young children (WHO, 2012c). Children are vulnerable to the risk factors that contribute to high level problems with non-communicable diseases (ibid.). Compounding the issue of the increased incidence of NCDs is an inability for many to cover high medical costs attached to treatment of NCDs (Abegunde and Stanicole, 2006). In low-resource settings, health-care costs for cardiovascular diseases, cancers, diabetes or chronic lung diseases can quickly drain household resources, driving families into poverty (Ferrannini and Cushman, 2012).

Furthermore, the rapid rise in NCDs is expected to impede poverty reduction initiatives especially in low-income countries, mainly due to household costs associated with health care (Bleich, 2010). Decline in productivity due to ill-health issues contributes to a vicious cycle of poverty. Vulnerable and socially disadvantaged people get sick quicker and die sooner than people of higher social positions, mainly because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services (Negin, Irava & Morgan, 2012).

Additionally, NCDs are well-known life-style diseases and is one of the major killers today causing serious threat to development and to humankind. NCDs kill an estimated 36 million people each year around the world (WHO, 2013), of which about 63 per cent are from low- and middle-income countries[8]. Approximately one-quarter of all NCD deaths occur below the age of 60 years and by 2030, NCDs are projected to claim the lives of 52 million people (ibid.). Incidence of NCDs is expected to rise substantially in the coming decades. Reports show that if no action is taken to reduce the risk of chronic disease an estimated US$84 billion worth of economic production would be lost due to NCDs such as heart diseases, stroke and diabetes in low and middle income countries (WHO, 2013).

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[7] Defined in this case as being greater than one standard deviation from the median body index for age and sex.

[8] The World Bank classifies low and middle-income countries as developing countries but notes, "The use of the term is convenient; it is not intended to imply that all economies in the group are experiencing similar development or that other economies have reached a preferred or final stage of development. Classification by income does not necessarily reflect development status (World Bank, 2013).

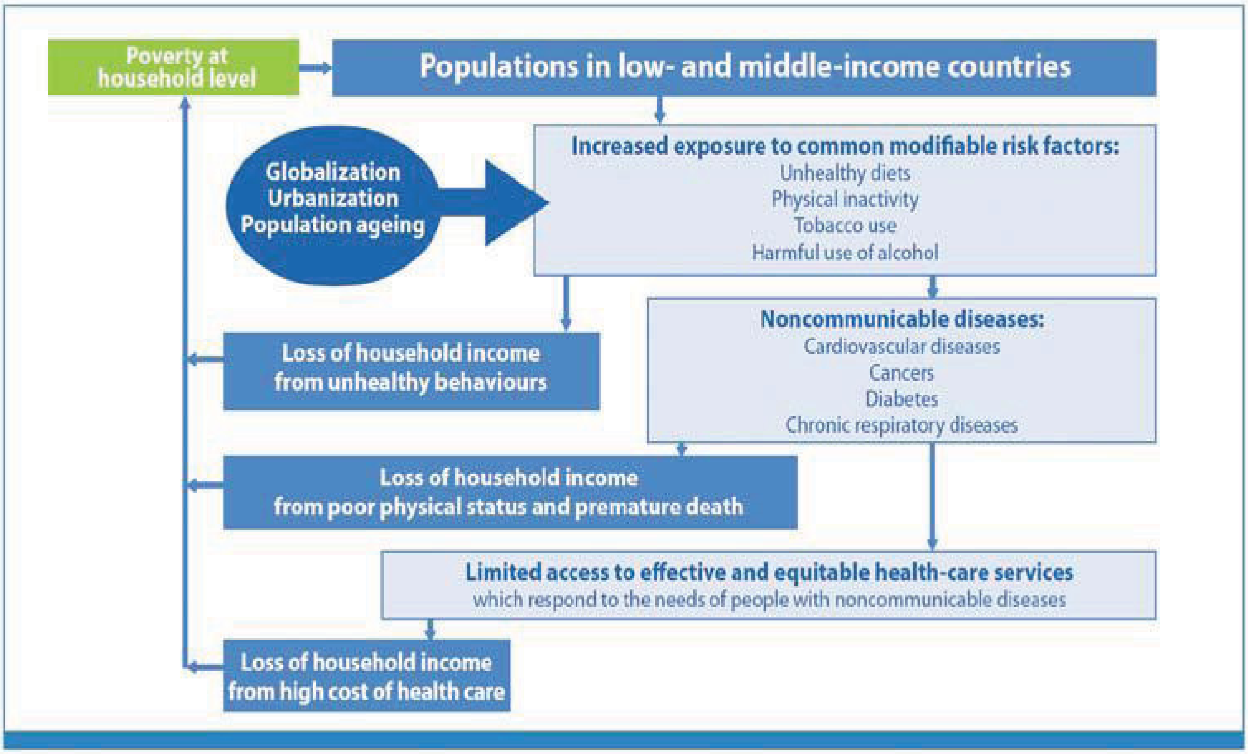
The incidence and impact of NCDs are driven by forces of modernization and an increasingly ageing population (due to improvement in medical sciences and modern medicines extending average lifespan). But for many with NCDs this may be an extended life of disability if the patient has experienced an amputation caused by complications of an NCD. Globalization of unhealthy lifestyles including unhealthy diets may show up in individuals in the form of blood pressure, increased blood sugar, elevated blood lipids, overweight and obesity (Kawachi and Wamala, 2007). Accordingly to Mc Gee (2012) these are called *'intermediate risk factors',* which can lead to cardiovascular diseases. These forces are eliciting new threats to health (ibid).

Figure 1.1 shows mutually reinforcing links between NCDs and poverty. NCDs are both a cause and consequence of poverty at the country level, community, family and individual level. Unhealthy behaviour, poor physical status, and high cost of NCD related health care at the household level lead to loss of household income (Laaksonen, 2003). The chronic and long-term nature of NCDs, recurrent health costs for households and government increase the risk of more spending.

Consequently, the growth in NCDs and NCD risk factors call for immediate intervention. It is proven to be more effective to intervene at reducing the risk factors, rather than treatment of NCDs. WHO (2011a) has identified a set of interventions called “best buys”[9]. Despite the large amounts of funding allocated over the decades to essentially hospital-based curative care for NCDs, awareness raising has had relatively little impact on health outcomes. Further interventions on the environments that shape behavioural risk factors and tackle the social determinants of NCDs are urgently needed (McGee, 2012).

[9] A ‘best buy’ is defined as an intervention for which there is compelling evidence that is not only highly cost-effective but is also feasible, low-cost and appropriate to implement within the constraints of the local health system (WHO, 2011c).

Figure 1.1: The Mutually-reinforcing links between NCDs and Poverty



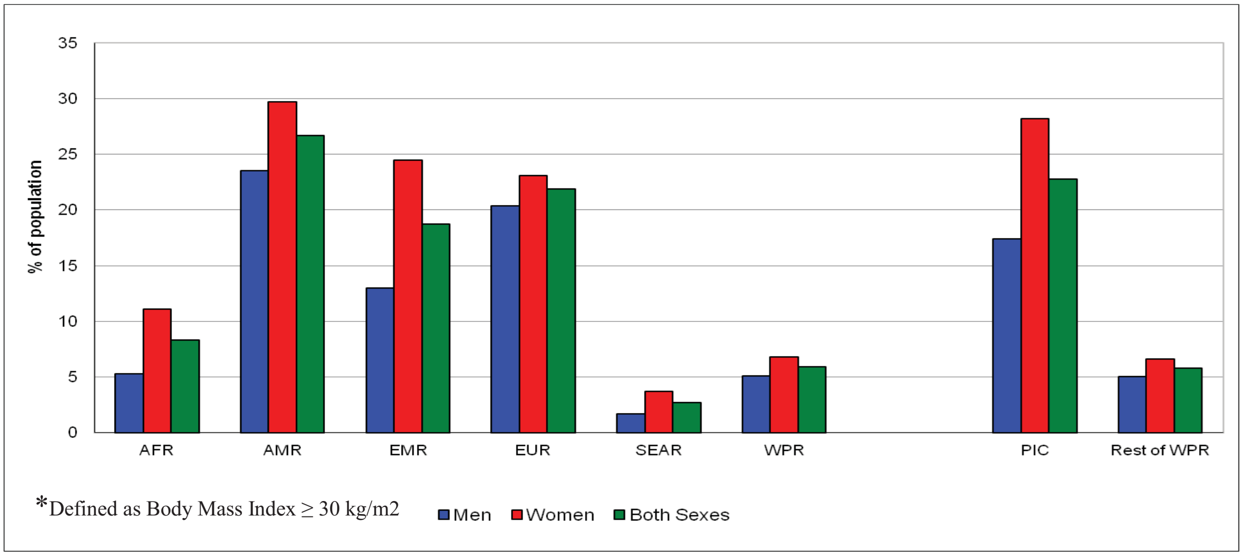
Source: WHO, 2011b

The Pacific Islands region is undergoing the *'disease transition'* from communicable to noncommunicable diseases (PIFS, 2011). NCDs are now the major cause of death in nearly all Pacific Island Countries and territories and the trends indicate that rates are generally rising rather than falling (ibid.). The issue is recognized by both national governments and development partners in the Pacific region. In spite of significant amounts of aid being channelled to health sectors across the region, the incidence of NCDs continues to increase (ibid.).

The trends in Western Pacific region demonstrate that, while deaths from communicable diseases are decreasing, deaths from NCDs are increasing, causing as many as 26,500 people to die every day (SPC, 2010a). Reaching the target of 2 per cent reduction every year over the next 10 years can save 10 million lives in the region (ibid.). NCDs are imposing huge direct and indirect costs on both households and national budgets.

Figure 1.2 shows the prevalence of obesity by regions of the world (WHO, 2010b). Many of the island nations of the South Pacific region have very high rates of obesity. Nauru has the highest rate of obesity in the world (94.5 per cent) followed by Samoa, the Federated States of Micronesia and American Samoa (ibid.).

Figure 1.2: Age-standardized prevalence of obesity* in adults aged 20+ years of age by WHO Region and for Pacific Island Countries, 2008.

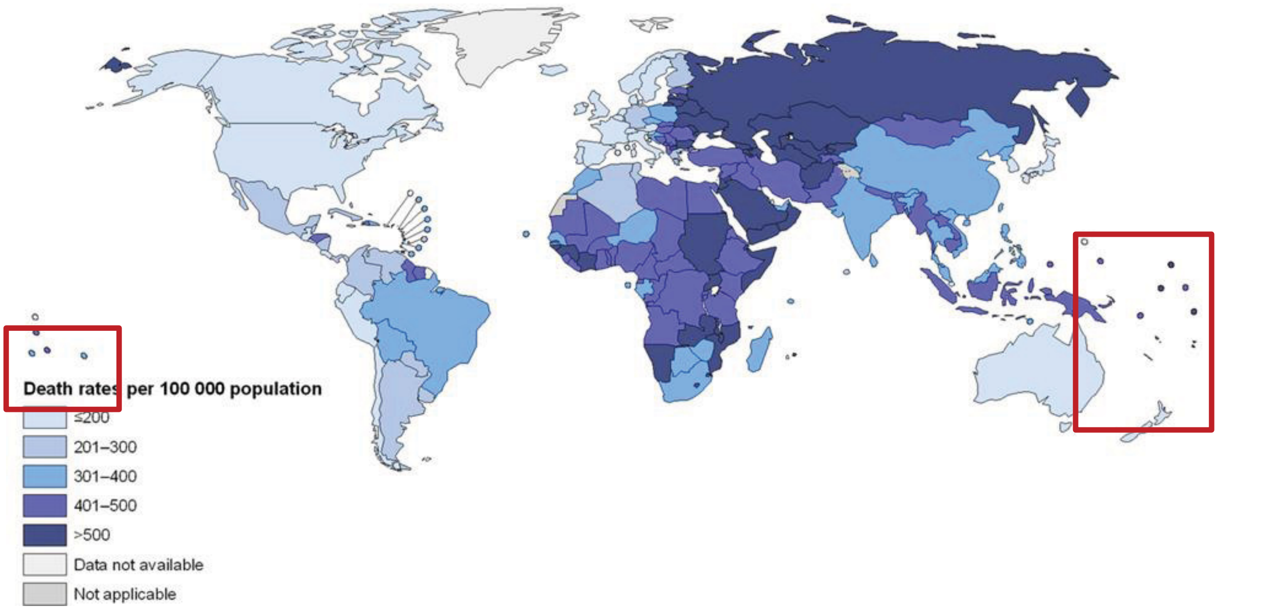


Source: WHO, 2010b.

Nearly 60 per cent or more of the adult population is overweight in the Pacific and more than half the adult population is obese in several Pacific Island Countries (Negin, Irava & Morgan, 2012). Being overweight or obese is frequently occurring at young ages. Insufficient physical activity is one of the major threat factors for early onset of NCDs. Over the last two decades there has been a major shift in the way people live with and many obese becoming very sedentary in their lifestyles (Szmedra, and Sharma, 2005).

The highest incidence of diabetes in the world is also found in the Pacific region. For example 32 per cent of the adult population of Nauru is suffering from diabetes (Negin, Irava & Morgan, 2012). Similarly, diabetes prevalence among adults in American Samoa is to the extent of 47 per cent, compared to 13 per cent in mainland USA (Denizer, Dethier and Gelb, 2011). Map 1.1 shows cardiovascular diseases and diabetes-related death rates per 100,000, age standardised, males in 2008.

Map 1.1: Cardiovascular Diseases and Diabetes-related death rates per 100,000 age standardised, males, 2008



Source: WHO, 2011d.

In addition to being the leading cause of death, NCDs often aggravate disabilities of individuals. The onset of many NCDs can be prevented by addressing the common risk factors: tobacco use, harmful use of alcohol, unhealthy diet, and insufficient levels of physical activity (Bonu, Rani and Peters, 2005). Although NCDs affect older age groups, all age groups are vulnerable to these diseases. In effect, lifestyles need to change so that risk factors are minimised or avoided all together (World Bank, 2012).

When intermediate risk factors across compared regions as Figure 1.3 demonstrates the Pacific region has the highest age standardized prevalence of diabetes compared to the rest of the WHO region[10]. This indicates that 15 per cent of population of Pacific Island Countries are affected. A worrying indicator is that people are developing diabetes at an increasingly younger age. In Fiji,

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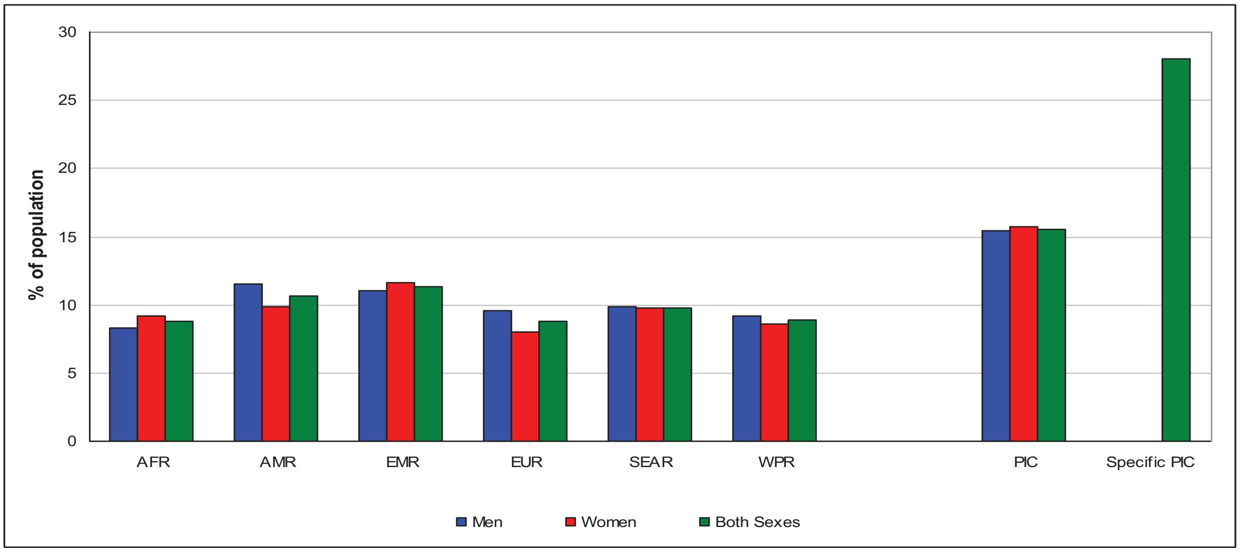
10 WHO regions are: African Region (AFR), Region of America (AMR), South-East Region (SEAR), Eastern Mediterranean Region (EMR), European Region (EUR), Western Pacific Region (WPR)

for example, only 16 per cent of the population is aged more than 55 years due to premature deaths primarily caused by NCDs particularly, cardiovascular diseases (Anand et al., 2011).

Figure 1.3 Age-standardized prevalence of diabetes by WHO Region and for PICs, 2008



Source: WHO, 2010d.

**PICs – includes Western Pacific Region

**Specific PICs - excluding Western Pacific Island Region

Furthermore, the early onset of diabetes and other related ailments threatens today's youth with long-term health problems, lowered life-expectancy and ever-increasing government health costs.

Given that health plays a crucial role on human development, foreign assistance is often directed to combat ill-health in the developing world. Many developing countries highly dependent on external financing for health sector (Mills, 2011). Aid assistance is therefore important for health services in developing countries. Concerns about the efficacy and effectiveness of development assistance have resulted in several international Declarations endorsing 'good practice' principles aimed at improving aid effectiveness (PIFS, 2011).

The most important declaration so far has been the '*Paris Declaration'* on aid effectiveness, adopted in 2005, in which donors, recipient countries and multilaterals agreed on five principles of 'good practice': ownership, alignment, harmonization, mutual accountability and results-based management (PIFS, 2012). The OECD evaluation found that although some progress has been made, it was not enough (OECD, 2008), so this led to the signing of the '*Accra Agenda*' for Action in 2008 to accelerate progress towards ownership, inclusive partnerships and results. The 'Paris Declaration' in its evaluation found that overall the quality of aid has improved, but highlights the lack of transparency and the aid management burden as impeding progress. It calls for more realistic expectations of the contribution of aid assistance to development (Wood et al., 2011).

However, aid in Pacific Islands Countries is an essential source of investments in human development, attainment of Millennium Development Goals and in meeting national development priorities. Per capita Official Development Assistance (ODA)[11] inflows to the region are seven times the average value for developing countries (Wood et al., 2011).

Based on the 2013 Organisation for Economic Co-operation and Development (OECD)'s Development Assistance Committee (DAC) figures, Australia remains the largest bilateral donor in the Pacific (OECD, 2013). Despite significant levels of development assistance to the Pacific region over many years, progress has been slow.

NCDs continue to be a major health, social and economic development problem, especially in Fiji. As such Official Development Assistance plays a major role in addressing the NCDs issue in Fiji. ODA inflows as a percentage of Gross Domestic Product (GDP) is higher in smaller Pacific Island Countries compared to larger countries (DAC, 2011). In 2007, ODA represented for Fiji was equivalent to only 2 per cent of GDP (ibid.). Regardless of the size and levels of ODA inflows, Fiji remains highly aid dependent. However, inflows are poorly tracked in Fiji for NCDs and the monitoring and evaluation is poorly carried out (Snowden et al., 2013).

AusAID has a five year AUD25 million dollar programme implemented by Fiji Health Sector Support Programme (FHSSP) in close collaboration with Fiji Ministry of Health (MOH). The primary goal of AusAID programme is to be fully engaged in Fiji's health sector. The aim is to

[11] ODA refers to aid from national governments for humanitarian purposes and for promoting economic development and welfare in low and middle income countries. ODA can be bilateral or multilateral. This aid is given as either grants, where no repayment is required, or concessional loans, where interest rates are lower than market rates. Loan repayments to multilateral institutions are pooled and redistributed as new loans (Collier and Dollar, 2004).

contribute to Fiji's MOH's efforts to achieve its higher level strategic objectives in relation to prevention and management of diabetes (AusAID, 2013).

1.1.1. Research Problem Statement

Like developed regions, the Pacific island countries and territories are experiencing a *'disease transition'* from communicable to non-communicable diseases. The major cause of death in nearly all PICs and territories is now NCDs and the trends indicate that rates are generally increasing (Wood et al., 2011). The rise in the prevalence of NCDs is the result of complex interaction between health, economic growth and development, is strongly associated with universal trends such as population ageing, unplanned urbanization and globalization of unhealthy lifestyles.

According to the World Health Organization (WHO, 2011e) survey, around 40 per cent of population in Pacific Island region has been diagnosed with an NCD, particularly cardiovascular disease, diabetes and hypertension (ibid.). In Fiji 80 per cent of deaths are caused by NCDs (Thow et al., 2011b).

The costs associated with NCDs treatment put tremendous strain on social welfare and health systems in Fiji. In 2013, about 40 per cent of Fiji government spending was directed toward healthcare and maintenance, especially to the treatment of NCDs (Fiji Ministry of Health, 2013a). WHO (2013) estimate 75 to 80 per cent of adult admissions in year 2012 to general hospital wards and surgery in Fiji were related to NCDs and the cost of treating patients admitted for an NCD is significantly higher than the cost of treating the average patient.

Furthermore, indirect costs such as losses to productivity due to absenteeism, prolonged disability and diminished resources within families are less accounted for but believed to be quite significant (WHO, 2010e). It is estimated that half of those who die of chronic non-communicable diseases are in of their productive years (Thow et al., 2011b). This leads to the reduction in rates of economic growth and it endangers industry competitiveness across borders (ibid.)

Despite significant donor and other funds to address the issues that relate to NCDs the mortality rate continues to rise. The effectiveness of aid programmes to the health sectors, particularly for NCDs, remains under-researched and is the key consideration of this research. This thesis analyses AusAID inflows for NCDs and their impacts on Fiji's health sector especially for diabetes.

1.1.2 Rationale

The importance of studying the effectiveness of development assistance to address the increasing prevalence of NCDs in Fiji is attributed to several factors. Firstly, aid has a direct impact on the health status such as NCDs of the country. This thesis focuses on AusAID support because it is the biggest donor to the region and in Fiji. There has been a considerable amount of study and research undertaken in the areas of aid and development, particularly into their successes and failures. However, the effectiveness of aid on NCDs particularly diabetes has remained relatively under-researched at the national level, especially in Fiji.

However, there exists no systematic study so far analysing the effectiveness of AusAID support to NCDs in Fiji. The thesis attempts to bridge the information and knowledge gaps.

1.2 Research Questions

The central question this study seeks to answer is: How does AusAID Programme support health services in Fiji in addressing especially NCDs?
The study also seeks to answer specific questions:

a) What are the major causes of NCDs in Fiji?
b) What mechanisms of AusAID's health services are in place in Fiji?

1.3 Objectives of the Study

The general objective of this study is to analyse AusAID's support in health services in Fiji with special reference to NCDs.
The specific objectives are to:

1. examine the causes and consequences of NCDs in Fiji.
2. analyse incidence of NCDs: the type and nature in Fiji.
3. study the volume of AusAID especially on NCDs in Fiji.
4. examine the mechanisms of AusAID for NCD programmes in Fiji.

1.4 Sources of Data and Methodology[12]

Data and information for the thesis are derived from both primary and secondary sources. The primary sources include fieldwork research undertaken in Suva City and mainly at the Diabetic Centre & Eye Clinic located at local Colonial War Memorial (CWM) Hospital, in Suva. Suva City[13] is the capital of Fiji and having high concentration of NCD patients. The fieldwork entailed the use of a survey questionnaire drawing samples from fifty NCD affected people. Key informants were also interviewed from Fiji Ministry of Health in Suva and with AusAID.

In addition, secondary data for the thesis was generated from various reports including Fiji's health strategy, and various national, regional and internationals reports on the issue of concern in this study. Data obtained were then analysed and tabulated. The research methodology was primarily qualitative; however, quantitative data were also gathered, tabulated and analysed in the thesis.

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[12]Chapter Three discusses research methodology and design in greater detail.
[13] Suva City is explained in detail in Chapter 4

1.5 Organisation of the Thesis

This thesis is divided into six chapters. Chapter one is the introductory section of the thesis with the background of the study, research problem statement, rationale of the study, objectives and a brief account of the methodology employed in this study.

Chapter two provides a conceptual framework linking key concepts and theoretical underpinning around the research subject. This chapter provides an overview of relevant approaches, models and theoretical debates on aid issues, especially linking to NCDs.

Chapter three describes in detail the methodology used in this study as well as in the analysis of data. In this chapter, the justifications of methodology and methods are provided. The units of analysis and sources of data, sampling procedures, methods used to collect data, limitations of the research, and the ethical issues are discussed in this chapter.

Chapter four provides a background of the study area, i.e. Suva and Fiji as a whole. It briefly focuses on geography, history, economy, NCDs and aid in Fiji. Having discussed that, the chapter then focuses on Fiji in terms of its origin, growth and urban development problems causing NCDs. This is then followed by a brief overview of the NCDs and aid in Fiji.

Chapter five focuses on research findings. It provides documentation and survey analysis on NCDs in Fiji with specific reference to diabetes.

Chapter six provides a conclusion and recommendations based on the study findings. It also identifies implications of the research to identify the gaps and recommend ways to address them. It also provides some suggestions on areas for future research on the subject.

CHAPTER TWO

AID, HEALTH, NCDs AND DEVELOPMENT: CONCEPTUAL FRAMEWORK

2.1 Introduction

This chapter focuses on the basic concepts that are fundamental to this thesis and the linkages between them. These basic concepts are: aid, health, NCDs and development. In particular, it discusses the aid effectiveness and health, focusing on NCDs as a critical health issue. The chapter provides a conceptual framework for the research and reviews models and approaches relating to the subject. An extensive literature review has been undertaken in this chapter, covering various studies on the subject done in developing countries, especially in the Pacific and Fiji.

2.2 Conceptual Framework and Literature Review

2.2.1 Foreign Aid, Health and Development

The theory and practice of foreign assistance for health is underpinned by a significant volume of literature on aid effectiveness (Welander, 2012). To date there have been mixed results from research undertaken on the link between aid and economic development. The relationship between foreign aid and economic growth is complex and direct (Svensson, 1999).

Studies suggest that aid has been effective in stimulating economic growth (Gormanee et al., 2005a, 2005b; Hanssen and Tarp, 2000), others find that the effectiveness of aid is conditional on the policy and institutional environment (Burnside and Dollar, 2000; Collier and Dollar, 2004). So far other studies put forward that aid has simply failed to contribute to growth in recipient countries (Boone, 1996; Easterly, 2006; Rajan and Subramanian, 2005).

In contrast, micro-level analyses of aid effectiveness suggest that targeted aid interventions have achieved positive results. For example, Mishra and Newhouse (2009) found that aid helps to lower infant mortality in recipient countries, while Michalow and Weber (2007) and Dreher et al. (2008) found evidence that aid may contribute to increasing primary school enrolment. Gormanee et al., (2005a) also find that aid is associated with improvements in the Human Development Index.

As Ndikumana (2012), noted the positive results at the micro-level may not aggregate into visible positive outcomes at the macro-level because of a variety of structural problems in the existing development assistance model. The micro- and macro-level dichotomy between effectiveness of aid has contributed to the continuing debate regarding the impact of aid on economic development.

Absent from both the micro- and macro-level analysis of aid effectiveness is an analysis of the impact of aid on health in social and human development outcomes. This is somewhat surprising given the burgeoning literature that points to the links between health on the one hand and macro-economic policies and economic growth on the other. A growing number of theoretical and empirical studies suggest that health outcomes can affect economic growth, although the effect is influenced by the structure of the economy, the macro-economic policy regime and the extent of health segregation in employment (Berik and Rodgers, 2009; Braunstein, 2012).

Yet, significant obstacles to improving health services remain–from poor infrastructure and weak logistics to inadequate policies. Lack of sustainable financing or health insurance coverage preventing these lifesaving resources from reaching the poor people in developing countries who need them the most. Investing in better health systems is the key to achieving better ‘health for all’ (Sundewall et al., 2011).

2.2.2 Aid effectiveness and Health

Better health is about investment and management of limited resources. As such aid plays an important role in healthy human development. Effective aid is critical both to maximise the impact of aid and to achieve long-term sustainable development (Duncan and Pollard, 2002). Aid to the health services has increased substantially over the last few decades and it includes a growing and diverse range of actors. Aid to the health sector also faces complex governance and management challenges (Berik and Rodgers, 2009; Braunstein, 2012). For example, donors inadvertently invest in duplicate and fragmented efforts, while partners are unable to take full responsibility and leadership (DAC, 2000). Reviewing these challenges against the aid effectiveness, principles were outlined in the '*2005 Paris Declaration'* and '*2008 Accra Agenda'* for Action. Health, then, is used as a "tracer" sector to help assess the risks and benefits of the diverse range of actors, and promote co-ordination and coherence among development programmes (DAC, 2000).

Moreover, there is only a few studies that have been devoted to the analysis of foreign aid to specific targeted sectors. The studies include influence of foreign aid on education (Michaelow and Weber, 2007), the relationship between foreign aid and environment (Arvin et al., 2006), and effectiveness of foreign aid on the democratization in developing countries (Boone, 2011). The literature on financial assistance to improve health outcomes plays an important role in the discussion on aid effectiveness.

In regards to assistance, health aid volumes have increased manifold. According to Ravishankar, Gubbins and Cooley (2010), aid to health services has increased from nearly US$6 billion in 1990 to US$22 billion in 2007 nearly 26 per cent rise between 1990-2007 . The adaptation of the Millennium Development Goals, 'Paris Declaration' and 'Accra Agenda for Action aroused considerable interest in effectiveness of 'health' among the researchers.

A number of studies have incorporated a cross-sectional dimension of the aid effectiveness on health outcomes. In his book, Easterly (2006) reveals that foreign aid contributed significantly to the reduction of infant mortality despite his scepticism about the foreign aid in general. In her study Williamson (2008) finds that foreign aid to health is ineffective in addressing health issues.

Additionally, Mishra and Newhouse (2009) test the hypothesis linking the relationship between health-targeted aid, infant mortality and life expectancy in recipient countries. Using data on non-OECD countries between 1975 and 2000, they found that, on average, aid does not lead to the improvements of the health outcomes and when it does improve health outcomes it happens under conditions of good governance, which includes democracy, transparency and sanitation (ibid.).

Conventionally, the literature suggests that good governance facilitates aid effectiveness in promoting economic growth (Burnside & Dollar, 2000; Bearce, 2009). However, Dietrich (2010) in her study on the role of corruption in efficient allocation of aid to the health sector shows that health aid performs better in corrupt states. She further suggests that each recipient country compares compliance costs with benefits of allocating aid effectively.

Unlike industry, trade or infrastructure aid, health aid is associated with low compliance costs and hence rent-seeking is not so attractive as in other sectors. Dietrich (2010) argues that since health aid is channelled usually through non-governmental organizations, it is less dependent on the institutional factor like corruption.

The foregoing discussion indicates that aid may not always be successful in promoting economic growth and therefore increased prospects for greater funding for health care (Boyce, 2002a). However good institutional and policy frameworks enhance aid effectiveness and this remains a paramount requisite for improving the prospects that aid is transformed into economic growth (Boyce, 2002b). In fact, there is a growing awareness that aid itself can be instrumental in promoting good economic governance, which in turn leads to improved aid effectiveness.

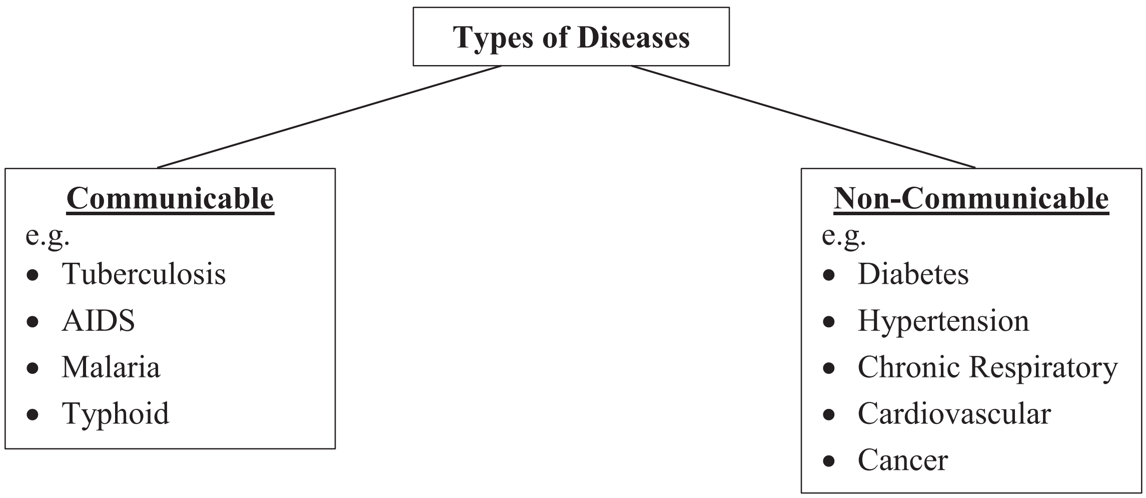
The following section provides a Typology of diseases for better understanding of non-communicable diseases.

2.2.3 A Typology of Diseases

Diseases can be broadly grouped as communicable and non-communicable diseases. Communicable diseases are diseases that spread from one person to another. Communicable diseases include food, water, water-borne and infectious diseases such as for example TB, typhoid and malaria. The spread often happens via air-borne viruses or bacteria, but also through blood or other bodily fluid (WHO, 2012b).

Non-communicable diseases (NCDs) on the other hand are bodily diseases due to changes in life-style. They are also known as chronic diseases, which are not passed from person to person. They are of long duration and generally in slow progression. The four leading non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. Figure 2.1 shows a typology of diseases with examples.

Figure 2.1: A Typology of Diseases



Source: Adapted from WHO, 2012a.

As mentioned earlier, there has been a global shift from communicable to non-communicable diseases and the burden is shifting from developed country to low and middle income nations. WHO (2010f) stipulates that globally, the NCD burden will increase by 17 per cent in the next ten years, and by 27 per cent in African region. The highest absolute number of deaths will be in the Western Pacific and South-East Asia region (ibid.). These rapidly changing health and disease trends have serious implications for poverty reduction and economic development (Pernia, 1994). NCDs have a severe impact on individuals, communities and countries. The magnitude and rapid spread of NCDs means that many in the community are headed for a sick future unless action is taken now. Low-income countries grappling with heavy burdens of infectious disease risks will be overwhelmed NCDs unless urgent action is taken (Global Risks, 2010).

The following paragraphs look at the conceptual framework for NCDs and the linkages to development, and identifies the causal pathways and risk factors for NCDs.

2.2.4 Conceptual Framework for NCDs

Disease prevention and control understanding has evolved from being a narrowly defined medical responsibility to one that is a more complex social phenomenon (Sassi and Hurst, 2008). The determinants of NCDs lie in behaviors and social conditions, rather than being the result of single biological causes (WHO, 2008a). These chronic conditions are not once-off or episodic events; they build up over long periods of time leading to disease progression that is accelerated with aging or cumulative exposure to health risks (ibid). People who acquire multiple risk factors and diseases need lifelong disease management. The complexity of managing and preventing these diseases requires interventions at multiple levels from multiple actors, ranging from behavior changes to tertiary medical care. An effective response to NCDs requires the involvement of the entire healthcare system.

A conceptual framework has been used to help identify the major determinants of NCDs, clarify the relationships among different determinants, and examine the scope and limitation of policy interventions. This approach enables further assessment of relationships, identification of gaps, and understanding of the impact on final outcomes. Both health policy and health profile can be seen to directly affect the use of health services, which in turn influences health outcomes for individuals (Sassi and Hurst, 2008). The organization of primary care settings determines the responsiveness of countries to their health situation, yet this relationship can be modified by the social environment, represented here by characteristics of the patients and personal health practices (Solar and Irwin, 2007). It may not be possible to delimit with absolute certainty the health system from the social environment, but it is possible to identify determinants of both systems.

However, there are theories such as integrative theory of the causation of NCDs, Social movement for NCDS, and developmental and degenerative causes. The integrative theory looks at psychiatric disorders and neurological diseases caused by NCDs (Davidson, 2010). The social movement theory for non-communicable diseases is not as strong as the social movement theory for the HIV/AIDS as stipulated by Yang (2013). An important factor in the growing burden of global non-communicable diseases is liberalization of trade for tobacco, processed foods, and alcohol. Many NGOs are interested in NCDs, but there is no social movement. Initiatives such as mass mobilization against NCDs have been taken but have not been successful as the HIV/AIDs movement (ibid). Activists should consider key concepts from social movement theory such as resource mobilization and approaches to framing the issue and assessing lessons learned from the HIV/AIDS movement for a movement to be built for prevention of NCDs (ibid.). The developmental and degenerative postulates that for example cardiovascular disease develops in childhood and its underlying risk factors are not well understood (Strong et al., 1999).

For this research the conceptual framework analyses diseases and pathways through which social and environmental conditions as well as individual factors influence health outcomes. A vast amount of literature has been developed in recent years on the determinants of health (Evans et al., 2001; Lurie and McLaughlin, 2003; Solar and Irwin, 2007). The role of individual and social determinants and the interactions between them have been identified. The impact of different determinants has been further distinguished by the role of structural and intermediary determinants (Solar and Irwin, 2007) and primary and secondary determinants. Primary determinants include socio-economic and demographic factors while secondary determinants encompass biological and lifestyle factors (Kosteniuk and Dickinson, 2003).

Sassi and Hurst (2008) in the Economic Framework for the Prevention of Lifestyle-related chronic diseases emphasize the importance of interactions between individual factors and specific socio-economic and environmental influences. The framework they developed focuses on preventing lifestyle-related NCDs (Sassi and Hurst, 2008). The various conceptual frameworks developed by researchers provide relevant structures and elements for analyzing the determinants of NCDs. This study adopts a framework that groups the factors that influence health and the burden of disease into ‘underlying’ and ‘individual’ sets of determinants.

Underlying determinants affect the health of the population at the macro level while individual determinants affect individual health at the micro level (Mayosi et al., 2009). This distinction highlights the role that individuals can play in the prevention and control of NCDs while identifying the socioeconomic environment that influences individual behavior and which can be changed by policy interventions (Gebhard and Kitterman, 2008). The aim of this framework is not to capture the comprehensive relationships between the determinants of NCDs nor to test these relationships, but rather to raise awareness of them for a better understanding of the pathways that lead to NCDs. This study attempts to provide a better understanding of whether these policies have increased the use of NCD services and ultimately affected NCD outcomes.

Additionally, the need for prevention efforts through well-planned, cost-effective and feasible interventions across all levels of society is therefore clear (Mayosi,et al., 2009). According to Pratt et al., (2009), for example large numbers of working adults of varying socio-economic levels and ethnic backgrounds can be reached through workplace interventions. Numerous researchers have shown that such interventions can have positive psycho-social and behavioural effects on NCD-related risk factors such as physical activity, smoking and dietary behaviours (Pratt et al., 2009). WHO recommends that companies and health ministries should adopt and strengthen programmes to improve the health and well-being of their people through health promotion and specific NCD prevention programmes (World Bank, 2011b).

In a review, Harden et al., (1999) warn that although the health ministries has enormous potential as a setting for improving the health, many programmes seem to ignore the needs and views of the target population in the planning and implementation of health promotion programmes. Many interventions focus on changing the behaviour of the individual, (Prat et al, 2007) following the ideology of "individual" responsibility of disease, thus ignoring the connection between individual behaviour and the environment in the process (McLeroy, Bibeau, Steckler and Glanz, 1988). This approach of "changing individuals" results in single level interventions, while neglecting those factors in the social and physical environment that serve to enable, facilitate and reinforce unhealthy behaviours (ibid). Sallis et al., (2008) emphasise that educating people to make healthful choices when environments are not supportive is likely to produce weak and short-term effects.

According to Green and Kreuter (2005) health status and quality of life are influenced by a combination of our genetic predisposition, the actions we take or do not take (i.e. behaviours) as individuals and groups, and a wide range of social and environmental factors, which are referred to as social determinants of health. The latter includes factors such as culture, employment, education and the physical environment. Therefore, it can be argued that successful/appropriate intervention planning should consider all these potential determinants.

Similarly Pratt et al., (2009) argues that workplace health promotion efforts must address organisational factors (e.g. socio-cultural, economic); the work environment (e.g. physical and structural) and job demands and worker characteristics. Ecological models of health behaviour emphasise these multiple levels of influence on health behaviour and quality of life (WHO, 2007). Suggestions have been made that the application of these models to workplace interventions which aim to prevent NCDs will ensure that the environmental and policy contexts of behaviour as well as social and psychological influences are incorporated in the programme (Green and Kreuter, 2005). This could contribute to the development of workplace programmes that are cost-effective and sustainable.

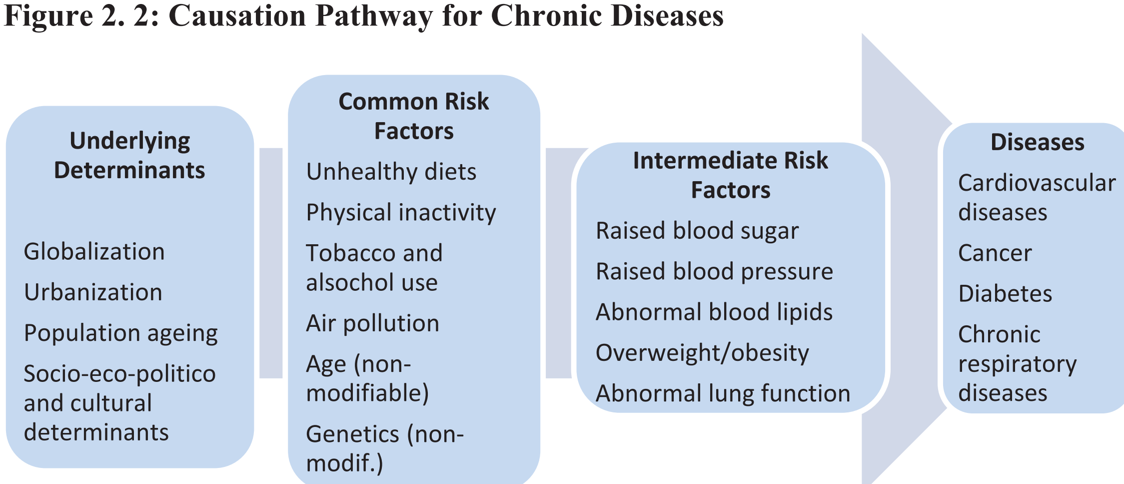
Brofenbrenner (1994) argued that in order to understand human development, the whole ecological system in which growth occurs must be considered and subsequently described this as "a concept of people existing within a system of relationships with levels of environmental influence" (Brofenbrenner, 1994). "Any change on one level automatically waves through to the next level" (ibid.).

Within the context of ecological models it is thus proposed that intervention programmes should be aimed at all relevant ecological levels, which is seen to be the most important "strength" of such models (Sallis et al., 2008). Glanz and Mullis (1988) already recognised several decades ago that while policy and environmental changes can affect an entire workforce, interventions may reach only those individuals who choose to participate.

Ecological models hold the advantage of establishing settings and incentives that may contribute to sustained behaviour change (Sallis et al., 2008). Application of such models in the development of health behaviour change programmes present challenges (Green, 2005). According to Mayosi, et al. (2009) ecological models typically present domains of variables to be considered but do not give specific guidance on which variables within each domain might be most important for the topic at hand.

Figure 2.2 shows the causation pathway for chronic diseases. The framework identifies underlying determinants such as globalisation, urbanisation, population ageing and the socio-eco-political and cultural determinants causing NCDs. The framework also identifies common intermediate risk factors. The common risk factors include unhealthy diets, physical inactivity, tobacco and alcohol use, ageing, air pollution and genetics. Some are modifiable factors and others are non-modifiable determinants example tobacco and alcohol use which can be prevented. WHO (2012a) shows that non-modifiable risk factors refer to characteristics that cannot be changed by an individual (or the environment) including age, sex, and genetic make-up. The same report shows that modifiable behavioural risk factors refer to characteristics that societies or individuals can change to improve health outcomes.

Figure 2. 2: Causation Pathway for Chronic Diseases



Source: Adapted from WHO, 2012a.

2.2.5 NCD Dynamics and linkages

The following paragraphs will look at NCD dynamics and its linkage. NCD is closely linked to ageing, gender, disability, poverty and food nutrients.

2.2.5.1 Ageing and NCDs

Global demographic change and population ageing are closely linked to prevalence of NCDs. NCDs may occur at all ages though they increase with ageing. The higher the ageing population, the greater the incidence of NCDs. Ageing increases risks of developing chronic diseases and disability. An ageing population is no longer the domain of the ‘developed’ world, but is occurring most rapidly in low- and middle-income countries (WHO, 2010c). In developing countries, the size of the over 80-year population is growing faster than that of any other cohort (United Nations, 2010a). Nearly two-thirds of the 177 million people globally with Diabetes are estimated to live in the developing world. A large number of older people suffering diabetes are living in developing countries (WHO, 2010g, cited in Helpage International, 2011).

2.2.5.2 NCDs and Gender

NCDs collectively, are the leading cause of death for women worldwide causing 65 per cent of all female deaths and accounting for 18 million deaths each year (Engelgau et al., 2011). They are a significant cause of female death during child-bearing years and for women with young families in developing countries (Seguino, 2008).

The ageing female globally outnumbers that of ageing males. Women have greater longevity despite the fact that they carry a burden of ill health (Agenor, Canuto and Silva, 2010). Gender is a structural determinant of health, meaning that it is part of the fabric of people’s lives with its norms, roles and relations, affecting exposure to risk factors and health outcomes (United Nations, 2010b).

Changes in life expectancy for women, lifestyles and reproductive patterns have introduced new and unique burdens on women’s health systems due to the growing epidemic of NCDs. Women are particularly vulnerable to NCDs given the social, gender and economic inequalities that create inequities in access to critical health services, information and life-saving technologies (Braunstein, 2012).

Although on an average women live longer than men, they are in poor health due to prevalence of NCDs. NCDs affect the health of women and girls and also the health and life chances of their children. Being born to a malnourished and NCD affected mother increases the chances of the infant suffering from under-nutrition, late physical and cognitive development, and NCDs in adulthood (Engelgau et al., 2011).

Deaths of women or men from NCDs during their most productive years (40–60) can result in tragedy for families and catastrophic expenditure (Engelgau et al., 2011). The loss of women's labour can push vulnerable families deeper into poverty, particularly in rural areas in developing countries where the number of female-headed households is increasing as men migrate for employment (ibid.). The major impact of adult female mortality on household welfare is well established, including higher mortality amongst small children, food insecurity, children withdrawn from school, increased work burden on children and loss of assets (McGregor et al., 2009). Women are often responsible for household work that is also critical to family wellbeing, such as gathering water and firewood, preparing food and tending livestock. This vital contribution is compromised by NCDs (United Nations, 2010b).

2.2.5.3 Urbanization and NCDs

Urbanization is associated with fast-paced yet sedentary lifestyles, as well as greater access to alcohol, tobacco, and consumption of foods with high sugar, salt, and fat content. Urbanisation leads to more stressful life. The consumption patterns have changed with growing urbanisation. People now prefer fast food and processed foods which has less nutritional value instead of local nutritious foods. A survey by Ibrahim and Damasceno (2012) of over 30 developing countries, found that hypertension (high blood pressure) was always more prevalent in urban and semi-urban regions than in rural areas, with the single exception of Nigeria. Furthermore, prevalence of hypertension in urban India increased by 30 times over 25 years, compared to 10 times over 36 years in rural areas (Ibrahim and Damasceno, 2012).

2.2.5.4 NCDs and Disability

NCDs aggravate disability conditions. People with disabilities also have a greater vulnerability to NCDs. The World Report on disability indicates people with disabilities experience poorer levels of health than the general population and are more vulnerable to NCDs than other groups (WHO, 2011f). The report noted that behavioural risk factors are more prevalent among people with disabilities, placing them at higher risk of chronic conditions. These findings suggest that people with disabilities have a greater susceptibility to NCDs, underscoring the particular importance of reaching this population group in NCD prevention, control and management efforts.

Disability often results from NCDs when the health condition limits a person's body function. NCDs, especially complications caused by the onset of diabetes most commonly cause disability through amputation. Physical limitations due to chronic obstructive pulmonary disease may also occur. Global statistics suggest, NCDs account for 66.5 per cent of all years lived with disability (YLDs), which will increase in line with increased NCD prevalence globally (WHO, 2013). Currently, NCD data are reported in terms of NCD risk factor prevalence and NCD related mortality in a standardized way, with morbidity statistics and resulting disability reported in varying standards (ibid). Most global NCD strategies and resources have been directed towards prevention of NCDs, with less emphasis on the situation of people already living with NCDs and NCD-related disabilities (ibid).

2.2.5.5 NCDs and Poverty

Poverty exposes people to risk factors for NCDs and in turn, the resulting NCDs may drive families into poverty. NCD epidemic undermine development, this aggravates poverty situation. The rapid rise in NCDs is predicted to impede poverty reduction initiatives in low-income countries, particularly by forcing up household costs associated with health care (Mahal et al., 2010). Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services (Mahal et al., 2010).

2.2.5.6 Food, Nutrition and NCDs

A change in dietary patterns has been led by urbanisation and an increased intake of energy-intense foods, high in saturated fats, sugar and salt. This '*nutrition transition'* is fuelling levels of overweight and obesity and is having a significant impact on the health of girls and women (Curtis, 2004). A WHO (2008a) report says that in 2008 approximately 1.5 billion adults globally were overweight and more than 200 million men and nearly 300 million women were obese. A staggering 43 million children under five years are currently overweight, and at this age, girls are more likely to be overweight than boys (WHO, 2008b).

Malnutrition and under-nutrition in women are also critical factors in the global NCD epidemic. Due to the concept of '*foetal programming'*, maternal under-nutrition during pregnancy increases the risk of the infant developing chronic conditions such as diabetes later in life. This is profoundly found in India and throughout much of Sub-Saharan African countries where high levels of under-nutrition co-exist with rapid changes in nutrition in young adulthood (Samb, Desai and Nistar, 2010).

2.2.6 Socio-economic Impacts of NCDs

The NCD epidemic hinders development of countries. Traditionally, NCDs have been seen as *'diseases of affluence'*. However, the evidences show that NCD risks are often greatest in poor and deprived communities, worsened by exposure to health hazards over the whole life-course (Helpage International, 2011). NCDs especially cardiovascular diseases and diabetes are no longer diseases that can be classified as exclusive to developed nations. Evidences suggest that the NCD burden is shifting from high to low- and middle –income countries and NCDs are both a cause and effect of poverty at all ages (Dalton and Crowley, 2000).

The chronic nature of NCDs implies protracted treatment and significant treatment costs, felt most acutely by the poor. The high treatment costs, combined with likely loss of jobs and lost incomes of the affected individual implies a heavy economic burden on the households, driving them to destitution. In India, an estimated 1.4 to 2 million people experienced catastrophic spending[14] in 2004 and 600,000 to 800,000 people were impoverished by the cost of caring for cardiovascular diseases and cancer (Wayne, 2010). Living close to the poverty line, these households face a much higher risk of falling into the poverty trap from treatment expenditure (Rabkin and Sadr, 2011). The essential drugs for treating NCDs are often unaffordable to the poor families who are already overburdened with loss of income and productivity due to a breadwinner suffering from a NCD.

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[14] Catastrophic expenditure here implies healthcare expenditure exceeding 40 per cent of a household's ability to pay (World Bank 2011a).

The high expenditure for NCD treatment makes for limited access to or lower utilization of health care services by poor income households, further aggravating their medical condition.

Furthermore, in the Harvard School of Public Health, a study has been done on economic losses due to non-communicable diseases. The estimated amount that the economic burden of these ailments for India is close to \$6.2 trillion for the period 2012 and 2013 (Times of India, 2013). This figure is equivalent to nearly nine times the total health expenditure of \$170 billion during the previous nineteen years (ibid.).

Additionally, in the Harvard School of public Health report, which is based on WHO projections of the mortality trajectory associated with NCDs, China is estimated to face output losses of \$27.8 trillion for year 2012 to 2030, which is more than a dozen times the total health expenditure during the previous nineteen years (ibid.). The economic impact of NCDs is estimated of \$2.2 trillion higher in China than in India mainly because of China's higher income and ageing population.

According to Reddy (2007), president of the Public Health Foundation of India, NCDs can impact the economy in multiple ways. Most of the NCDs, for example, diabetes or heart disease, affect the person in the productive years. They cause reduced productivity and early retirement. Also, they put immense pressure on public health expenditure as in most cases the treatment costs are higher compared to communicable diseases. Reddy et al., (2007) added that the increasing burden of NCDs could deprive India of the 'demographic dividend' it is projected to reap on account of a predominantly young population.

Research undertaken by World Economic Forum (2011) drew on macro-economic simulations suggesting the four main NCDs, would lead to cumulative output losses of \$47 trillion over the next two decades globally. Such a loss represented 75 per cent of global GDP in 2010 (Bloom et al., 2011). It also represented "enough money to eradicate two dollar a day poverty among the 2.5 billion people who live in that state for more than half a century" (ibid.).

The World Economic Forum (2011) also identified NCDs as one of the most serious threats to global prosperity, based on the likelihood and the severity of the impact of NCDs, alongside other high impact risks such as global asset price decline. Underlying these cumulative impacts lie several assumptions and estimates about the impact of NCDs on various macro-economic variables including the labour supply, overall savings rates, and capital accumulation (ibid.).

Furthermore, the US Center for Disease Control estimates that a person with diabetes spent US$ 11,744 on health care compared to US$5,095 for a person without the disease (World Economic Forum, 2011). Research also finds that those with Type-2 diabetes in USA double their probability of acquiring Alzheimer's disease, and increase their risk of dementia by 175 per cent over a 15-year period (Matsuzaki et al., 2011). Diabetes can have an adverse inter-generational effect as well. Pregnant women with diabetes have a higher risk of programming their offspring in-utero to obesity and Type-2 diabetes and other metabolic disorders (Elisaia et al., 2009).

Reducing the burden of NCDs requires a reduction in the intermediate and modifiable risk factors. To do so, the onus has essentially been on individuals. It is very difficult, however, for individuals to make healthy choices over a lifetime when their social environments continue to promote unhealthy choices or simply when choices are extremely limited. Research in Tonga, for example, clearly showed that despite a considerable sophistication and awareness of the importance of good nutrition, Pacific Islanders nonetheless choose to eat foods with "dubious" nutritional value, essentially because of cost and availability (Doran, 2003).

2.2.7 NCDs and MDGs

NCD threaten progress towards inclusive development and undermines the achievement of MDGs. The MDGs were established targets for improving the lives of people, especially the poorest, all over the world. The progress toward achieving these goals have deep and long-lasting repercussions, particularly for low- and middle-income countries (PIFS, 2012). MDG goal number 4, 5 and 6 relates to health. Theses all goals are linked to the rest of the 5 goals. One cannot be achieved without the other, all goals are interlinked.

2.2.8 Policy Interventions

The WHO (2012a) has suggested policy measures such as best buy as mentioned in chapter 4 for reducing NCDs that include increasing tax on tobacco products and alcohol and placing a ban on their advertising. It also proposes interventions such as reduced salt intake in food, counselling and multi-drug therapy for people with a high risk of developing heart attacks and strokes, and hepatitis B immunization to prevent liver cancer. According to WHO (2012c):

"The implementation of these 'best buy' interventions for reducing NCDs in low- and middle-income countries (LMICs) could lead to a 10–15 per cent reduction in premature death from NCDs (and in their economic cost)", as the Harvard researchers have pointed out".

The political declaration was also a call to adopt to combat heart disease, cancer, diabetes and lung disease and to devise voluntary policies that cut smoking and slashed the high salt, sugar and fat content in foods that caused them (WHO, 2013). During the World Health Assembly in May 2012, a global target was set of a 25 per cent reduction in NCD associated with premature mortality by 2015. The Rio+20 outcome document acknowledged the global burden and threat of NCDs as 'one of the major challenges for sustainable development in the twenty-first century' (ibid.).

2.2.8.1 Policy initiatives in the Pacific

Global, regional forums and institutions provide opportunities for countries to engage in broad policy dialogue by different stakeholders around health, trade and development, sharing experiences and devising joint strategies. Support from the World Health Organization, other UN agencies and the Pacific Islands Forum Secretariat is likely to help increase the 'political' acceptability of policy proposals in the Pacific Islands region. It is, however, important that PIC governments choose those policies that correspond to their particular epidemiologic and economic situation and develop and manage these programmes in an integrated and coordinated way (Khaleghian, 2005).

International organizations and Health Ministers of Pacific Islands Countries agreed that whilst important political commitments have been made, allocation of resourcing, and the scale-up of activities have lacked the sense of urgency required by this epidemic (PIFS, 2012). Correspondingly, regional donors, such as AusAID, are increasing funding contributions for NCD prevention and control (AusAID, 2013).

In March 2011, Pacific Island countries held a meeting on the 'Revitalization of Healthy Islands' that focused on NCD prevention and control and generated the Nadi Statement (PIFS, 2012). The statement then contributed to the 'Seoul Declaration', which recognizes and responds to the serious and rapidly growing adverse impacts of NCDs on individuals, families, communities, health systems and national economies. Following the adoption of the 'Seoul Declaration', the Pacific Ministers of Health in the Biennial meeting in June 2011 developed the 'Honiara Communiqué' in which earlier commitments calling on Pacific Islands Forum Leaders to declare NCDs a health and development crisis were echoed (PIFS, 2012). Governments were urged to integrate NCD prevention and control into national development agendas, and mobilize additional international and local resources towards the cause, while calling for a coordinated regional response to the crisis (ibid.).

A higher profile of NCDs, recognition of the social determinants of health and bold targets have led Pacific Islands Countries to the adoption in 1995 of a "setting-based" – social determinants of health – approach called 'Healthy Islands' (Fiji Ministry of Health, 2013). Central to the 'Healthy Islands' vision is the "involvement of communities in the decision making process and collaboration across sectors for the social good" (ibid.).

The Samoan government, for example, has initiated a "Health in All Policy" approach, mainstreaming health and NCDs in its national development plans, and has also established a Parliamentary advocacy group for implementation (Thow et al*.,* 2010b). The Palauan government has also developed a model based on a "Command Centre" to implement multi-sectoral actions (OHCHR and UNDP, 2013). There is also increased cooperation between countries in this area, facilitated by SPC and WHO.

Moreover, there are increased efforts at non-government level in educating the public as to the impacts of unhealthy diets and encouraging people to eat more local foods. This is supported by government led targeted ‘buy local’ advertisements and regulated food advertising to children of Fiji (Fiji Times, 23rd September 2013). The essential roles of civil society and faith based organizations and churches in advocacy are critical. The role of civil society institutions is also essential to hold governments accountable. Governments have largely abdicated the responsibility for addressing obesity to individuals, the private sector, and non-governmental organizations (Schroder et al., 2004).

Furthermore, an increasing number of Pacific Island Countries are willing to introduce taxes on sugary drinks and fatty foods, and this trend has an undeniable impact on other countries in terms of the acceptability and familiarity of this approach. Fiji, Samoa, Nauru, and French Polynesia introduced a tax on sugary foods including soft drinks, and taxes led to increased revenue for these countries. Fiji and Tonga wish to further regulate supply of fatty meats to control intake. Besides, many countries in the region hope to implement price controls on healthy items such as fish, fruits and vegetables, or to provide subsidies for these foods (Fiji Times, 23rd September 2013).

2.3 Conclusion

This chapter has provided a conceptual and theoretical framework and linkages of aid and health, especially NCDs, to poverty, disability, socio economic cost, urbanization and development. The link between aid and health provides a clear view of the importance of aid and its effectiveness to be maintained. The chapter also explored different policy options for tackling NCDs. The literature survey showed that the Pacific Islands Countries lack a comprehensive academic study on NCDs and donor funding for NCD prevention. The volume of aid given to health sectors is high globally. However, research shows that little progress has been made and there are ways in which aid can be monitored well and effective health services can be achieved.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the research approach and methodology adopted for the study. It starts with a general discussion on the conceptual methodological approaches. Having done that, it then discusses the sources of data and research design for this study including methods of data collection and analysis. The sampling study area, limitation of research and ethical considerations governing the study are also discussed in this chapter.

3.2 Methodological Approaches

Prior to choosing the methodological approach for data collection, identifying ethical issues pertaining to the research, and addressing practical issues concerning fieldwork, a thorough review of the existing literature on the research topic was undertaken. This provided a good understanding of what had already been done and what was currently known about the research topic. In the process, a gap became apparent, indicating a need for further research (Fink, 2005). Such a review of the current literature enables the researcher to situate the research subject in the existing body of knowledge (Potter, 2002).

Amongst the social and natural sciences, two important philosophical approaches persist. There are a 'positivism[15] and post-positivism[16]' approaches that dominate both the sciences especially the social sciences. Positivism approach entails the assumption that objective reality exists and by using the right scientific research method, the reality can be discovered. Here, the epistemological position is that the 'observer' and the 'observed' are independent of one another. An interpretation

[15] Positivism means "scientific" and positivist methodologies argue it's possible and desirable to study social behavior in ways similar to those used by natural scientists to study behavior in the natural world (Roger, 2000).
[16] A post-positivist research approach advocates methodological pluralism. It is based on the assumption that method to be applied in a particular study should be selected on the research question been addressed (Roger, 2000).

and understanding of the objective reality means the researcher is looking in from outside rather than inside. It also presupposes that there is a universal truth that can be understood using quantifiable scientific models. Some scholars (Douthwaite et al., 2001) call this the, 'quantitative research' that sets up hypotheses and tests them with quantifiable experiments.

Alternatively, there is another research methodological approach known as the 'constructivist' approach or 'constructivism'. Epistemologically, this approach assumes that knowledge is maximized when distance between the inquirer and the participants in the study is minimized. Furthermore, it holds that the voices and interpretation of those under study is key to understanding the phenomenon of interest, and subjective interactions are the primary way to access them. The outcome from 'constructivist' approach is the product of the interaction between the inquirer and the participants.

This research approach is 'qualitative research' and is frequently utilized in the social sciences. In this study, the researcher adopted a convenience sampling technique to gain access to people with diabetes in the study area to study.

Roger (2000) defined qualitative research as "research that represents human beings as whole persons living in dynamic, complex social arrangements." A qualitative fieldwork approach enabled the researcher to gain valuable insights from an individual perspective, whereas quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques and mixed methods will be used in this thesis.

A research sample refers to an original, creative and systematic investigation undertaken in order to add to the account of generalizable knowledge, both theoretical and practical (Walsh, 2005:78).

Another research methodological approach is called Pragmatism[17]. Pragmatism as a research philosophy does not restrict the researcher in the process of inquiry and interpretation of data. Its ontology, epistemology and methodological orientations are flexible. Researchers study issues that have important social consequences for them. Human behaviour cannot be completely understood using quantitative statistical methods.

The focus of this research was aimed at the micro-level, assessing the effectiveness of AusAID support on NCDs. The research is largely qualitative and "triangulation" was employed for enhancing the validity of the study. Triangulation is often used to indicate that more than two methods are used in a study with a view to double (or triple) checking results. This approach will consist of quantitative and qualitative methods.

3.3 Sources of Data

For this thesis, both primary and secondary sources of data were used. The primary data were obtained through participant observation, informal discussions, focus group discussions with Fiji's Ministry of Health and AusAID. Two sets of questionnaires (Appendix 1) were prepared for the surveys undertaken in the study area. The first questionnaire was used for NCD affected people in Suva while the second was used to collect information from key government and AusAID officials.

Apart from the primary survey, the aid-related data from the secondary sources were gathered and analysed. These secondary sources included books, journals and various reports including government reports such as Fiji's National NCD strategy as well as other reports by local, national governments, institutions and regional and international organisations or agencies. These sources dealing with the issue of aid, health, development and the effectiveness of aid in creating an

[17]For pragmatists, methods can be both quantitative and qualitative. Logic or the chain of reasoning is inductive and deductive. In epistemology, pragmatists hold both subjective and objective points of view. In terms of axiology (role of values in inquiry), pragmatists assert that values play an important role in an inquiry. Ontology (nature of reality) consists of two parts: (i) pragmatists believe that there is an external reality existing independent of our minds; and (ii) it is denied that truth can be determined once and for all. This is similar to the constructivist view that multiple social realities produced by human intellects may change as their constructors change. For pragmatists, reality is what works (Strauss and Corbin, 1990).

environment for improved health and consequent a stronger development performance were reviewed.

3.4 Research Design

The research design for the study includes methods of data collection, sampling and methods of research analysis. The positivism is the main methodological approach underpinning of this research.

3.4.1. Methods of Data Collection

Questionnaires, interviews, observations, focus group discussions, case studies and key informants discussions were used to collate primary data. The following section provides a brief account of each of these methods of data collection.

3.4.1. 1. Questionnaires

Both structured and semi-structured questionnaires were used in the survey. A structured questionnaire was designed after a thorough review of relevant literature about the subject. The structured questionnaire was used by the researcher with the NCD affected people. The questionnaire was designed in such a manner as to accommodate all the issues concerning the focus of this study. As Hausfeld (cited Mayer, 1974) stated, “the best questions are unambiguous, neutral and in the case of forced choices, cover all likely cases”. The first section of the questionnaire sought to understand the background information of the respondents. The second part of the questionnaire covered questions on the status of NCDs. These questions were collected for an understanding of issues as well as how the people in the study area were affected and why (Appendix 1).

The second questionnaire was designed for the officials in Fiji Ministry of Health and AusAID. The questions were mainly open-ended. This designed was adopted so as to provide ample scope for in-depth institutional responses on NCDs relating to diabetes.

3.4. 1. 2. Observation

Observation is a very important method of providing first-hand information from the study area. The researcher interviewed people from the Diabetic Clinic Centre at the Colonial Memorial Hospital (CWM) to obtain first-hand information about the difficulties, challenges and constraints they face.

Face-to-face interviews were very helpful as respondents shared their experiences, thereby providing a greater understanding of the subject. The researcher had a greater chance to ask more probing questions and to encourage respondents to elaborate on their answers. This method provided the researcher with further insights into the NCDs related issues and other useful information.

3.4.1.3 Key Informants

Key informants are people who are more knowledgeable in their respective work or field (Mikkelson, 1995). Key informants for this study were drawn from AusAID and Fiji Ministry of Health personnel who were more knowledgeable and well informed about the issues covered in this study. This provided a much deeper understanding of different aspects of NCDs.

3.4.1.4 Case Study

Case study as defined by researcher Yin (1984) is a research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984). Case study research excels at bringing to an understanding of a complex issue. It extends experience and adds strength to what is already known through previous research. Case studies emphasize detailed contextual analysis of a limited number of events, conditions and their relationships. Researchers have used the case study research method for many years across a variety of disciplines (ibid). In particular social scientists have made wide use of this qualitative research method to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods.

Case study adopted to examine the risk factors causing NCDs and also the dynamics contributing to NCDs.

3.4.2 Secondary Data

As mentioned earlier, the secondary sources of information included various government reports. The reports that were consulted included, for example, the National Strategic Plan for Fiji, WHO global status report, Economic costs of non-communicable diseases in the Pacific Islands, AusAID's Fiji Country Strategy 2012–2014, AusAID's Pacific Regional Aid Strategy 2004–2009 and Fiji Health Sector Support Programme. These secondary sources of information played a pivotal role in assisting the researcher in understanding the historical, social, political, economic, environmental and cultural aspects of Fiji.

3.4. 3 Sampling

Most of the social sciences have been concerned with classifying different 'types' of behaviour and distinguishing the 'typical' from the 'atypical' (Mays and Pope, 1995). The issue of similarity and differences leads to the use of various statistical sampling techniques.

Sampling methods such as random sampling are relatively uncommon in qualitative research. Most qualitative data collection methods are time consuming and expensive. Given this constraint, it is not practicable to employ probability sampling. An alternative approach used in qualitative research is non-probability sampling. In non-probability sampling, the purpose as noted by Mays and Pope (1995) is:

"…not to establish a random or representative sample drawn from a population but rather to identify specific groups of people who either possess characteristics or live in circumstances relevant to social phenomenon being studied".

Primary research data were gathered through questionnaire survey. The sampling technique used was convenience sampling[18]of a non-probability type. A "convenience sampling is used as the population is just too large that it is impossible to include every individual" (Castillo, 2009). The researcher undertook convenience sampling to identify respondents from the diabetic centre. It was also convenient because the researcher through contact knew that most diabetic patients will be available to interview as they come for their clinics. Fifty respondents were selected from among the NCDs-affected population in the greater Suva area. As such Diabetic Clinic and Eye Clinic were chosen as diabetic patients visit these places for treatment. The other reason to go to these 2 clinics was to get an honest answer from diabetic patients as to if they were coming for their daily check-ups and also how they were been assisted.

3. 4.3.1 Sample Size

The researcher selected samples from those whom she considered were affected by the NCDs in Suva City. As noted above, the purpose is to gain a deeper insight into issues NCD people are suffering from as groups of people who lived under the circumstances of the phenomenon being studied. A total of fifty affected patients were surveyed by using the structured questionnaire. The fifty patients were interviewed at the Diabetic Clinic and Eye Clinic Centre, Colonial War Memorial Hospital (CWMH) in Suva. Of the 50 respondents there were 39 Indo-Fijians and 11 indigenous Fijians, 16 male and 34 females. Difficulties were faced in contacting the Diabetic Centre as staff were occupied in assisting the patients. However, upon following up and making a physical visit to do face-to-face discussion, it became possible.

An ethical clearance letter from USP was obtained to present at the clinics before conducting interviews with the participants.

[18]Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Castillo, 2009).

3.4.4 Methods of Research Analysis

The data collected were put in suitable tabulation and relevant graphs, and figures were prepared for analysis.

For the questionnaire, a coding booklet was produced to assist in the analysis. The questions in the questionnaires were pre-coded and later tabulated. Tabulation was done so as to draw out the main themes according to individual questions in the questionnaire. Tables produced from the code booklet sought to draw out some statistical representation of variables that the questionnaires attempted to generate. This was later converted into tables and graphs using Microsoft Excel Programme to ensure easy summarization of data.

The adoption of Microsoft Excel Programme was used because the analysis of results does not intend to test for any possible causal relationship between variables, but simply identification of variables that have affected NCD patients in Suva.

For all interviews, transcriptions were made to identify main themes or ideas that the researcher sought. As noted earlier, although some quantitative presentation is made, the overall research analysis was qualitative. The presentation of data in the forms of tables and graphs only facilitates proper and easy analysis of data.

3.5 Study Area

Suva is the capital city and largest urban centre in the Fiji Islands, where the bulk of the country's population live. The City has high concentration of NCD affected people. It is the centre of concentration of urban infrastructures such as housing, and road and transport. Suva is also the political and administrative centre where government and international agencies work and coordinate urban functions. The findings of various reports about urbanization and the first-hand experience of the researcher have influenced the selection of this study area.

3.6 Limitations of the Study

The major constraint on the study was unavailability of the latest required data as there has been no systematic studies been done in Fiji on NCDs, especially not on measuring the effectiveness of aid to health services. This puts limitations on systematic generalizations. Some of the participants were reluctant to give accurate information about their condition, for personal confidential reasons. This limited the amount and quality of data collected for analysis. For checks, different methods of data collection were used including observation. There is lack of proper methodological approaches for aid effectiveness related study. Due to time and financial constraints, the research was limited to samples drawn from CWMH's Diabetic Clinic and Eye Clinic.

3. 7 Ethical Considerations

A researcher who engages in data collection through interviews or questionnaire must always place emphasis on anonymity and confidentiality. Respondents' responses to both interviews and questionnaires depend to a large extent on how well the researcher is able to guarantee anonymity and confidentiality and build their confidence.

For this study, the interviewees consisted of Fiji Islanders (both men and women) who resided in Suva City. Participants were given a hundred per cent assurance about the purpose of the study and the researcher built their confidence to allow them to engage in discussion on issues pertinent to this study. The researcher also sought the permission of the respondents before taking photographs. Participants were assured that the interviews and the photographs taken would be used only for study purposes.

To build rapport and gain the trust of the participants, the researcher explicitly introduced the purpose of the research and the use that would be made of the information gathered, as a first step. This served as an ice-breaking technique that helped to create a closer connection between the participants and researcher.

As noted, keeping interview information confidential and the identities of participants' private is an important ethical issue in any research (Scheyvens, Nowak, & Scheyvens, 2003). Privacy of the participants was observed throughout the interview. When being interviewed at the Diabetic and Eye Clinic Centre, the participants' were allowed to pick a place away from where the rest of the patients were waiting to be seen by the doctors. This enabled privacy for the interview or conversation with the participant.

3.8 Conclusion

This chapter has provided a background of methodological approaches and research methodology and methods used in this study. It provides the details of research design for the study, including data collection and analysis methods and justification for the adoption of these methods. A presentation of sources of data as well as data analysis methods are covered in this chapter. Finally, the chapter provides an account of research limitations and ethical considerations involved in this study.

CHAPTER FOUR

BACKGROUND OF FIJI ISLANDS AND SUVA

4.1 Introduction

The chapter provides a brief background of the Fiji Islands in which the study was undertaken. Besides providing a geographical, demographic, and economic account, the chapter focuses on the information on NCDs and their linkages, climate change, food and nutrition and aid at the national level. These information are pivotal in facilitating and understanding of the study.

The chapter also provides a background of Suva, its historical evolution, social and economic characteristics and environmental setting. Having presented these aspects, the chapter then focuses on an overview of aid in Fiji and its linkage to health and NCDs in particular. The prevalence of NCDs and the health services in a country is linked to its geography including weather and climate, history and demography, economy and levels of economic development. Therefore, a brief description of each of these background information is essential in contextualizing the study.

4.2 Geography

Fiji is located in the heart of the Pacific Ocean between the equator and the South Pole, at latitude of 15° and 22° South and longitude 175° and 178° East. Previously known as “Fiji Islands”, it is comprised of approximately 330 islands of which two-thirds remain largely uninhabited. Fiji’s total area is 18,333 square kilometres (Go Fiji, 2011). Broadly, Fiji is divided into two major island groups: Viti Levu and Vanua Levu. About 80 per cent of population lives in Viti Levu. Suva is the capital city of Fiji.

Given its central location as shown in Map 4.1, Fiji is often referred to as the ‘hub’ of the South Pacific. Suva was officially declared the capital of Fiji in 1882, taking over the title from its predecessor, Levuka. With the exception of Nasinu (which also falls within the greater Suva area), Suva is the most populated municipality in Fiji and has become the nation’s political and administrative hub. Additionally, it is the largest and most diverse city in the island South Pacific.

Most of Fiji's terrain is mountainous which is considered as a major hindrance for people from community area to reach to the hospitals. The geographic terrain conditions-including Mountain, characteristics, rivers, geographic remoteness and lack of connectivity-affect greatly the health services, and increase stress and anxiety of people, who do not reach to health centres for regular check-ups. People are not able to visit the hospitals due to heavy rainfalls, bad road conditions and irregular transportation. This causes more anxiety and stress to people and as such contributes to NCDs.

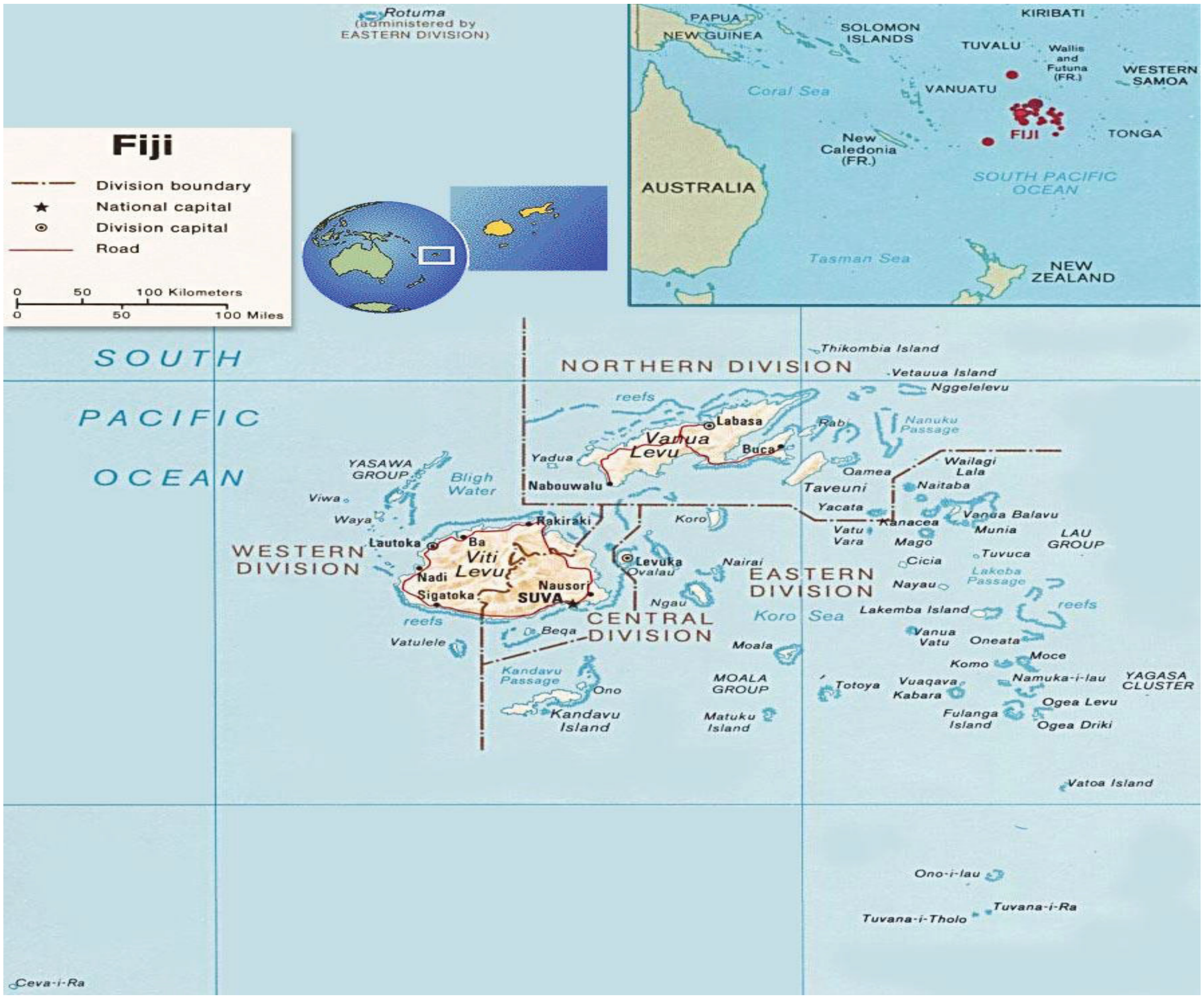
There are some very isolated parts of Fiji. In general, ethnic Fijians tend to live further from urban centres than Fijian Indians. Many more Fijians reported needing to walk to clinics or use methods such as horse, bamboo raft or motorcycle to get there (Basu et al*.,* 1999). In most cases when people are sick they have to carry sick people from the village up the mountain until they reach the main road. At night difficulties are faced as they cannot carry the sick patients up the mountain because of the steep slope and narrow track.

However, the ocean environment includes coral reefs, lagoons and deep pelagic areas, all of which teem with fish. This is and added advantage to Fiji as people living by the sea should eat fresh fish as opposed to processed food. However, due to remoteness people are living the villages and moving to the city.

4.2.1 Weather and Climate

Fiji has an oceanic tropical climate. The high islands have distinct wet and dry sides due to prevailing wind patterns; rainfall is typically 60 per cent higher in SE Viti Levu than it is on the west and North West of the island. The South Pacific Convergence Zone (SPCZ), a zone associated with high rainfall, fluctuates northeast to southwest of Fiji (SOPAC, 2010).

Map 4. 1 Map showing location of the Fiji Islands



Source: Realneo[19], 2011.

Fiji lies in an area normally traversed by often severe tropical cyclones, which occur mostly during the November and April wet/cyclone season. Cyclones bring about severe flooding and landslips, which destroy assets, disrupt agriculture and commerce, interrupt essential social services, and contribute to diseases. People get affected during floods especially and lose their vegetable farms, belonging amongst many other belongings which lead to stress, less income, sickness due to unclean water after flooding, all in all leads to health issues.

[19] REALNEO is a free social network, secure, open-source virtual community dedicated to optimizing Northeast Ohio (NEO).

4.2.1.1 Climate change vulnerabilities and NCDs

While flooding has been a significant problem in the past, the frequency and severity of these floods appears to be increasing (SOPAC, 2010). Climate change and climate variability and the associated expected intensification and frequency of high rainfall/cyclone events and increased sea levels (reducing the ability of flood waters to drain from low lying areas) is a critical issue that greatly increases the need for an integrated approach. Given the consequences in the Western Division, people move to Suva for better opportunities raising the level of urbanization.

These risks are increasing as a result of climate change and development impacts. For example, modern lifestyles typically result in less physical activity at home and at work; while climate change is already affecting the food we eat, the water we drink and the environments in which we live. Besides physical inactivity, idleness increases with adverse climate change conditions, leading to NCDs.

Poor nutrition is a major health issue, particularly among the indigenous peoples (Jansen, Parkinson and Robertson, 1990). Challenges range from the loss of traditional food sources due to environmental and climate changes and loss of land or territory to shifts in diet, such as eating more processed foods. Extreme climate change effects such as floods, cyclones and other natural disasters increase stress and anxieties especially in the remote areas and affect the health services and aggravate NCD incidence.

4.3 Brief History of Fiji

It is estimated that Fiji was first inhibited by Melanesian and Polynesian ancestors about 3,500 years ago (Mavoa and McCabe, 2008). Prior to the colonization of Fiji by the British, the native Fijians lived in their own communities and lived a traditional lifestyle which involved hunting, gathering and subsistence farming. Hardly relying on processed food.

4.3.1 History of Aid Programmes in Fiji

Fiji, as one of the most developed countries in Pacific has, since gaining independence in the last quarter of the last century, been among the world's top ten recipients of Official Development Assistance (ODA) on a per capita basis. Until the mid-1990s, most of the Pacific countries were receiving aid from their erstwhile colonial masters for budgetary support. With the introduction of reforms in Overseas Development Assistance delivery in the late 1990s with focus on programme-and-project-tied aid, it was expected that aid would directly facilitate creation of much needed growth enhancing infrastructures, physical as well as social, since domestic savings were found to be insufficient to finance them (Hughes, 2004).

Since 1970 Fiji has received €22 million per annum in foreign aid, (20 per cent in cash grants) equal to 3.5 per cent of total government expenditure. The largest contributor has been Australia (33 per cent), which has concentrated on assistance for institutional capacity building, health and education; the European Union has given 26 per cent, Japan 16 per cent (infrastructure) and New Zealand 12 per cent (health, education, poverty, gender) (Aumua, Lewis and Roberts, 1999-2004). EU aid to Fiji has totalled €217.4 million. (including European Development Fund 9) of which € 102.5 million was allocated under the National Indicative Plans (Fiji Ministry of Information, 2013).

Overseas Development Assistance to Fiji is set to reach $110 million by 2014 if assistance from development and donor partners and relationships continues to strengthen (Fiji Ministry of Information, 2013). Currently, ODA to Fiji stands at a little more than $90m with infrastructure, health care, education and disaster rehabilitation getting most of the assistance (ibid.). The ODA is very critical and goes in line with Government's aim to improve various sectors. The Roadmap 2010 to 2014 set out government's strategic framework to achieve sustainable democracy, good and just governance, socioeconomic development and national unity. ODA to Fiji is in the forms of: cash grants, aid in kind, technical cooperation/assistance, and concessional soft loans.

Since 2006, development assistance has generally fluctuated, with the annual value ranging from $60m to $77 million (Fiji Ministry of Information, 2013). For 2011, there has been a significant increase from $73 million (2010's level) to $101m, an increase of $28m. A large proportion of aid is aid in kind, which on average accounts for 90 per cent of total donor assistance with cash grants making up the remaining 10 per cent (ibid.). For 2011, assistance to the social sector represents about 63 per cent of total ODA (Negin, Irava and Morgan, 2012). The balance of 37 per cent is spread equally among the economic, infrastructure and general administration sectors. There are some donors who have significantly increased their contributions to Fiji over the years like China. For 2013, Australia is projected to be the largest donor, followed by China, Japan, New Zealand and the EU (ibid.).

Increasing integration with the global economy is an essential element in response to the challenge of globalisation. As a small island open economy prone to natural disasters, and given its geographical location, it is important for Fiji to strengthen its bilateral or multilateral relationships with other countries to further develop and enjoy maximum opportunities in terms of available assistance.

4.4 Socio-cultural Characteristics

The majority of the nation's population resides along Viti Levu's coasts, with a significant portion of the population concentrated in the greater Suva area as well as other smaller urban centres such Lautoka. The iTaukei are scattered throughout Fiji either in villages or urban centres, with Fijians of Indian descent living primarily close to urban centres and in cane producing areas of the two main islands. However, with the expiry of land leases, a notable number of Fijians of Indian descent have migrated to urban areas. (Fiji Islands Bureau of Statistics, 2004).

4.5 Demography and Population Characteristics

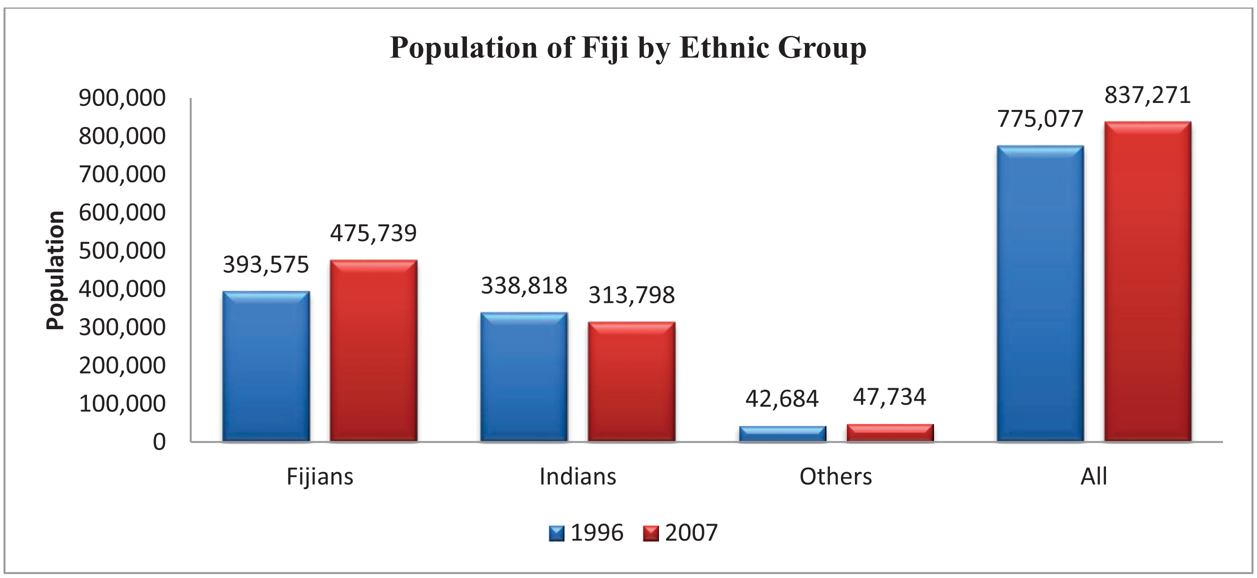
A notable increase of 9 per cent in Fiji's population has been noted between 1996 and 2007, with the population increasing from 775,077 to 837,271 in the 11-year period. Figure 4.1 shows population by Ethnic group in Fiji (Fiji Islands Bureau of Statistics, 2008).

The latest national census was conducted in 2007 and indicated a total population of 837, 271 of which 80 per cent and 16 per cent live on the main islands of Viti Levu and Vanua Levu respectively (Fiji Islands Bureau of Statistics, 2007a). As evidenced by the census, Fiji has a relatively young population with circa 50 per cent (402,991 people) of the population below the age of the 25 years.

The number of people aged 60 years and above was estimated at 62,940 or about 8 per cent of the total population. It is estimated that 18,000 births occur each year in Fiji, with a crude birth rate and crude death rate of 21.0 and 7.2 per 1000 respectively (Fiji Islands Bureau of Statistics, 2007b).

There has been on-going migration of people from rural to urban, given concentration of bulk of economic activities being focused in and around urban areas. The 2007 census undertaken by the Bureau of Statistics evidenced that the population of people living in urban areas hiked from 359,495 to 424,846. On the other hand, population of rural area dwellers dropped from 415,582 to 412,425 (Fiji Islands Bureau of Statistics, 2011).

Figure 4.1 Population of Fiji by Ethnic Group, 1996 and 2007

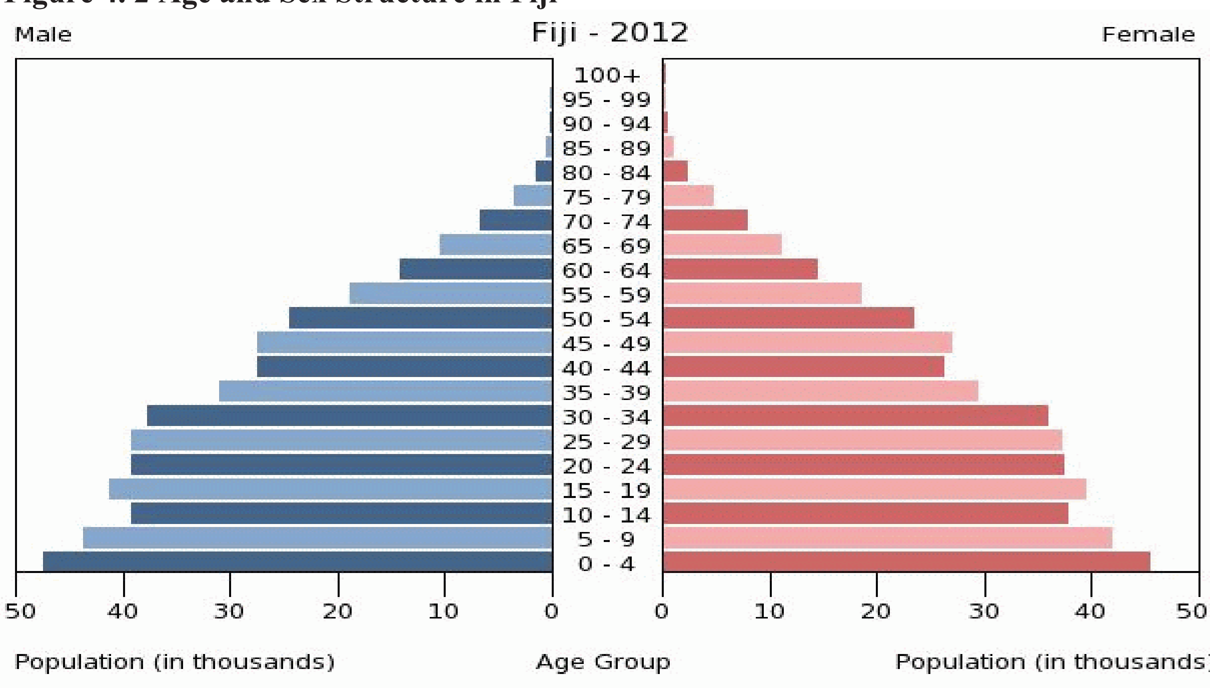


Source: Fiji Islands Bureau of Statistics, 2011.

4.5.1 Age and Sex Structure

Fiji's population is relatively young. About 13 per cent of the population is over retirement age according to estimates made in 2012 (Fiji Islands Bureau of Statistics, 2010a). Fiji's population of children up to 14 years was 28.6 per cent in 2012, from which 130,155 was male and 124,565 female. The age group 15 and 24 years was 17.6 per cent in 2012; of them, 80,163 were male and 76,528 female. The largest age group, between 25 and 54 years was estimated at 41 per cent (male: 186,736 and female: 178,073) (Fiji Islands Bureau of Statistics, 2010b). Fiji's age structure is shown in Figure 4.2.

Figure 4. 2 Age and Sex Structure in Fiji



Source: Fiji Islands Bureau of Statistics, 2013.

4.5.2 Mortality in Fiji

The circulatory system diseases are emerging as the major cause of deaths in Fiji. In 2009, about 41 per cent of causes of death were circulatory diseases, nutritional and metabolic diseases accounted for 18 per cent while neoplasm contributed to 10 per cent of the mortality (Fiji Islands Bureau of Statistics, 2011). These statistics indicate that diseases are the leading cause of death in

Fiji. As shown in Table 4.1, diseases related to nutrition and metabolism have contributed to high mortality rates, which indicates the prevalence of unhealthy lifestyles in Fiji.

Table 4.1 Mortality by type of Diseases in Fiji

Diseases	**Mortality (%)**
Diseases of circulatory system	40.52
Nutritional and metabolic	18.00
Neoplasm	10.18
Parasitic Diseases	6.20
Diseases of respiratory system	5.57
Injury, poisoning and result of other external causes	4.84

Source: Fiji Islands Bureau of Statistics, 2011.

4.5.3 Urbanization in Fiji

In recent times, urbanization has moved to the forefront of critical demographic concerns in Fiji (ADB, 2012). According to the 2007 census, the proportion of people living in and around urban areas increased from 30 per cent in 1960 to 49 per cent in 2000, which further hiked to 51 per cent in 2007 (Fiji Islands Bureau of Statistics, 2008). These statistics are likely to increase further, taking into account that economic development is mainly concentrated in and around urban centres. This has acted as a magnet for rural dwellers, especially young adults. This rural to urban drift has contributed significantly to various issues such as squatter settlements as well as increased pressure on public services.

In Fiji, rapid urbanization and the nutrition transition have been happening and related changes have been observed among all segments of society. In addition to nutrition transition, high urbanization rates in Fiji have negatively affected lower income earners and created an uneven transition of diets. These populations now have the availability and means to acquire a more modern diet, which includes more fats and sugars and less of the traditional diet of fibre and protein. (FAO,1993). These types of food are becoming more accessible, especially urban migrants who look for cheap and quick-to-cook products to accommodate their more fast-paced and expensive lifestyle in city areas. Availability of cheap vegetable oils and fats has resulted in greatly increased fat consumption among low-income nations.

Consequently, the nutrition transition now occurs at lower levels of the gross national product than previously and is accelerated further by high urbanization rates (Drewnowski and Popkin, 1997). This trend can also be seen in the United States and other countries today; the economy is finding easier ways for the population to eat that do not cost as much, but this has consequences. There has been an epidemiological transition as there has been a rise in the incidences of non-communicable diseases compared to infectious and nutrient related disease before. "Rapid urbanization is accompanied by unhealthy dietary practices, sedentary lifestyle and obesity, all of which are major risk factors of NCDs. All these risk factors are lifestyle-related and are influenced by change from rural to urban lifestyle" (Yadav and Krishnan, 2008).

In addition, less physical activity is associated with urban diet because there is less work to get or cook these foods. In Fiji, there has been an effort to create healthier eating habits in areas that have the means to do so, but in lower income areas the pace of urbanization has surpassed economic growth. "For example, while urbanization in more industrialized countries was associated with economic growth and prosperity, but in many developing countries, it results in urban poverty" (Vorster et al., 1999).

Urban areas are witnessing a higher poverty level because rural populations are migrating to areas near big city centres but still living in poor conditions. "Urban agglomeration has been linked to the shift of poverty toward the urban areas, particularly toward squatter and slum areas. The rates of population growth are far greater in urban than in rural areas because of the continuation of long-term patterns of migration" (Drewnowski and Popkin, 1997:35).

In addition, urbanization in these areas is developing at such a rapid pace that the migrants of traditional indigenous populations are more vulnerable and at a higher risk of NCDs. The rural to urban migrations are interwoven with the nutrition transition from traditional foods to more processed foods, high in fat and sugar, which result in an overall unhealthy diet and the addition of a more sedentary lifestyle. Further, circular migrants also carry novel urban food ways back to rural areas, elaborating the spread of the nutrition transition.

4.6 Economy and Economic Development

Although globally Fiji is categorized as a middle-income developing country, it is one of the more developed economies in the South Pacific with an annual GDP of USD2billion. Despite this the country remains susceptible to changes in the global economy (Fiji Islands Bureau of Statistics, 2011). The phasing out of the preferential price agreement by the European Union, which was an inevitable effect of globalisation and was a necessary effect of WTO rules, has led to major problems for the sugar industry (WTO, 2011). The sugar preference that had made Fiji's inefficient sugar industry viable simply had to be dropped. Additionally, expiring land leases also contributed to the declining sugar cane industry in Fiji. Fiji's other main agricultural exports include copra, ginger, dalo and yaqona, which brings significant revenue. In recent times, timber and mining have also become focus areas for revenue generation (ibid.).

4.7 Poverty, Unemployment and Inequality

The incidence of poverty within Fiji, measured by the percentage of the population below the basic needs poverty line, was 35 per cent in 2002–03 and 31 per cent in 2008–09 (Narsey, Raikoti and Waqavonovono, 2010). The incidence of poverty in urban areas declined from 28 per cent to 19 per cent, while it increased in rural areas from 40 per cent to 43 per cent in the same period (ibid.). Poverty is a multi-faceted issue in Fiji as in all countries. The Fiji MDG report assessment of MDG 1 (Eradicate extreme poverty and hunger) reveals that Fiji has reduced the proportion of people in hunger, albeit inadequately for achieving the target of eradicating poverty and unemployment by 2015 (Narsey, 2007). The overall reduction in poverty appears inconsistent with Fiji's poor economic growth performance during these years.

However, economic growth diverged across regions, and the sub-national poverty trends mirrored these patterns of economic growth. While urban sectors benefited from high growth in output, agricultural output generally declined. Consequently, rural areas showed no decline in poverty. In addition, a sizeable concentration of households was near the poverty line. In other words, many households remain highly vulnerable to falling below the poverty line. Subdued economic conditions, high inflation and lack of job opportunities could reverse the decline in poverty. Fiji's economy contracted for two consecutive years since 2009 and is only slowly recovering since 2011 (AusAID, 2013).

In addition, inflation, at 7.7 per cent in 2011, is yet to decelerate since climbing in 2008. However, remittances remain an important lifeline for many households in Fiji and inflows are recovering from the adverse impact of the global financial crisis (Abbott and Pollard, 2004). Moreover, the Government of Fiji is committed to addressing poverty. In 2010, the Government introduced a Food Voucher Programme, expanding social welfare support to the disadvantaged under the Family Assistance Programme. Government also increased the income tax threshold and pumped in F$11 million to improve the living conditions of squatters (PIFS, 2012).

The employment-to-population ratio fell between 1996 and 2007, while there were 39 per cent of workers in vulnerable employment in 2005 (Narsey, 2007). No data on labour productivity were available. The decline in employment level is probably a result of the relatively depressed economic conditions during this period, led by the adverse effects of the 2000 and 2006 coups and various natural disasters. Although the economy rebounded in 2011 after two years of decline, medium-term prospects remain weak, given on-going structural weakness and political uncertainties. As a result, employment conditions are unlikely to recover significantly from the levels recorded in 2007. Fiji has a low prevalence of underweight children and a low proportion of the population below the basic food poverty line. Authorities are more concerned about overweight children and malnutrition due to poor diet practices, linked to the NCDs epidemic in Fiji (PIFS, 2012).

While rural livelihoods have ceased to be a drawcard for some time in Fiji, urban formal-sector jobs have not been increasing at a rate to absorb the 17,000 school-leavers each year. Only 1,500 to 2,000 jobs are available annually for them. The presence of large numbers of unemployed puts downward pressure on wage levels, especially for unskilled and semi-skilled labour. It is little wonder that the Fiji Poverty Report found that 86 per cent of Fiji's poor (based on out-of-date surveys) were the working poor. Income distribution is skewed heavily in favour of business, the professions and the salaried. Agricultural, garment factory, construction and transport workers, clerical and retail employees, security guards and even police personnel constitute more than 40 per cent of the poor in Fiji. Destitutes include deserted women with children, street children, urban unemployed youth, dependent elderly, the disabled and the chronically sick squatters (PIFS, 2012).

As social inequality has increased and the sense of community has diminished during a generation, the State's capacity to resolve law and order problems has been seriously challenged (Kawachi and Wamala, 2007). It is evident that there is 'structural violence' against young people and ethnic Fijian youths react to it by externalising their sense of deprivation. The victims have been largely Indo-Fijians. The latter tend to internalise their feelings of inadequacy and frustration. This is reflected in higher levels of psychosomatic illnesses and suicides. With opportunities of employment severely limited and, for those in employment, wage levels too low for decent living, relatively large numbers of Fijians have sought opportunities abroad (SPC, 2010b).

4.8 Educational development in Fiji

The net enrolment rate continues to be high, while the survival rate has recovered since 2000 and is quite high. Literacy rates also remain high at over 90 per cent. About 88 per cent of girls and 81 per cent of boys are in secondary school, and 99 per cent of girls and boys for Primary enrolment. 62 per cent of the population of tertiary age are in tertiary Education. Fiji has made significant progress towards education outcomes, underpinned by dedicated government support, as well as due to on-going development partner assistance (Fiji Ministry for Education, 2012).

4.9 Food-Nutrition and Health

The composition of Pacific Islanders' diets has changed considerably over time, particularly since World War II, with the transition to a cash economy, trade globalization and rapid urbanization. Processed foods high in refined starch, sugar, salt and unhealthy fats are cheaply and readily available and have replaced to a large extent fresh fish, meat, and local fruits and vegetables. Processed foods are heavily marketed through appealing advertisement, representations of an idea of novelty and 'modernity' and are enticing to consumers – often more so than natural/ traditional food (Yadav and Krishnan, 2008).

The food industry and its influence on government and international agencies is a factor, as is economic globalization, which restricts countries' ability to regulate food imports and trade. The pharmaceutical industry funding for research which focuses on drug treatment/prevention is another challenge, as is the reluctance of governments to intervene in choices considered to be the province of the individual for diseases that are non-transmissible (Mavoa, & McCabe, 2008).

There is a lack of compelling evidence to explain declines in NCD mortality and the effectiveness of prevention due to difficulties of scientific studies in whole populations. Prevalent economic paradigms at national and international level have prevented price and import manipulation to foster availability of cheap healthy food. Often 'locally produced' is another challenge, as is the lack of recognition of sedentary work as an occupational hazard, and the view that exercise is only recreation (ibid.).

4.10 Non-communicable Diseases: Types, Trends and Causes

In Fiji, non-communicable diseases (NCDs) such as diabetes, hypertension, heart disease, high blood pressure, respiratory diseases and cancer, have now replaced infectious and parasitic diseases as the principal causes of mortality and morbidity. Many of these NCDs are thought to relate closely to changes in lifestyle that accompany economic development. There has been a dramatic change in the dietary and physical activity patterns amongst all the races.

According to the Government of Fiji Food and Nutrition Centre (2008), high blood pressure affects two in every ten adults over the age of twenty years in Fiji. Obesity and overweight are major health problems throughout Fiji and the Pacific region (O'Dea and Eriksen, 2010). Diabetes, another example of lifestyle disease, is now regarded as one of the major causes of death in the Pacific Islands. In the 1980s, a dramatic increase was noted in diabetes related deaths with a high incidence amongst the Fijians of Indian descent (Coyne, 2000b). The increasing rates of non-communicable diseases are causing serious concern for the health authorities in Fiji as they impose a heavy economic burden on the nation, both in costs of medical services and in lost labour and productivity (Asante and Hall, 2006).

Communicable diseases along with maternal, perinatal and nutritional conditions in Fiji accounted for an estimated 18 per cent of all mortality in 2008. In 2011, Fiji's HIV prevalence stood at 0.1 per cent; this figure remained constant over the period 1990–2010. The country is free from malaria. Estimated incidences of tuberculosis fell by nearly three-quarters in the period 1990–2010 and estimated mortality (when mortality data excludes cases co-morbid with HIV) also reduced significantly in that time. There were two reported cases of leprosy in 2010, as well as one reported case of measles and one reported case of rubella in 2009 (Coyne, 2000a).

Non-communicable diseases in Fiji accounted for an estimated 77 per cent of all mortality in 2008, as shown in figure 4.3. In 2008, the most prevalent NCDs were cardiovascular diseases (42 per cent). Cancer, respiratory diseases and diabetes contributed 12 per cent, 6 per cent and 4 per cent to total mortality respectively. Cardiovascular disease and diabetes are the two most common causes of premature death in Fiji. "Obesity, diabetes and hypertension cause major complications in pregnancy for the woman. The condition of the baby at birth can have lifelong consequences for the individual" (Fiji Ministry of Information, 2013).

NCDs are no longer diseases confined largely to the rich and elderly. Cassidy (1967) studied diabetic prevalence in 1,000 Fijians of Indian origin aged more than 21 years; and found the overall prevalence in Indians was 5.7 per cent. The survey was conducted in a suburb of Suva where persons of mixed social status resided. This diabetes rate was 9.5 times more common in Indo-Fijians than in indigenous Fijians (0.6 per cent). In 1984, Taylor reported that the prevalence of diabetes in Fiji Indians had risen to 12.5 per cent.

4.10.1 Risk Factors of NCDs

Smoking is a major risk factor for hypertension, diabetes and cancer and is prevalent in all Pacific Islands countries. In most countries, more men than women smoke daily, ranging from 70 per cent in Kiribati to 30 per cent in Fiji (Sharma, 2010). Sharma says 53 per cent of men and 18 per cent of the women in the population are addicted to smoking. Tobacco use, current smokers in Fiji has an overall prevalence of 36.6 per cent (+ 5.9) with 42.7 per cent (+6.3) of the current smokers on a daily basis for the 15-64 year olds in Fiji. The mean age of initiation of Tobacco use for both genders is approximately 18 years.

Alcohol use is also a risk factor for hypertension and diabetes and is prevalent in all Pacific Islands countries. Forty five per cent of Fiji's population between the ages of 15-64 had ever used alcohol and 23.8 per cent have consumed alcohol within the past 12 months. In Fiji 77.3 per cent of drinkers are binge drinkers, 65 per cent had ever consumed kava, and 79.6 per cent of currently do so (Fiji Ministry of Health, 2013).

Poor diet is a major risk factor for diabetes, hypertension and obesity. In all Pacific countries including Fiji only a small proportion of men and women eat sufficient fruits and vegetables to maintain a healthy diet (Fiji Ministry of Health, 2013). There is generally low consumption of fruit and vegetables in the Fiji population aged 15-64 years with 65 per cent (+3.8) consuming less than one fruit servicing per day (ibid.).

Physical inactivity is a risk factor for diabetes, hypertension and obesity. In most Pacific Islands countries including Fiji, the majority of the adult population have low levels of physical activity. In all Pacific Islands countries, more women than men are physically inactive. The overall proportion of the Fiji population aged 15 – 64 years who are overweight was 29.9 per cent and obese was 18 per cent. Females in Fiji are by far more obese than males by body mass index (26.4 per cent versus 9.8 per cent) and waist Hip Ratio (44.6 per cent versus 4 per cent) for abdominal obesity. There is evidence of monotonic rapid increase of obesity with age up to the 30 – 34 year age group implying that maximal weight gain is occurring in the younger generation in Fiji (Fiji Ministry of Health, 2013).

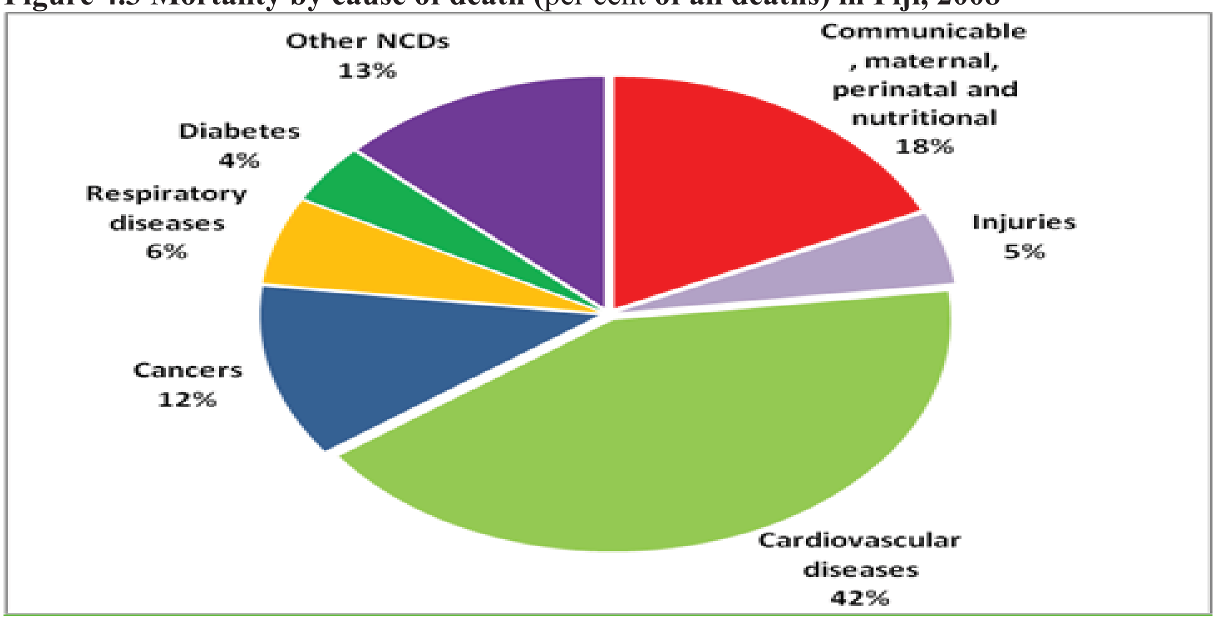
Obesity itself is a major risk factor for hypertension and diabetes and is prevalent in all Pacific Islands countries. More than 70 per cent of the adult population are obese in American Samoa, Nauru, and Tokelau (Swinburn, 2010). More women than men are obese. Raised levels of total blood cholesterol are a major risk factor for hypertension and heart diseases (ibid.).
Hypertension is a major risk factor for heart disease and stroke and is prevalent in Fiji. According to the latest WHO (2011) data published in April 2011, hypertension deaths in Fiji reached 273 or

6.67 per cent of total deaths. The age adjusted death rate of 57.84 per 100,000 of population ranks Fiji at number 24 in the world (Swinburn, 2010).

Cancer is the third leading cause of mortality in Fiji and accounts for 12 per cent of all deaths annually. Cervical cancer was the biggest killer for women followed by breast cancer, while for men, it was prostate cancer that caused the highest rate of deaths. The incidence of cancer in Fiji was about 129 cases per 100 000 people for a population of around 800,000 people (Fiji Times, 27 July, 2012b).

Diabetes is a major risk factor for most non-communicable diseases and its complications often result in limb amputations. Diabetes is becoming very prevalent in Fiji. Based on three out of five specific risk factors, the majority of the adult population in most Pacific Islands countries have a high risk of developing NCDs. According to the latest WHO (2011d) report Diabetes Mellitus Deaths in Fiji reached 219 or 5.35 per cent of total deaths. The age adjusted death rate of 40.85 per 100,000 of population ranks Fiji #79 in the world (WHO, 2011b). Figure 4.3 shows mortality by cause in Fiji.

Figure 4.3 Mortality by cause of death (per cent **of all deaths) in Fiji, 2008**



Source: Fiji Ministry of Health, 2008.

4.11 Aid Programmes in Health in Fiji

Fiji has implemented a number of public health initiatives in the area of non-communicable diseases that are a growing concern due to the increasing impact of changing lifestyles on health. The incidence and prevalence of diabetes, cardiovascular diseases and respiratory diseases are high and increasing. Strategies to address non-communicable disease in Fiji are contained in the National NCD Strategic Plan 2004-2008 (Fiji Ministry of Health, 2004a) and the more recent NCD Plan 2010–2014.

Fiji Ministry of Health's strategies for non-communicable disease prevention give priority to the SNAP (smoking, nutrition, alcohol and physical activity) risk factors. Social marketing strategies include radio jingles, radio and TV spots, billboards, posters, pamphlets and other media for promoting positive behavioural change. An evaluation of this programme by the National Centre is currently being undertaken. The repetition of the NCD Steps survey in 2010 provides an evaluation of the effectiveness of these strategies. The 2009 Obesity Prevention in Communities (OPIC) project conducted by Deakin University in Australia and the Fiji School of Medicine suggests that many health promotion activities have little effect if not provided at a sufficient level of saturation (Swinburn, 2010).

The Fiji Government has also expanded its support to health through the increase in the nominal budget in 2013 to $167 million toward health (Government of Fiji 2012). The Government of Fiji is committed to improving health service delivery. With the current increased technical assistance by international partners from $6.4 million in 2008 geared to $30 million, the Fiji Ministry of Health needs to answer the question of how effective or valuable the investment in health has been over the years. This would ensure that health planners are aware of where change may be necessary (Negin, Irava and Morgan, 2012).

In 2005, donor agencies´ contributions to health amounted to FJ$9.5 million or 5.3 per cent of total health expenditure. In 2007, it decreased to FJ$6.9 million (3.4 per cent) following the coup d'état of December 2006, and then rose again in 2008 to FJ$12.2 million (6 per cent). Global Fund support to Fiji may be affected by the fact that the World Bank (2013) elevated its status from lower middle income to an upper middle income country. External support to the Fiji Ministry of Health is not yet well-harmonized to achieve a more effective use of the funds available (Negin, Irava and Morgan, 2012).

In assessing the impact of all above investments it is necessary that priority areas are identified and progress reviewed, evaluated to ensure the same mistakes are not made, wastage is reduced and efficiency is instilled in all processes. Re-alignment of operations, processes and procedures on implementation reviewed and continuous monitoring and evaluation is warranted.

4.11.1 AusAID and Health in Fiji

Australia's assistance over 2012 to 2014 targets poverty and vulnerability in Fiji by working towards the following three development outcomes: 1. improving access to quality education by reducing financial barriers to schooling and improving learning facilities in the most disadvantaged communities, including disaster-affected areas; 2. strengthening primary health services by improving maternal and child health and diabetes prevention and 3.building resilience and economic opportunities in disadvantaged communities by supporting market development, access to financial services and skills development (AusAID, 2013).

The total Australian aid flow increased to $55 million a year over the life of its strategy, with bilateral aid to Fiji increasing from $18.5 million in 2011–12 to $36 million by 2013–14 (AusAID, 2013). Australian aid has a long-standing commitment to assist the people of Fiji affected by the 2006 coup. The increase in funding to $36 million will allow Australia to focus more on the rural poor and continue to support health and education (ibid.). The Fiji aid programme has maintained its support for basic health and education services, and provided humanitarian relief in times of natural disasters. Australia has maintained its support for and engagement with the people of Fiji (AusAID, 2013).

AusAID provides funds to Fiji Health Sector Support Programme. The Fiji Health Sector Support Programme has been well implemented and has strengthened the capacity of the Fiji Ministry of Health under demanding circumstances. The programme is funded by AusAID and, in its broadest sense, has supported the Ministry of Health Fiji (MOH) to pursue its own strategic and corporate plans and NCDs is one of their priority areas (AusAID, 2013). Given the high incidence of NCDs AusAID gives funds to the Fiji Health Sector Support Programme and to SPC to achieve their mandate in controlling and preventing NCDs. As a middle-income country, Fiji receives total aid flows that are a relatively small proportion of gross domestic product, reducing the influence of donors as a result.

In Fiji, this is exacerbated by the poor governance environment and prospects for only weak economic growth. However, through targeted assistance, Australian aid contributes to improvements in areas such as access to primary education, maternal and child health, developing markets that deliver benefits to the poor and reducing disaster risks. Australian aid continues to work in ways that do not compromise or undermine their intention to ensure the welfare of the people of Fiji is maintained. Australian aid engages credible partners with a shared interest in Fiji's development (ibid.).

4.12 Conclusion

This chapter has provided details on the background of Fiji Islands mainly on the aspects of history, geography, economy, demography, urbanization, climate change, diet, nutrition and risk factors of non-communicable diseases. It also discussed the role of the Fiji Ministry of Health's health financing, evaluation framework and the importance of aid to health in Fiji.

CHAPTER FIVE

RESEARCH FINDINGS

5.1 Introduction

This chapter deals with the research findings of the thesis, particularly related to the effectiveness of ODA provided by AusAID for NCDs and in particular the most common NCD, which is diabetes. The chapter is divided into two parts. The first part deals with findings based on secondary source data in relation to NCDs and AusAID, and the second part provides analysis based on the primary survey.

5.2 Aid, Health and NCDs in Fiji

The following section deals with aid to health sector especially AusAID funding for NCDs in Fiji.

5.2.1 NCDs in Fiji

The rapid growth of the NCD epidemic in Fiji is making it difficult for the government and the community to address its consequences (Fiji Ministry of Health, 2013a). The NCD crisis has become a major problem. If the necessary steps are not taken now to address the combination of causes that have led to its development, the situation will deteriorate further. Given the increased knowledge of the symptoms of diabetes and increased opportunities for diagnosis the number of diabetes cases recorded are most likely to increase (ibid).

A survey by the World Health Organisation (2011) showed that one in every three Fijians is diabetic. Compared to, one in every ten adults around the world. The Health Minister of Fiji, however noted that the figures were one out of five people suffer from diabetes (cited in Sharma, 2010).

In the past five years, the Fiji Ministry of Health has recorded more than 5,000 deaths due to diabetes and 16 nearly per cent of Fiji's population (51,200 people) above the age of 25 years suffer from diabetes (Carter et al., 2010). The high incidence of diabetes has resulted in a disproportionate number of premature deaths and leaving women and children, and families falling into poverty as a consequence of the costs of managing diabetes (Carter et al., 2011).

Moreover, the National NCD STEPS Survey (2002) shows 28 per cent of people who are 25–64 years old had their blood sugar measured annually (Cornelius, 2002). A significantly higher proportion of diabetics live in the urban areas (24.7 per cent). Among those with diabetes, 53.2 per cent were previously unrecognized cases. Of those that were previously diagnosed, 2.1 per cent were not being on medication, 32.2 per cent were on medication but uncontrolled and only 12.5 per cent were being on medication and having normal fasting blood glucose (Fiji Ministry of Health, 2010b).

In addition to health care costs, NCDs contribute substantially to costs associated with loss of productivity due to premature death and disability (Panapasa, 2002). Diabetes imposes long-term health and financial costs, in part because of its chronic and lifelong nature once it is acquired. Diabetes is also associated with and/or contributes to cardiovascular, kidney and eye disease (Kidney Foundation of Fiji, 2006). It is estimated that 33 per cent of patients in the surgical wards in Fiji are people with diabetes (Maharaj and Reddy, 2012). As in other PICs, the cost of dealing with diabetes in Fiji continues to increase and has led to the need for "offshore expenditure" – where facilities for care are not available on the island – much of which is spent on diabetes-related complications (International Diabetes Federation, 2013).

A person with diabetes spends more on health care as compared to persons without diabetes. The cost of treating diabetes is more expensive. People, who suffer from diabetes, have reduced income or are unemployed and as a result the whole family suffers. If the person who is diabetic and is the sole bread earner then it becomes more difficult to support the family (Rani, Nusrat and Hawken, 2012).

As one of Fiji's biggest killers, non-communicable diseases have led to about F$96 million of government's finances being diverted annually to deal with this one health issue (Fiji Times, 23

September, 2013). NCD is putting heavy burden on the country. As Fiji's Ministry of Health's NCD advisor reveals that:

Government budget is sitting at about $120 million and 80 per cent is towards NCDs, complications and everything to do with NCD (Fiji Times, 23 September, 2013).

5.2.2 AID to Health Sector in Fiji

Fiji relies on the support of a number of aid donors and partners for its health services (Fiji Ministry of Health, 2010b). One of the most active bilateral partners for health is AusAID. Multilateral partners are contributing to the health of the Fiji population are, for example, WHO, UNFPA, UNICEF, and SPC. Some important contributions also come from other partners but are less in terms of funding allocation (Sutton, Roberts & Lingam, 2008).

5.2.2.1 Health Expenditure and Donor Funding in Fiji

Table 5.1 gives an overview on the financial contributions of external donors and partners to Fiji in 2009 and 2010. The estimated amounts are based on the information given from the partners themselves through surveys, cross checked with information given from the Fiji Ministry of Health database and the ODA database of the Fiji Ministry of Finance that was compiled and updated during the Paris Declaration Survey 2010 (Fiji Ministry of Finance, 2012).

Table 5.1 Health expenditure and Funding by Donors in Fiji 2007-2010

Year	Total health expenditure (F$ million)	Funding by donors (F$ million)	% Change in donors' funding	Donors' funding as percentage of total health expenditure (%)
2007	204.3	6.9	-	3.4
2008	205.8	12.2	76.8	5.9
2009	236.0	14.5	18.9	6.1
2010	250.4	22.1	52.4	8.8

Source: Fiji Ministry of Health (2010a).

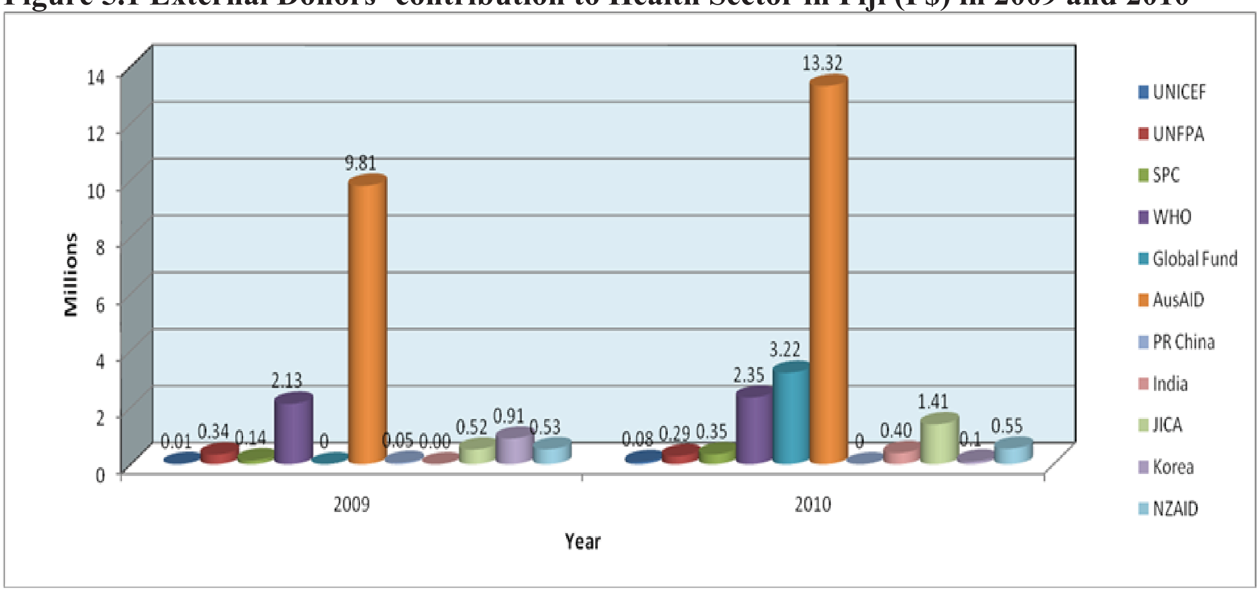
Table 5.1 shows that funding by donors has increased by 220 per cent i.e from F$6.9 million in 2007 to F$22 million in 2010. There was about 52 per cent increase in donor funding to the health sector in Fiji between 2009 and 2010. Overall growth of health expenditure between 2007 and 2010 was 23 per cent and from F$204 to F$250 million (Table 5.1).

There has been increase as shown in Table 5.1 in external partners' funding for health sector in Fiji over the past years. In 2007, the external donors funded around F$6.9 million representing a share of 3.4 per cent of total health expenditure (Table 5.1). In 2008, external funds amounted to around F$12.2 million with around 5.9 per cent of total health expenditure. In 2009, external contribution increased to F$14.5 million (representing 6.1 per cent of total health expenditure) and in 2010, it reached to F$22.1 million with a share of 8.8 per cent of total health expenditure. The trend shows an increasing dependency of the country on external funding for health (Fiji Ministry of Health, 2010c).

5.2.2.2 Patterns of Funding in the Health Sector by Donors in Fiji

As shown in Figure 5.1 the allocation by health partners in Fiji is dominated by AusAID and AusAID funding was 13.32 per cent during 2010. AusAID provided about 60 per cent of the total aid assistance to health sector in Fiji (Figure 5.1). AusAID funds have increased from 9.81 per cent in 2009 to 13.32 per cent in 2010.

Figure 5.1 External Donors' contribution to Health Sector in Fiji (F$) in 2009 and 2010

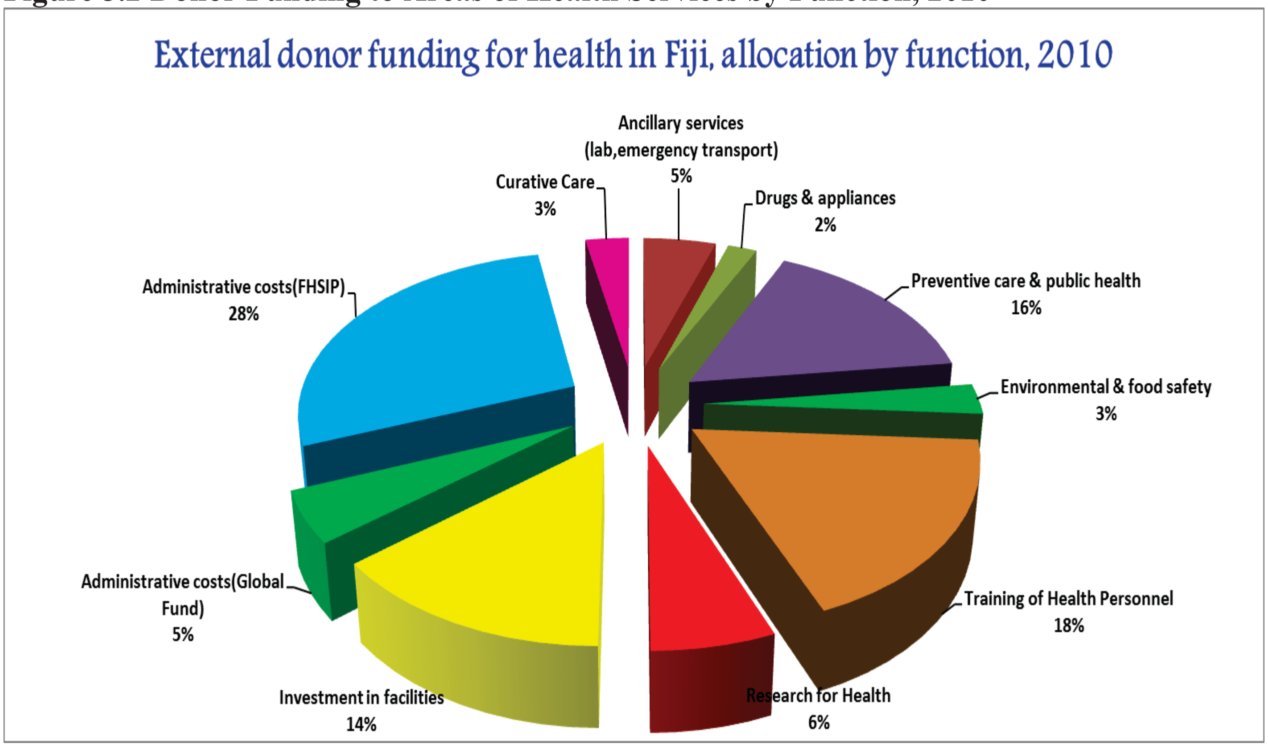


Source: Fiji Ministry of Health, 2010b.

5.2.2.3 Allocation Patterns of Donor Funding to Health Sector in Fiji by Function

Figure 5.2 reveals the allocation patterns of donor funding to health sector in Fiji by function. It shows that in 2010, preventive and public health accounted for about 16 per cent, training of health personnel about 18 per cent, environmental and food safety and curative care each of 3 per cent, research for health about 6 per cent and drugs and appliances nearly 2 per cent. A larger proportion of funds, i. e. about 28 per cent, were allocated for administrative costs.

Figure 5.2 Donor Funding to Areas of Health Services by Function, 2010



Source: Fiji Ministry of Health, 2010d.

5.2.3 AusAID Policy on Health and NCDs

Australia is strongly committed to supporting the people of Fiji through the aid program. In AusAID's Fiji country strategy (2012–2014) targets, poverty and vulnerability in Fiji's most disadvantaged communities (AusAID, 2013). AusAID focuses on supporting health and education services and creating economic opportunities in rural and peri-urban communities. Assistance is mostly provided in partnership with community organisations, managing contractors, the private sector in Fiji and international development partners. AusAID focus on health as mentioned earlier is to combat NCDs through Fiji Health Sector Support Programme (FHSSP).

5.2.3.1 AusAID Funding for NCDs in Fiji

AusAID funding to the Fiji Health Sector Support Programme (FHSSP) has helped reinforce the capacity of the Fiji Ministry of Health under demanding circumstances. The programme has supported the Fiji Ministry of Health to pursue its own strategic and corporate plans as NCDs is one of their priority areas. The Australian Government has a requirement that the funds are not be paid directly to a Government but the programme works alongside the Ministry and includes a technical adviser on diabetes along with short-term staff on social marketing and other overarching issues (Robinson and Hort, 2011).

AusAID's major objective is to improve prevention and management of diabetes and hypertension at decentralised levels. The FHSSP attempts to address the growing issue of diabetes and hypertension and aims to improve the delivery of primary services related to preventing, detecting and managing diabetes.

As noted earlier AusAID is the major traditional donor to Fiji, having provided F$20.6 million between 2006 and 2012 for tackling non-communicable diseases (AusAID, 2013). AusAID, through FHSSP, provides A$5 million for five target[20] areas including diabetes and hypertension (Government of Fiji, 2012). The diabetes/hypertension component focuses mainly on improving the decentralised prevention, detection and management of diabetes and its complications (ibid). This includes activities such as annual population screening, building capacity of the health workforce, diabetes personal care record booklet, diabetes clinic and hubs development and specialist outreach services (Government of Fiji, 2010).

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[20] Five target areas are Safe motherhood, Healthy child, Diabetes, Primary health care and Targeted systems strengthening.

5.2.3.2 SPC and WHO NCD Strategies funded by AusAID

From 2008 to 2011, SPC and WHO implemented a joint multi-country strategy in the Pacific including Fiji focusing on NCDs called ‘2-1-22’ (SPC and WHO, 2008). Funded by AusAID and NZAID, this strategy focused on strengthening national NCD strategies; supporting countries in implementing their strategies; supporting development of sustainable funding mechanisms; strengthening health systems and strengthening monitoring; evaluation and surveillance. The approach included country grants, of which Fiji was a recipient, and helped to fund a new project officer position to support the NCD adviser. There is extensive technical support from both the WHO and SPC, including training programmes, in-country visits, support for NCD strategy and networking. The SPC–Fiji joint country strategy 2010–2014 includes a number of action areas for NCDs (SPC, 2011b). This includes support for implementation and review of the NCD strategy, support for development of a sustainable funding mechanism, human resource development and assistance with surveillance and monitoring (Robinson and Hort, 2011).

Other activities supported by SPC’s strategy included a review of alcohol legislation, overseas attachments and a global school-based health survey. Small grants have also been accessible from SPC and these have been used by Fiji for activities including hospital food gardens (SPC, 2011a). Support from WHO has also included a position based in the Ministry of Health and funds for the Health Promoting Schools project, and salaries of officers for physical activity, tobacco and salt reduction.

WHO is also providing support for the implementation of the Package of Essential Non-communicable (PEN) programme including PEN Disease Interventions in the Pacific countries including Fiji. ’It is a prioritised set of cost-effective interventions that can be delivered to an acceptable quality of care, even in resource-poor settings’ (WHO, 2010f). It can be regarded as minimum standard to strengthen national capacity for NCDs. The package includes primary health care programmes such as tobacco cessation, availability of key medications (for example, statins to lower cholesterol levels) and support for healthy eating. Fiji is at an early stage of implementing PEN supported by WHO (SPC and WHO, 2008).

In order to deal effectively with the NCD crisis a reorientation of health care services and systems in a country is needed to cater to the need for various types of prevention. Current efforts by the Fiji Ministry of Health (MOH) supported by donor agencies, particularly AusAID, include re-organization of the primary health care system, reinvigoration of the community health worker model and increasing emphasis on evidence-informed decision making.

There is a considerable emphasis on prevention of NCDs, with recognition of the need for multi-sectoral action and policy-based approaches. While data are collected on NCD mortality and risk factors, limited use is however made of these to plan services and identify high-risk groups (SPC and WHO, 2008). Government's efforts have been made, to secure additional resources for NCD activities, including taxes and licensing fees.

5.2.3.4 Effectiveness of AusAID in Fiji

While the contribution of donors overall to the health system in Fiji is relatively low compared to other developing countries, it is of concern that levels of funding for NCDs have been far outstripped by those for HIV (Snowden et al., 2013). Support from AusAID, the main donor for health-related programmes in Fiji, is now shifting towards more bilateral support rather than through regional and international development partners, as evidenced by the Fiji Health Sector Support Programme (FHSSP) (ibid). Fiji Health Sector Support Programme has a strong emphasis on NCDs, particularly on diabetes and also on health system reorganization.

AusAID and technical advisory agencies like the WHO and SPC are likely to have considerable influence over the activities of the Fiji Ministry of Health. This is perhaps evidenced by the rise in NCD strategies in the region, heavily promoted by the WHO and SPC as part of their 2-1-22 programme[21] (AusAID, 2010).

Consequently, Fiji's National Strategic Plan 2010-2014, shows that extensive activities are under way to ensure delivery of NCD prevention and treatment services through outreach and health centres (MOH, 2013). However, there has also been lack of clarity around what activities are being

[21] 2-1-22, two organizations working as one to serve 22 Pacific Island Countries and Territories.

implemented and how they contribute to the national strategic plan. This situation has increased the risk of activity duplication, reduced efficiency, and has posed challenges for operational planning and budgeting. As stipulated by Snowden et al., (2013) given the high absence of documentation for NCD activities in place in Fiji, the Robinson and Hort framework is of great value. It assists to better monitor and evaluate processes and integrate well.

The researcher has also found that Monitoring and evaluation of overarching NCDs strategy and specific programmes and activities have proven to be challenging in Fiji. This is partly due to the coordination challenges and the fact that there has not been a person or group clearly mandated with undertaking a monitoring and evaluation role (Snowden et al., 2013). Fiji appears to be making some progress in terms of building commitment, lack of evidence of monitoring of existing strategies is of concern. Maintaining multi-sectoral commitment to NCDs is challenging, and without efforts and engagement, progress on implementation of strategies may be slow (Azzam, 2007).

Moreover, the STEP report provides an important contribution and also gives a baseline against which future evaluations and surveys can be compared (Snowden et al, 2013). It is important that this complemented with a focus on capturing lessons learnt from individual activities, and sharing these lessons with other stakeholders with Fiji and across the Pacific. Whilst analysing the few available documents on NCDs for Fiji, there appears to be moderate progress in regard to building commitment and addressing constraints, and also moderate progress for public policy use (Snowden et al., 2013).

Furthermore, there has been minimal emphasis on targeting of interventions to high-risk groups, while surveillance and data gathering have increased for NCDs. There has been relatively little analysis of data by income or location, although data on these variables are routinely collected. This means that information on variations in risk factors between population sub-groups is not available, thus limiting scope for targeting (Snowden et al., 2013).

Additionally, NCDs significant long-term cost burden on individuals affected, with funds needed for medicines and transport to health clinics and potential loss of earnings due to sickness. There has been no analysis to date of these types of costs, although a recent study in Vanuatu suggests that costs are likely to be high (Falconer, Buckley and Colagiuri, 2010).

In the absence of data on costs of NCDs to those affected, it is hardly surprising that there have been no efforts to date by the MOH to consider equity in access to NCD services (Snowden et al., 2013). Further analysis of existing data is urgently needed to identify where disparities may lie. This should be complemented by efforts to assess out-of-pocket expenses for those with NCDs (ibid). This should also consider cost of support services such as crutches and prosthesis for those with amputations and physiotherapy for stroke sufferers.

5.3 Research Analysis

This following figures and graph shows survey analysis. The primary survey in the present study was conducted in the Diabetic Centre and Eye Clinic of Colonial War Memorial (CWM) Hospital, Suva. The survey selected 50 respondents for interview.

5.3.1 Age Groups of NCD affected Respondents

NCDs generally affect higher age groups. Ageing is clearly linked to incidence of NCDs. The survey shows that two-thirds of people affected by diabetes who were surveyed were 45 years or older. Of this, about 34 per cent were 55 years and older (Table 5.2).

Table 5.2 Age Groups of NCD Affected Respondents

Age group	Respondents	
	No.	%
55+	17	34.0
46-55	16	32.0
36-45	6	12.0
26-35	6	12.0
16-25	5	10.0
Total	**50**	**100.0**

Source: By the Researcher, 2013.

5.3.2 Employment Status

An analysis of employment status of NCD patients reveal nearly 36 per cent were in employment as salary earners and another 4 per cent were self-employed (Table 5.3). A significant proportion of respondents, i.e. a little less than one-third, were unemployed. Another 14 per cent of respondents were retired persons (Table 5.3).

Table 5.3 – Employment Status of survey participants

Employment Status	Respondents	
	No.	%
Salary earners	18	36.0
Unemployed	16	32.0
Studying	7	14.0
Retired	7	14.0
Self-employed	2	4.0
Total	**50**	**100.0**

Source: By the Researcher, 2013.

5.3.3 Marital Status

The survey found that most of the respondents, i.e. nearly 64 per cent, were married (Table 5.4). Nearly 14 per cent each were with single status and widowed category. However, a high proportion of respondents nearly 36 per cent were with non-marital status including single, widowed, divorced or separated categories.

Table 5.4– Marital Status of NCD affected Respondents

Marital status	Respondents	
	No.	%
Married	32	64.0
Single	7	14.0
Widowed	7	14.0
Divorced	2	4.0
Separated	2	4.0
Never Married	0	0.0
Total	**50**	**100.0**

Source: By the Researcher, 2013.

5.3.4 Type of NCDs-related Diseases

Of the 50 NCD affected people sampled, all were affected by diabetes. As Table 5.5 shows, nearly 36 per cent of the respondents were also affected by hypertension, 10 per cent by heart-related diseases and 2 per cent by chronic respiratory diseases.

Table 5.5– Types of NCD related diseases

Types of NCD Diseases	Respondents	
	No.	%
Diabetes	50	100.0
Hypertension	18	36.0
Heart-related	5	10.0
Chronic Respiratory	1	2.0
Others	1	2.0

Source: By the Researcher, 2013.

5.3.5 Level of Earning

An analysis of the earning patterns reveals that most of the respondents were within the lower income group. Table 5.6 shows 38 per cent of respondents were in the income group of less than F$49 per week. About 66 per cent of respondents had average income level below F$149 per week. This illustrates strong linkage between low-income level and NCDs especially diabetes.

Table 5.6 – Respondents' Level of Earning (F$) per week

Income Per Week (F$)	Respondents	
	No.	%
250+	10	20.0
200–249	3	6.0
150–199	4	8.0
100–149	10	20.0
50–99	4	8.0
0–49	19	38.0
Total	**50**	**100.0**

Source: By the Researcher, 2013.

5.3.6 Incidence of NCDs amongst Family members of Diabetic Patients

Table 5.7 illustrates a high rate of NCD incidence amongst the family members that are already affected by NCD. Persons interviewed had on an average of 1.58 per cent chance for diabetes in the family. Hypertension is around 0.30 per family followed by 0.22 for heart related and 0.02 for obesity.

Table 5.7 – NCDs incidence in family members of diabetic patients

NCD Incidence	Diabetes	Obesity	Hypertension	Heart-related
Family members per diabetic patient	1.58	0.02	0.30	0.22
%	158.0	2.0	30.0	22.0

Source: By the Researcher, 2013.

The incidence rate of diabetes with a family member already suffering from the ailment is clearly higher in families of Fijians of Indian descent and the rate was 1.76 (Table 5.8). However, iTaukei families had slightly lower rate of 1.27. The Table 5.8 also illustrates that females were with a higher rate of 1.87 when compared to their male counter parts with a rate of 1.20.

Table 5.8 – Incidence rate of diabetes in family members of Respondents, by ethnicity and gender

Category	Incidence rate of Diabetes in family members of Respondents
Ethnicity	
Indian	1.76
Fijian	1.27
Gender	
Male	1.20
Female	1.85

Source: By the Researcher, 2013.

5.3.7 Variants of Income level Status of NCD Patients

Table 5.9 illustrates that the income levels of the diabetic and other NCD patients have varied since their diagnosis was confirmed. About 76 per cent respondents said their income had declined, another 20 per cent stated they became unemployed, while another 12 per cent stated their incomes either declined or they became unemployed (Table 5.9). Only 12 per cent stated that their income levels had not been affected. These changes in income levels have had socio-economic implications such as poverty, stress and other aggravating NCD factors.

Table 5.9 – Variants of Income Level of Respondents

Income level Status	Respondents	
	No.	%
Income declined	38	76.0
Unemployed	10	20.0
Income declined or became unemployed	6	12.0
Not affected	6	12.0

Source: By the Researcher, 2013.

5.3.8 Health Clinic Visitation by Respondents

There were 34 respondents (68 per cent) said they frequently visited a health clinic or health centre (Table5.10). The majority was aware of the need for frequent medical check-ups. Fourteen per cent said they made occasional visits to their health clinics while 10 per cent said they rarely received medical attention. Another four per cent stated they have never visited health clinics.

Table 5.10 – Frequency of visit to health clinic by the respondents

Frequency of Health Centre visit	Respondents	
	No.	%
Frequently	34	68.0
Occasionally	7	14.0
Rarely	5	10.0
Never	2	4.0
No response	2	4.0
Total	50	100.0

Source: By the Researcher, 2013.

Box 5.1 A Case Study

Ms Savita Nand was employed as a house girl in Nasinu, Suva. She had no clue that she had developed diabetes. She had been going to public hospitals in Suva complaining about a chronic eye ache. Ms Nand was told by numerous health professionals that she needs to ensure that she drinks plenty of water and to eat lots of green vegetables. Given Ms Nand was poor and had to support her daughter's education, she kept working to earn a living and stopped going to the hospitals, as it was too expensive and prior visits did not provide advice to solve or solutions for her chronic eye ache. Ms Nand's husband was sick as well and was a grass-cutter. Mr and Ms Nand moved to Suva, from Labasa, after their land lease had expired.

In April 2013, Ms Nand was not able to see properly, she had blurry eyesight. She went to the Eye Clinic Centre in Suva where she was diagnosed with diabetes with much of complications. In May 2013, medical professionals advised that it was necessary for Ms Nand to have her feet amputated. Consequently, Ms Nand lost her job and is not able to support her daughter's education who is in high school. Mr and Ms Nand got separated, reportedly due to Ms Nand's condition of disability. Their daughter received social welfare assistance, which is not enough to support them and nor is it enough to support her schooling. Ms Nand said if their land lease had not expired they wouldn't have moved to Suva for a living and nor would she have developed diabetes.

Ms Nand reported that she moved away from dalo and other root crops in the village and changed her food habits in Suva and was not gardening as she used to do in Labasa. Ms Nand also commented that if the doctors in Suva conducted more tests and detected her pre-diabetic/ diabetic diagnosis sooner, she would not have lost her feet nor would she have lost her job.

5.3.9 Level of difficulty in Assessing Health Services

Most of the NCD patients described limited access to diabetic centres. Table 5.11 shows nearly 66 per cent said they faced difficulties in accessing health services, and only 8 per cent of respondents reported they had no difficulties. There is only one diabetic Centre in Suva, which provides free check-ups and gives some free medications.

For patients who live in the interior of Fiji or in remote locations, it is very difficult for them to access the services of the diabetic clinic. Sixty two per cent of patients reported that it was very difficult to access a diabetic centre for a check-up or treatment.

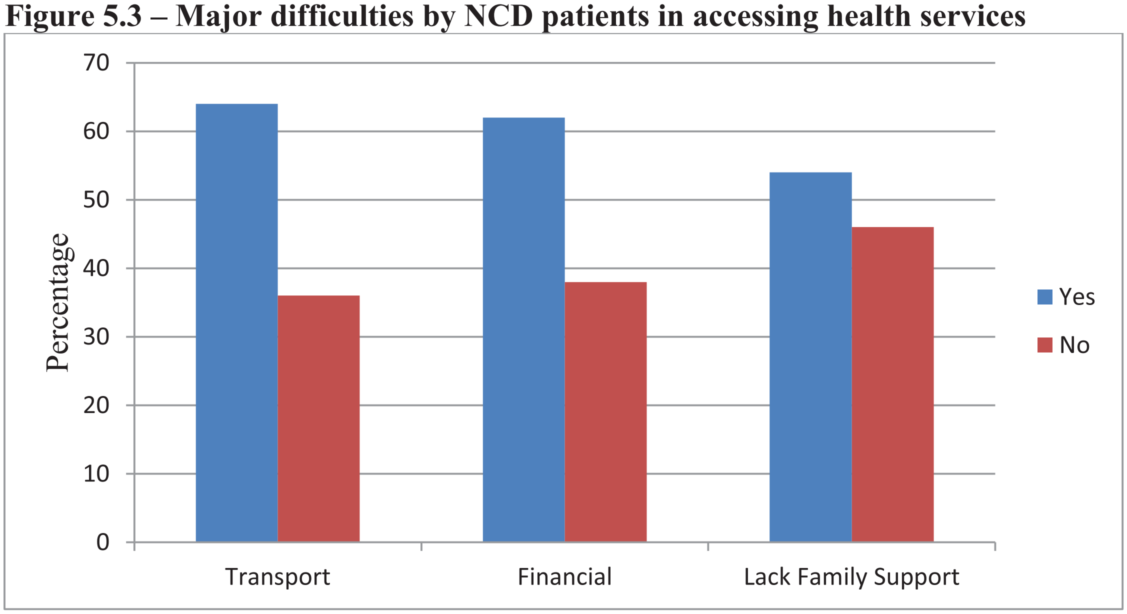
Table 5.11 – Opinion of diabetic patients on the difficulty in accessing the health services

Access to treatment	Respondents	
	No.	%
Very difficult	31	62.0
Somewhat difficult	2	4.0
Not difficult	4	8.0
Not accessible	0	0.0
No response	13	26.0
Total	50	100.0

Source: By the Researcher, 2013.

There were three issues raised by respondents when confronted with difficulties in accessing medical services, i.e. transport, finance and a lack of family support (Figure5.3).

Figure 5.3 – Major difficulties by NCD patients in accessing health services



Source: By the Researcher, 2013.

Figure 5.3 shows that more than 65 per cent stated transport is a problem in accessing health services. Over 60 per cent said they could not afford medical services due to difficulties of finance.

Similarly, over 50 per cent stated that they lack family support, which would have allowed them for better access to medical assistance.

5.3.10 Suggestions of NCD Patients for Improvement

Table 5.12 shows that NCD Patient opined there is room for improvement in the area of service delivery. Nearly 26 per cent of the respondents raised the issues of delivery of medication as a problem that can be improved.

Table 5.12 –Suggestions of Improvements given by NCD Respondents

Suggestions by patients	**Respondents**	
	No.	**%**
All unavailable medication should be free or supply is often delayed	17	26.0
More workshops and awareness programmes	9	14.0
Improvement to roads or transportation	8	12.0
Local/village/school check-ups and clinics or local medication distribution	8	12.0
Social welfare unavailable and financial assistance is needed	5	8.0
Service improvement (Lines, service delivery, and staff)	4	6.0
Better medical or surgery service	3	5.0
Facilities duplication or improvement	2	3.0
More/better donor funds	2	3.0
Food supply	2	3.0
Early diagnosis	2	3.0
Help the poor	1	2.0
Elderly special attention or home visit	1	2.0
Exercise supply	1	2.0
Total	65	100.0

Source: By the Researcher, 2013.

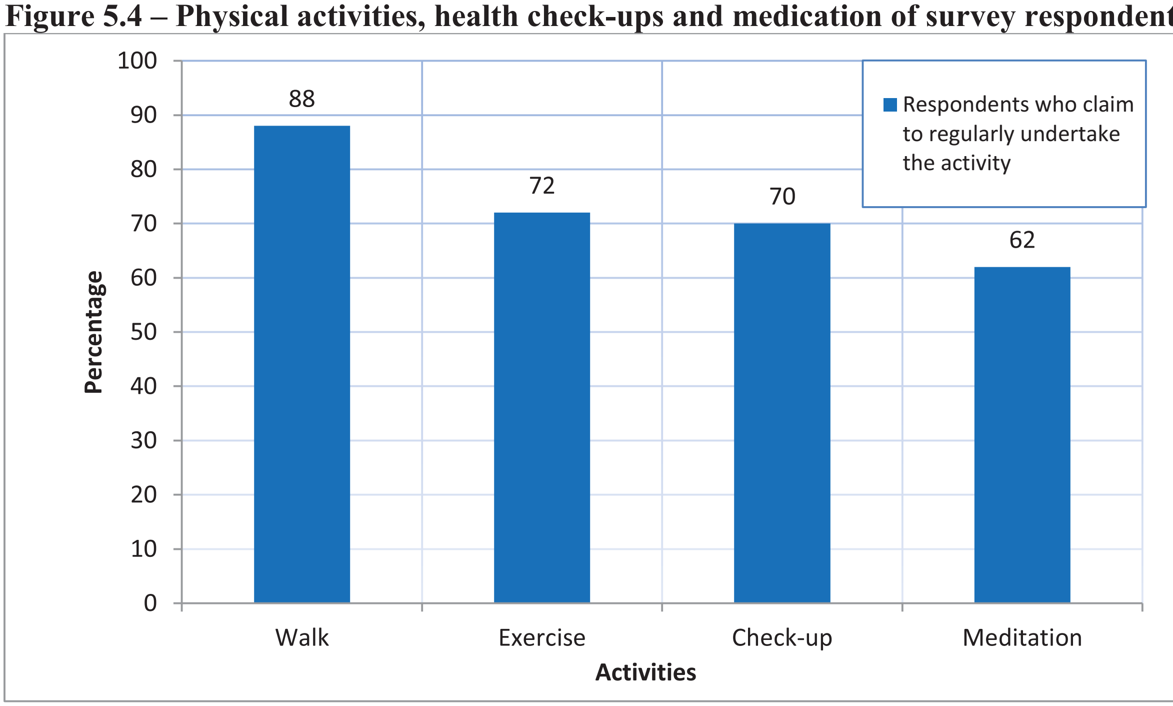
About 17 per cent of patients said that medical supply was often delayed for certain medication and these should be distributed free when it does become available.

Issues such as awareness, accessibility to and quality of medical service and financial assistance were also issues with NCD patients. Some patients raised the need for special home visits by medical professionals to patients, while others stated that improved quality of service could lead to early diagnosis, thus medical attention or prevention. About 3 per cent of respondents stated that donor's money should be better managed to ensure it reaches the target groups.

5.3.11 Life habits and physical activities of survey respondents

Figure 5.4, shows 88 per cent of diabetic patients walk daily to bring their diabetes condition under control. Of the sampled respondents 72 per cent do regular exercise whilst 62 per cent do meditation. It is good to note that 70 per cent of respondents go for regular check-ups. Another 30 per cent who do not come for regular check-ups said they have either transport problems or have no family support to bring them to the clinic for health check-ups.

Figure 5.4 – Physical activities, health check-ups and medication of survey respondents

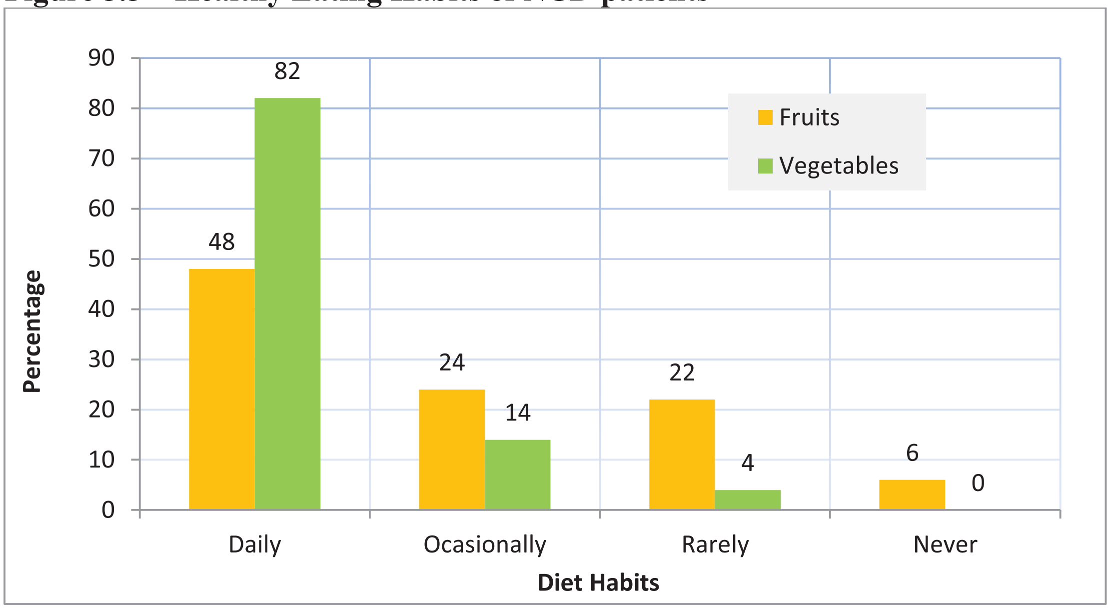


Source: By the Researcher, 2013.

5.3.12 Healthy Eating Habits of NCD patients

An analysis of eating habits of NCD patients reveals that 82 per cent of respondents eat vegetables daily. Only 48 per cent stated they eat fruits daily. This maybe due to the fact that fruits are expensive in Fiji. Average income families are not able to afford them given the high price tag, as most of the fruits in Fiji are imported. Twenty-four per cent of diabetic patients said they eat fruits occasionally and another 6 per cent said they never eat fruits.

Figure 5.5 – Healthy Eating Habits of NCD patients

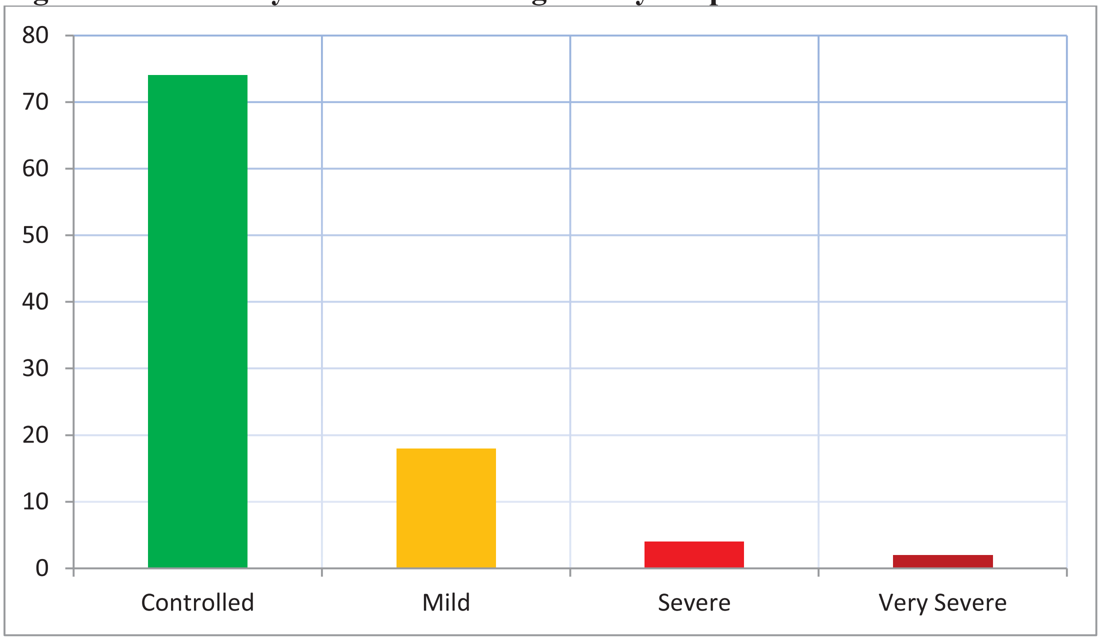


Source: By the Researcher, 2013.

5.3.13 Severity of Diabetes Among Survey Respondents

Figure 5.6 shows that more than 70 per cent respondents stated that their conditions were at a controlled level. Little less than 20 per cent said their diabetic condition was at a mild level. However, nearly five per cent had stated their conditions were either severe to very severe. Access to medical services is vital to ensure that people whose conditions are under control, do not deteriorate further.

Figure 5.6 – Severity of Diabetes among Survey Respondents

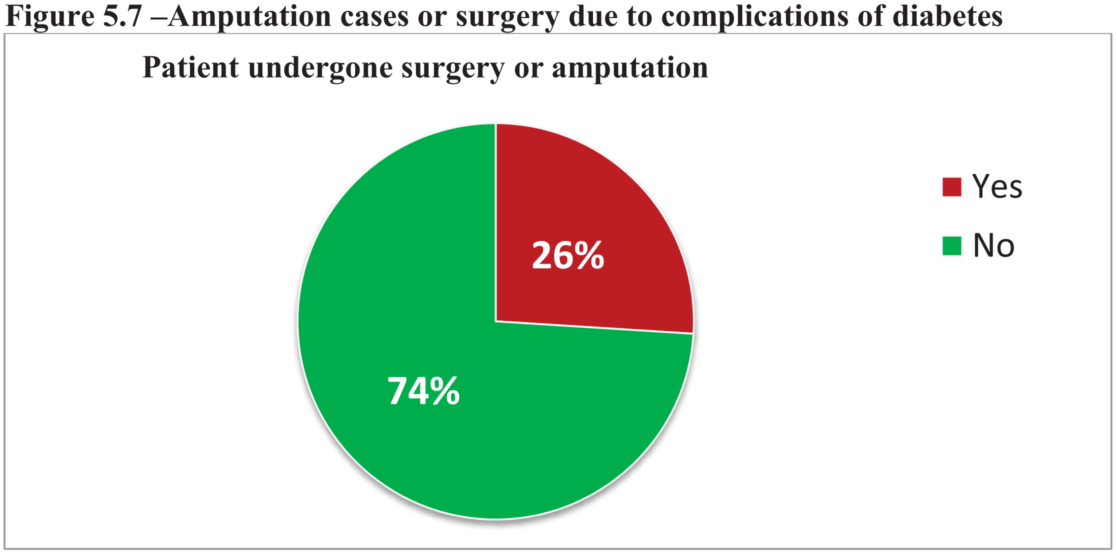


Source: By the Researcher, 2013.

5.3.14 Incidence of amputation cases due to Diabetes Complications

A high incidence of amputation is seen in the survey due to diabetic complications (Figure 5.7). Nearly 26 per cent of patients have undergone surgery or amputated body part especially limbs due to diabetes. On an average, 400 amputations are carried out a year on diabetic patients in Fiji (Fiji Times, 19 July, 2012a).

Figure 5.7 –Amputation cases or surgery due to complications of diabetes



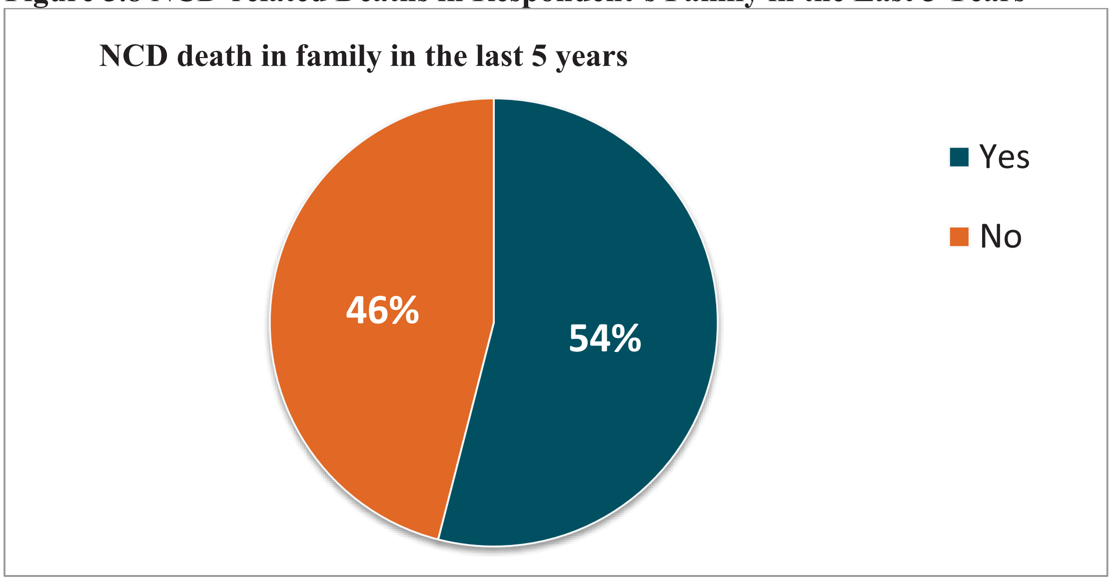
Source: By the Researcher, 2013.

This high incidence of amputation cases has serious implications to disability, poverty and development.

5.3.15 NCD-related deaths in Respondent's Family in the last 5 Years

Figure 5.8 shows NCD related deaths which occurred within the family of respondents in the last five years. Nearly 54 per cent respondent's said of deaths from NCDs occurred in the last five years within the family. Most of them died due to diabetes related complications and heart attack.

Figure 5.8 NCD-related Deaths in Respondent's Family in the Last 5 Years

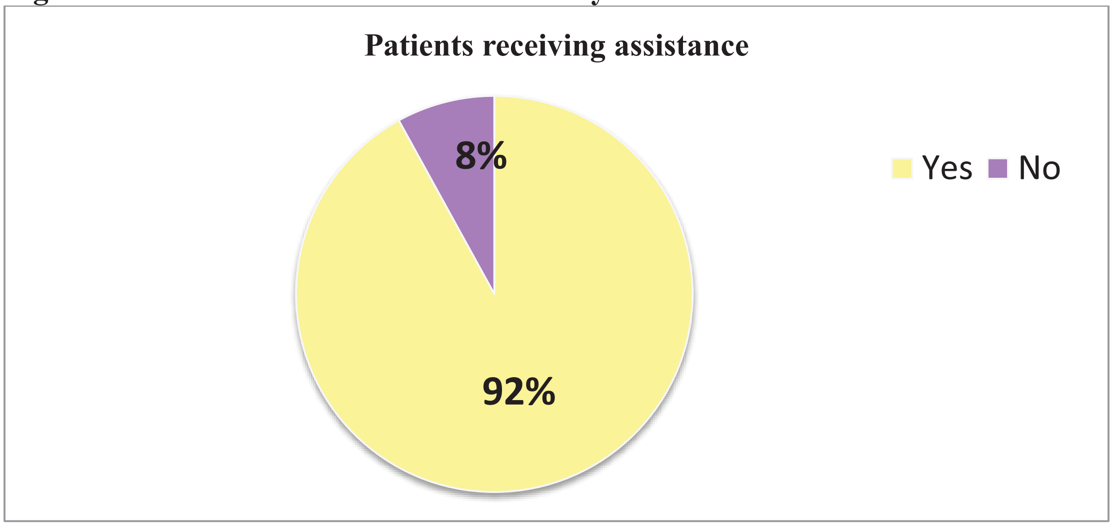


Source: By the Researcher, 2013.

5.3.16 Level of Assistance received by the NCD patients

The study shows that 92 per cent of all patients interviewed received treatment for their diabetes from the diabetic Centres. It is important to note that 8 per cent of respondents said they did not receive the required health assistance from the Centre so they had to look for assistance outside at their cost.

Figure 5.9 – Level of Assistance Received by NCD Patients

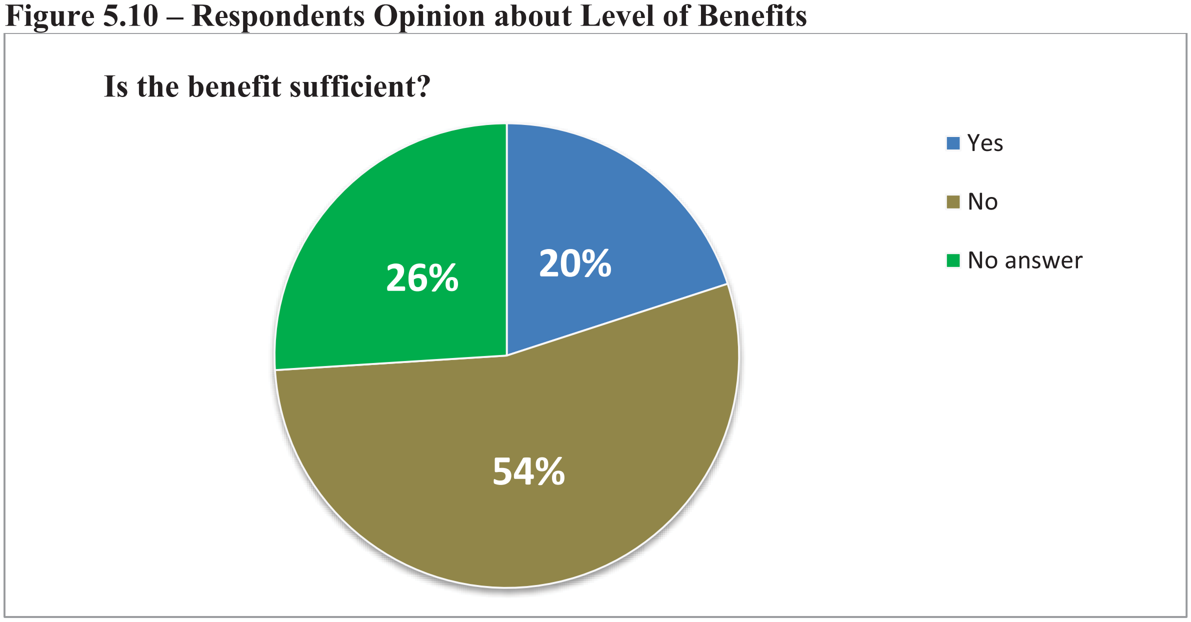


Source: By the Researcher, 2013.

5.3.17 Patients' Opinion of Level of Benefits

An overwhelming 54 per cent of the respondents said that the benefits provided by Diabetic Centre were not sufficient. Many NCD patients raised concerns on where the donor funding targeted at reducing NCDs is being spent. This is because they feel that the level of assistance they received was insufficient. However, 20 per cent said the current benefits they received were sufficient while 26 per cent did not respond to this question (Figure 5.10).

Figure 5.10 – Respondents Opinion about Level of Benefits

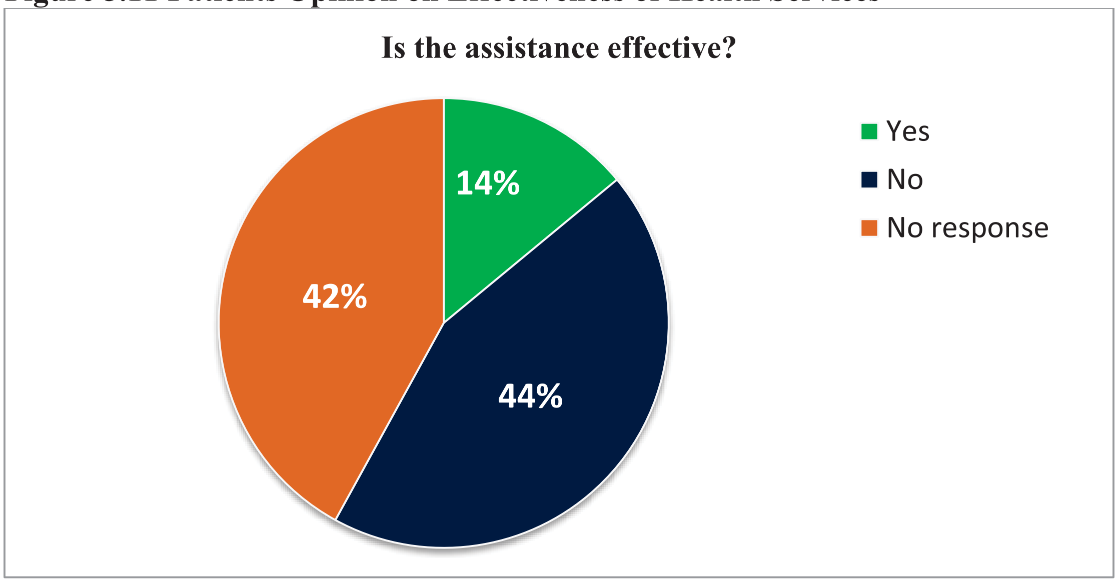


Source: By the Researcher, 2013.

5.3.18 Patients Opinion on Effectiveness of Benefits

When asked whether health services was effective, a mere 14 per cent affirmed this. A large percentage (nearly 44 per cent) said otherwise while 42 per cent did not have any response to this question.

Figure 5.11 Patients Opinion on Effectiveness of Health Services



Source: By the Researcher, 2013.

5.4 NCD Policy issues in Fiji

Fiji has a National Strategy on NCDs as mentioned earlier, however there are issue with its implementation (Snowden et al., 2013). The strategy is underpinned by a multi-sectoral and strategic approach. This includes specific policy and legislative actions. Fiji was the third country globally to ratify the Framework Convention on Tobacco Control, and this has contributed to a draft of regulations including taxes, controls on sales and settings (Cussen and McCool, 2011).

There have also been taxation measures related to alcohol (WHO, 2011b) and diet (Fiji Ministry of Finance, 2012). The strategy has identified other actions which have been implemented such as the school canteen policy, which dictates what foods can be sold in schools. While many of the actions were specified in the NCD strategy, some were not, and there is no documentation to indicate how these were developed (Snowden et al, 2013). There is also no documentation to indicate monitoring of the NCD strategy. Although the ministry is monitoring its strategic plan and associated indicators, this is mainly through infrequent surveys (STEPS and National Nutrition Survey) rather than more specific process and outcome evaluation (ibid.).

Recently a new unit to focus on policy and strategy has been established by The Fiji Ministry of Health, this may contribute towards greater coherence in the policy domain. The Fiji Ministry of Primary Industries (MPI), while heavily focused on food security in its strategic plan, makes no mention of NCDs and indeed has no emphasis on quality of food production, only on reducing food imports (Fiji Ministry of Primary Industries, 2009).

The Fiji Ministry of Education in its strategic plan makes no mention of health but is implementing a Health Promoting Schools project, which is a collaboration with WHO. A memorandum of understanding was signed between Fiji Ministry of Health and Fiji Ministry of Education in 2009, mainly to support the school canteen guidelines (Roberts et al., 2011).

The researcher finds that the strategy documents of other ministries (Fiji Ministry of Women, Fiji Ministry of Finance, Commerce and Trade) are not found to make any explicit mention of NCDs and Snowden et al., 2013 in her research has found the same. Business and industry (locally based) are involved in community-based activities. A number of non-government organisations have moved into delivery of primary health care services in some areas, and international groups are also key in delivering specialist services (Negin and Robinson, 2010). However, currently there are no policy in the ministry regarding how or when it engages with the private sector and no overall strategy on this issue, although the strategic plan includes an objective of increasing private health care providers (Negin, Irava, and Morgan, 2012).

Cognizant of their corporate social responsibility, private sector members of the newly formed Fiji Beverage Group (FBG) entered into a Memorandum of Understanding to support healthy active lifestyles for people in Fiji, which was signed in August 2013 (Islands Business, 2013).

The undertakings outlined in the Memorandum of Understanding are designed to support healthy, active lifestyles for all Fijians. By providing more great-tasting, low-kilojoule choices and ensuring availability and awareness, as well as developing proactive initiatives around things such as physical activity and nutrition education (Islands Business, 2013).

In addition, the FBG is committed to responsible sales and marketing; the group has agreed they will not directly market to children under the age of 12 years in any media or advertising, recognising the role of parents in ensuring their children have a healthy, balanced diet (Islands Business, 2013).

Similarly other non-beverage groups of industry such as Nestle and Fiji Flour Mills (FMF) have agreed to take necessary steps to reduce salt contents in their products (Islands Business, 2013). Other non-manufacturing private sector organisations such as banks and telecom service providers are actively engaged in awareness campaigns with many civil society organisations to promote healthier lifestyles such as sponsoring sports equipment, weekly walk for health and many more sports activities.

5.5 Conclusion

This chapter has discussed the findings of NCDs, especially diabetes as the focus. The study findings were derived from secondary sources and findings followed by the survey analysis by the researcher; however it lacked a probability sample as a result of the study mainly being based on questionnaire survey.

The study highlighted existing and emerging trends and correlations with subjects related to NCDs and AusAID support. This chapter also identified the prevention and control methods for health Ministry in Fiji in dealing with people with NCDs. That lifestyle diseases such as NCDs are on rise is reason enough why the Fiji Ministry of Health should focus on policies as a priority area.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Health and Development are closely interlinked. There has been a challenging pattern of diseases globally shifting away from communicable to non-communicable diseases. Non-communicable diseases (NCDs), namely cancers, cardiovascular disease, chronic respiratory diseases and diabetes, are chronic, costly but largely preventable diseases. These four diseases share common modifiable risk factors and are a major cause of poverty, a barrier to economic development, and a serious threat to the achievement of the Millennium Development Goals (MDGs). NCDs are the world's number one killer, causing 60 per cent of all deaths globally. A staggering 35 million people, of which 18 million are women, die every year from these silent killers. Thus NCDs represent the biggest threat to women's health worldwide, increasingly impacting on women in developing countries in their most productive years. The costs of NCDs to families and societies are high and escalating, in terms of healthcare and lost productivity. For these reasons, NCDs have been identified as a global risk, and one of the most important threats to human kind.

As the literature shows, health is not adequately integrated into policy design, despite the substantial amount of evidence on its importance for economic growth and human development. Efforts to accelerate progress in health have focused on strategies to mobilize more financial resources both domestically and through increased foreign aid. Yet, there is no consensus as to whether higher aid inflows improve health services.

Additionally, decisions made outside of the health sector have a strong bearing on factors that influence NCD-related risks. There is ample evidence of the deterioration of traditional food systems, decline in the use of subsistence crops, growing dependence on food imports, and increased consumption of unhealthy food, alcohol and tobacco. These are linked to integration into global markets, asymmetrical trade and trade liberalisation. The complex causal pathways for NCDs suggest that successful preventive measures are more likely to come from policy-related changes that directly affect the socioeconomic behaviour of communities and individuals than from public health awareness and education types of interventions. Yet the response to NCDs is overwhelmingly framed as a Fiji Ministry of Health's affair only and actions on the ground have so far almost exclusively relied on awareness, education and costly care and treatment. The importance of upstream level interventions on social determinants is recognised in communiques, declaration of commitments and broad plans but seldom in practice. This underpins the urgency and relevance of addressing NCDS in a more integrated way.

AusAID is one of the major donors in the Pacific Islands Countries and in Fiji. AusAID has made contribution to the health sector in Fiji through its Fiji Health Sector Programme. However, the results are not in favour as the number of NCD cases, particularly diabetes, are still increasing. There is a greater need for managing health services. There is a need for donors to harmonize existing monitoring and evaluation frameworks and contribute to the country's overall results for NCDs. Countries and donor partners need to prioritize and strengthen national health information systems. Development partners and countries need to continue to track progress and results in health from the perspective of aid effectiveness.

The present study on NCDs and effectiveness of Aid and health services used a qualitative research approach. However, the research methodology was not only confined to a qualitative one, as data from primary and secondary sources were also used, tabulated and analysed quantitatively. This study adopted a 'triangulation' method focusing both qualitative and quantitative approaches. The methods of data collection included questionnaire survey, observation and informal discussions. The researcher observed that the aid effectiveness literature tends to focus on the aid and policy side, and much of the literature on health focuses on providing and analysing information on health alone. Studies that do both are rare.

6.1.1 Linkages of Theoretical Approaches to Findings

The conceptual models that revolved around NCDs and AusAID's support were analysed. The study found linkages between urbanization and NCDs. Study has revealed that Urbanization leads to NCDs in Fiji. Urbanization has changed the lifestyle of people and as such causes more NCD rates in Fiji. Poor Nutrition and processed food is another cause of NCDs. In recent years, the towns and cities have witnessed population growth with the influx of people from rural areas in search of better opportunities.

This study found that expiry of land leases and increasing economic activities in the urban areas in Fiji and rural deprivations are attracting rural dwellers, contributing to escalating urbanization. Upon arrival in urban areas, most of these rural dwellers engage in informal sector activities for a livelihood. In most of the cases, they move away from traditional food and rely on processed and less nutritious food in the urban areas. This increases the vulnerability to low nutritional status and increases the chances of NCDs. Urbanization increases stressful life in cities and towns but is also responsible for changing life styles that aggravate incidence of NCDs.

The study found strong linkages between poverty and NCDs. In Fiji, people who are suffering from diabetes are mostly poor. Poor people are found to have lower education, thus lower paid jobs or no jobs and they continue to live in poor living and health conditions. In most cases, the low paid jobs have more diabetes in and are at risk of getting hypertension and obesity or heart attack as they rely on cheap foods which does not provide all the nutrients one needs.

Disability and NCDs are closely linked closely; hence is of alarming concern in Fiji. About 400 amputations are done annually in Fiji, which leads to many people becoming disabled and in most cases is a cause of higher medical costs, and poverty also increases. People with disabilities are more susceptible to developing chronic conditions because of the influence of behavioural risk factors such as lack of exercise and smoking, as well as higher rates of overweight, obesity and premature ageing.

Ageing and NCDs are linked. Ageing brings an increased risk of developing chronic disease and disability. Non-communicable diseases are already the single largest cause of both mortality and morbidity in Fiji.

NCDs and trade have a very strong linkage in Fiji. Unhealthy cheap imported food creates incentives for unhealthy diets, a leading cause of NCDs. On the other hand, cheap imports undercut local agricultural production, leading to decreased production capacity and greater dependency on food imports.

The socioeconomic impacts and the burden of NCDs threaten to overwhelm Fiji's already overstretched health services as they absorb substantial amounts of resources. With the limited resources, devising low-cost and high-impact interventions should take place immediately.

6.1.2 Summary of Broad Findings

In recent years, westernization has contributed to substantial change in lifestyle and dietary patterns in Fiji. More people are becoming dependent on imported food with a lower nutritional value and they are moving away from the traditional food and way of living.

The habits have changed with changing consumption patterns and ways of life as the economy becomes monetised. Non-communicable diseases have become a leading cause of death in Fiji.

The broad findings are as follows:

1. Diabetes is one of the leading NCDs in Fiji. Nearly 30 per cent of Fiji's population or 102,000 people above the age group of 25 suffer from diabetes.

2. Smoking, poor diet, alcohol consumption, physical inactivity, and changing life-styles are the major risks factors of NCDs in Fiji.

3. NCDs put a heavy economic burden on the government. NCDs drain out about F$96 million of government's finances annually.

4. There have been substantial aid flows from the donors to the health sector in Fiji to supplement government's efforts in tackling NCDs. The total funding by major donors was F$22 million in 2010, i.e. 8.8 per cent of the total health expenditure in Fiji.

5. There has been an increase of aid by 220 per cent to the health sector in Fiji, an increase from F$6.9 million in 2007 to $22.1 million in 2010.

6. AusAID is one of the major donors, providing about F$13 million or 60 per cent of the total aid assistance to the health sector in Fiji in 2010.

7. AusAID through the Fiji Health Sector Support Programme (FHSSP) provided nearly A$21 million between 2006 and 2012 for tackling NCDs in Fiji, especially focusing on diabetes and hypertension.

8. An allocation pattern of donor funding shows that preventive and public health accounted for about 16 per cent, training of health personnel about 18 per cent, environmental and food security and curative care 3 per cent each. A larger volume of fund, i.e. nearly 28 per cent was allocated for administrative costs.

9. The AusAID programme for health services especially NCDs in Fiji greatly supplements government's efforts. However, it faces numerous challenges in enhancing its effectiveness.

10. The primary survey that was conducted shows that a larger proportion of diabetic patients are Indo-Fijians than indigenous Fijians. Of the 50 people in the sample, 78 per cent were Indo-Fijians, and 22 per cent indigenous Fijians. This is mostly due to land expiry issues and Indo-Fijians moving to urban areas.

11. Ageing is closely linked to NCDs. NCDs affect the higher age groups. The survey shows that two-thirds of people affected by diabetes were 45 years and above. Of this, 34 per cent were in the age of 55 years and above.

12. About 40 per cent of the respondents were in employment, either as salary earners or self-employed. Little less than one-third of respondents were unemployed.

13. In terms of marital status of respondents, nearly 64 per cent were married and another 14 per cent were currently single individuals.

14. Of the total sample, 36 per cent had hypertension and 10 per cent suffered from heart-related diseases, and 2 per cent each suffered from obesity and chronic respiratory problems.

15. The income level of the respondents varied widely. A bulk of respondents, i.e. 38 per cent were in the income group of F$0–49 per week and about 66 per cent had an income of F$149 per week.

16. The question relating to the impact of NCDs on the jobs and income level showed about 76 per cent of respondents said their income level declined due to the NCD diseases. Many cases said they had stopped working.

17. Although a majority of respondents said they visit the health clinic frequently for a check-up, 14 per cent reported they visit only occasionally and another 10 per cent said they visit rarely.

18. Over the total NCD patients surveyed, two-thirds of NCD respondents said they faced difficulties in accessing health services. Transport, finance and lack of family support were the major challenges for in accessing health services.

19. About 26 per cent of respondents said medication has been either unavailable or delayed in supply, so there is need for improvement in service delivery.

20. Nearly 26 per cent of diabetic patients had undergone surgery or had limbs amputated due to complications of diabetes.

21. About 54 per cent of deaths in the respondents' family in the last five years were NCD-related and primarily due to diabetic complications or heart attack.

22. A majority of respondents, i.e. nearly 54 per cent, said the benefits provided by the diabetic Centre were not sufficient and the service delivery needs to be more efficient and effective.

6. 2 Recommendations

Based on findings from this study, some suggestions are outlined to address the challenges of NCD issues in Fiji and at the same time measuring aid effectiveness. These suggestions are for the government, NGOs and donors dealing with NCDs. These suggestions are:

1. Some efforts have been made in prevention of NCDs however additional effort is needed effort is also needed to demonstrate the added value of aid effectiveness in terms of development impact.

2. The need for greater monitoring and evaluation must be complemented for ensuring that the findings gained feeds into decision-making processes.

3. The difficulty of determining impacts must also be acknowledged. Proving on the contribution, rather than the attribution, may be more feasible. Donors and recipients need to invest more in monitoring and evaluation systems in order to further, and fully, assess progress.

4. Strategies and plans should be regularly reviewed and updated, and strong monitoring systems are therefore critical. There is also a need to further develop and implement national strategies and programmes to prevent NCDs particularly control diabetes, and reduce its risks.

5. The need is urgent for all people with diabetes to have universal access to NCD health clinics, especially for quality care, training, essential diabetes medications, and other supplies and support.

6. There are potential benefits in encouraging a strategic alliance among governments, international and regional development agencies, health and non-health sectors, mass media, industrial partners, non-governmental organisations, and other stakeholders involved in the prevention and care of diabetes.

7. There is a need for recognising the importance of education and awareness for people affected by diabetes, health professionals and the general public in the prevention and management of diabetes and other NCDs.

8. To integrate diabetes activities with those for other non-communicable diseases in order to promote healthy lifestyles and environments for the prevention and control of diabetes and its complications is very much required. The greatest impact can be achieved by creating healthy public policies that promote NCD prevention and control, and reorient health systems to address the needs of people with such diseases.

9. Encouraging research to advance and apply knowledge about the effective prevention, delivery of care and management of diabetes, is needed.

10. To lessen the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others, to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them.

11. Data relating to NCDs are unreliable and inadequate. The Fiji Ministry of Health should compile national data on all people with different kinds of NCDs and their causes and risk factors. The provision of such data and information allows policy makers to be realistic in laying out facts on the needs and resources needed to support and assist those that are especially affected by NCDs. It should also be a guide for the government when making decisions on the annual budget.

12. The main data gaps are the national data on the prevalence and incidence of NCDs, risk factors, data on the economic burden of disease and costs of NCDs at

community/household level and evidence for cost-effectiveness of intervention programmes.

13. Mainstreaming people with NCDs in the development process is very critical. The poor people with disability in this regard such as mobile health services which are of great significance for those who are not able to go to the clinics should be assisted by the government.

14. The Ministries of Education and Health should develop a register of children at risk for the purpose of early prevention measures.

15. The government can also provide community-based early identification and intervention services, especially in the rural areas.

16. The government should bring back the yearly medical clinic for all students. This clinic should include a thorough check-up with advice and information given to students and their parents, with information that is relevant for their health. These yearly clinics are a preventative measure to help young people not only to be healthy but to be aware of any virus or diseases that are best detected early rather than later in their life.

17. The government should impose import tax on unhealthy foodstuffs with low nutritional values. There is a need for reviewing the food import policy. This can reduce the costs surrounding lifestyle related diseases, which are one of the main contributing factors to NCDs. Additionally, locally processed foods also need to be subjected to better regulations.

18. The role of the media in promoting awareness not only among NCD affected people but the general population is critical.

19. Government should provide scholarships for students and young leaders to study health economics in order for Fiji to have a qualified health economist in country.

20. The government should promote the greater accessibility of health services, both urban and rural, to reduce the high incidence of non-communicable diseases.

21. The Fiji Ministry of Health can provide training and the resources for health workers to detect early onset and prevention of diseases that can result in some sort of disability.

22. The decentralization of medical centres should be done as it allows those even in the rural areas and interior of Fiji to have access to the same facilities and treatment as to those treated in urban medical centres.

23. Gender must be an integral component to all NCD strategies, policies and programmes to ensure the human right of universal access to NCD prevention and treatment programmes. Particular attention should be paid to the reproductive, maternal, new-born and child health continuum of care, which provides important opportunities to prevent, diagnose and treat NCDs.

24. The Ministries of Works and Transport, and Local Government should review the existing regulations to improve the provision of access for people with diabetes who have had an amputation. Many of these patients go through daily physical therapy with physiotherapists but upon discharge, the rehabilitation process is cut short because they cannot procure a wheelchair or any other mobility aid.

25. The NGOs and civil society organizations have a critical role to play. They should conduct continual advocacy and awareness programmes on NCDs. This will enhance the knowledge capacity of the communities in dealing with NCDs. People can be prevented from NCDs.

26. Equally, the private sector can play a vital role with Trade departments of Fiji. Healthy fruits and vegetables can be planted, eaten and sold as well. Greater efforts are needed to ensure strong multi-sectoral support and action.

27. A more strategic approach to engagement with the private sector and civil society organisations may be of value in supporting the MOH in its initiatives and building on existing activities in this area.

28. To establish, where necessary, coordination mechanisms involving Ministries of Finance, Health and Trade, and other relevant ministries, institutions and civil society to address the NCD crisis.

29. Undertaking impact assessments, introducing policies, including incentives (e.g. subsidies) and disincentives (e.g. taxation), which affect the risk factors for NCDs and participating in international trade negotiations.

30. Implementation of strategies to accelerate the regional and national efforts to develop and implement food standards for relevant nutrients (e.g. fat, sugar and salt content in processed foods) is needed.

31. The economic and social contributions of older people should be recognised, and "productive ageing" should be enabled by strategies supporting the health of the older populations.

6.3 Future Research

The study found that the number of NCDs is increasing at an alarming rate, where the incidence of diabetes is the highest, which in turn has led to an increase in the number of disabled people in Fiji. Since 1996, the population census of the incidence of disability has doubled (Fiji Islands Bureau of Statistics, 2008). Nearly 400 amputations per year in Fiji were registered by the health professionals. This aspect needs systematic study. There is a need to undertake further in-depth systematic studies to assess the socioeconomic implications of NCDs and the effectiveness of donor funds from Fiji's traditional donors for the Fiji Ministry of Health.

It is important to identify and understand the dimensions involved in NCDs. The present study had a small sample that may not bring generalizations. Therefore, a countrywide study is required to assess the effectiveness of aid and its implications for health development in Fiji. There were also difficulties in death cause recording, sequencing, coding, tabulation and interpretation. A study relating NCD- mortality is most needed.

BIBLIOGRAPHY

Abbott, D. and Pollard, S. (2004). Hardship and Poverty in the Pacific. Retrieved on 7 July 2013 from: http://www.paddle.usp.ac.fj/collect/paddle/index/assoc/adb004.dir/doc.pdf

Abegunde, D. and Stanicole, A. (2006). An estimation of the economic impact of chronic non-communicable diseases in selected countries, Working Paper, World Health Organization, Geneva.

ADB (Asian Development Bank) (2012). The state of Pacific towns and cities: Urbanization in ADB's Pacific developing countries. Philippines, Manila.

Agenor, P., Canuto, O. and Silva, L. (2010). 'On Gender and Growth: The Role of Intergenerational Health Externalities and Women's Occupational Constraints'. *World Bank Policy Research Working Paper*. World Bank, Washington, DC.

Anand, V., Mazumdar, S., Tukana, I., Snowdon, W., and Manoa, L. (2011). Patient perspectives and usage of the National Diabetes Centre, Suva, in Pacific Islands Health Research Symposium, Nadi, Fiji.

Arvin, B.M., Parviz, D-Alai., and Byron, L. (2006). 'Does Foreign Aid Affect the Environment in Developing Countries?', *Journal of Economic Development*, 31: 63-87.

Asante, A., Roberts, G., and Hall, J. (2011). A review of health leadership and management capacity in Fiji. Human Resources for Health Knowledge Hub, University of New South Wales. Sydney, Australia.

Aumua, A., Lewis, J. A. and Roberts, G. (1999 – 2004). Fiji health management reforms, 1999 – 2004, School of Public Health, Curtin University, Perth Western Australia and Fiji School of Medicine, Suva, Fiji.

AusAID (2006). Fiji health sector improvement programme – Senior technical adviser public health and health promotion assignment completion report), Fiji Ministry of Health, Suva, Fiji.

AusAID (2010). Joint Secretariat of the 2-1-22 Pacific NCD programme. 2-1- 22 Pacific NCD Programme Annual Progress Report 1 Jan 31 Dec 2009. Noumea, New Caledonia. Retrieved on 10 August 2013 from: http://www.AusAID.gov.au/countries/pacific/fiji/Documents/non-comm-disease-monitoring-report-2009.pdf

AusAID (2013). Australian ODA to Fiji by Strategic Goal, 2010-11 to 2013-14. Retrieved on 7 July 2013 from: http://www.AusAID.gov.au/countries/pacific/fiji/Pages/default.aspx.

Azzam, O. (2007). Fiji National Health Accounts 2005. Fiji Ministry of Health, Suva, Fiji.

Basu, M., Bavadra, A., Kumar, A. and Lata, M. et al., (1999). Rising to the challenge! Working together for dengue control in Fiji. Secretariat of the Pacific Community Pacific Regional Vector-borne Disease Project. Suva, Fiji.

Bearce, D. H. and Daniel, C. T. (2009). Foreign aid effectiveness and the strategic goals of donor governments, University of Pittsburgh Department of Political Science Working Paper, Pittsburgh, USA.

Berik, G. and Rodgers, Y. (2009). 'Engendering Development Strategies and Macroeconomic Policies: What's Sensible?', In G. Berik, Y. Rodgers and S. Seguino (eds), Social Justice and Gender Equality: Rethinking Development Strategies and Macroeconomic Policies. London: Routledge.

Bleich, N. (2010). Non-communicable chronic disease in Bangladesh: Overview of existing programmes and priorities going forward, Retrieved on 18 August 2013 from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3043199/

Bloom. D. et al., (2011). The Global Economic Burden of Non Communicable Diseases. Harvard School of Public Health and World Economic Forum, WHO, Geneva.

Bonu, S., Rani, M., and Peters, D.H. (2005). 'Does use of tobacco or alcohol contribute to impoverishment from hospitalization costs in India?' *Health Policy and Planning*, 20: 41–49.

Boone, P. (1996). 'Politics and the Effectiveness of Foreign Aid', *European Economic Review*, 40(2): 289-329.

Boone, P. (2006). 'Politics and the effectiveness of foreign aid', *European Economic Review*, 40: 289–329.

Boone, P. (2011). Democratization and Foreign Aid Effectiveness in Developing Countries from 1970-2008. *APS, Annual Meeting Paper.*

Boyce, K.J. (2002a). 'Aid Conditionality as a Tool for Peace building: Opportunities and Constraints', *Development and Change*, 33: 1025 –1048.

Boyce, K.J. (2002b). 'Unpacking Aid', *Development and Change*, 33: 239-246.

Bradshaw, S. and Steyn, K. (2001). Poverty and chronic diseases in South Africa. Cape Town, Medical Research Council of South Africa and WHO, Cape Town, South Africa.

Braunstein, E. (2012). 'Neoliberal Development Macroeconomics: A Consideration of its Gendered Employment Effects', UNRISD Research Paper 2012-1, UNRISD.

Brofenbrenner U. (1994). Ecological models of human development. In: Husen T and Postletwaite TN. Eds. International encyclopedia of education. 2nd ed. Oxford, England: Elsevier Sciences Ltd.

Burnside, C. & Dollar, D. (2000). 'Aid, policies, and growth: revisiting the evidence', *American Economic Review*, 90 (4): 847-868.

Carter, K., Cornelius, M., Taylor, R., Ali, S.S., Rao, C., Lopez, A.D., Lewai, V., Goundar, R. and Mowry, C. (2010). An Assessment of mortality estimates for Fiji, 1949-2008: findings and life tables. Health Information and Systems Knowledge Hub. University of Queensland, Queensland, Australia.

Carter, K., Cornelius, M., Taylor, R., Ali, S.S., Rao, C., Lopez, A.D., Lewai, V., Goundar, R. and Mowry, C. (2011). 'Mortality trends in Fiji', *Australian and New Zealand Journal of Public Health*, 35(5): 412-420.

Cassidy, J.T. (1967). 'Diabetes in Fiji', *New Zealand Medical Journal*, 66: 167-172.

Castillo, J. J. (2009). Convenience Sampling. Retrieved on 9 July 2013 from: Experiment Resources: http://www.experiment-resurces.com/convenience-sampling.html

Collier, P. (2000). 'Economic causes of civil conflict and implications for policy', Development Research Group, World Bank, Washington DC.

Collier, P. (2002). 'Aid Policy and Growth in Post Conflict Societies', World Bank Policy Research Working paper no. 2902. Retrieved on 18 August 2013 from: http: //www.World bank. Org.

Collier, P. & Dollar, D. (2004), "Development Effectiveness: What Have We Learnt?", Economic Journal, 114: 244-271.

Cornelius, M., Decourten, M., Pryor, J., Saketa, S., Waqanivalu, T., Laqeretabua, A. and Chung, E. (2002). Fiji Non - Communicable Diseases (NCD) Steps Survey. Fiji Ministry of Health, Suva, Fiji.

Coyne, T. (2000a). Lifestyle Diseases in Pacific Communities. Secretariat of the Pacific Community, Suva, Fiji.

Coyne, T. (2000b). Lifestyle Disease in the Pacific Communities, South Pacific Commission, Noumea. New Caledonia.

Curtis, M. (2004). 'The Obesity Epidemic in the Pacific Islands', *Journal of Development and Social Transformation,* 1: 37-41.

Cussen, A. and McCool, J. (2011). 'Tobacco Promotion in the Pacific: The Current State of Tobacco Promotion Bans and Options for Accelerating Progress', *Asia-Pacific Journal of Public Health,* 23 (1): 70-78.

DAC (Development Assistance Committee) (2000), 'Development Cooperation Directorate's Glossary'. Retrieved on 18 August 2013 from: http://www.oecd.org/glossary/0,2586,en_2649_33721_1965693_1_1_1_1,00.html#1965422

DAC (Development Assistance Committee) (2004). Aid Statistics at a Glance. Retrieved on 7 July 2013 from: http://www.oecd.org/countrylist/0,2578,en_2649_34447_25602317_1_1_1_1,00.html

DAC (Development Assistance Committee) (2011) DAC Report on Multilateral Aid. Retrieved on 29 July 2013 from: http://www.oecd.org/dac/aid-architecture/49014277.pdf

Dalton, A. and Crowley, S. (2000). Economic Impact of NCD in the Pacific Islands, a paper presented at the workshop on Obesity Prevention and Control Strategies in the Pacific, Apia, Western Samoa, September 26-29. Retrieved on 29 July 2013 from: http://www.deakin.edu.au/buslaw/aef/workingpapers/papers/swp2003_01.pdf

Davidson, W. (2010). Integrative Theory of the Causation of Non0Communicable Diseases: Immune Mimicry Disease (IMD) Theory.

Denizer, C., Dethier, J.J., and Gelb, A. (2011). ‘Development Economics and The International Development Association, The World bank Policy Research Working Paper 5541.

Dietrich, S. (2010). ‘The Politics of Public Health Aid: Why Corrupt Governments Have Incentives to Implement Aid Effectively?’, *World Development,* 39: 55-63.

Doran, C. (2003). Economic impact assessment of non-communicable diseases on hospital resources in Tonga, Vanuatu and Kiribati. SPC, Suva. Fiji.

Douthwaite, B.N., De Hann, V.M. and Keating, D. (2001). ‘Blending “hard" and "soft" science: the "follow-the-technology" approach to catalyzing and evaluating technology change’, in Conservation Ecology **5**(2): 13. Retrieved on 9 July 2013 from: http://www.consecol.org/vol5/iss2/art13

Dreher, A., Nunnenkamp, P. and Thiele, R. (2008). ‘Does Aid for Education Educate Children?’, *World Bank Economic Review*, 22(2): 291-314.

Drewnowski, A. (2004). ‘Obesity and the food environment: Dietary energy density and diet costs’, *American Journal of Preventive Medicine*, 27: 154-162.
Drewnowski, A. and Popkin, B.M. (1997). ‘The nutrition transition: new trends in the global diet’, *Nutrition Reviews*, 55 (2): 31-43.

Duncan, R. and Pollard, S. (2002). 'A Framework for Establishing Priorities in a Country Poverty Reduction Strategy', EDR Working Paper No. 15. Asian Development Bank.

Easterly, W. (2006). *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good.* New York: Penguin Press.

Elisaia, A. et al., (2009). The role of maternal diet in programmeming obesity, hypertension, and metabolic disease and its relevance to the Western Pacific region. Samoa Medical Journal, 1 (8): 2-7.

Engelgau, M. et al., (2011). Capitalizing on the Demographic Transition: Tackling Non-communicable Diseases in South Asia, World Bank, Washington DC. *Retrieved on 12 June 2013 from:*http://iom.edu/~/media/Files/Activity%20Files/Global/ControlChronicDiseases/Sess1Pt1Sp3Hossain.pdf.

Falconer, D.G., Buckley, A. and Colagiuri, R. (2010). 'Counting the cost of type 2 diabetes in Vanuatu', *Diabetes Research and Clinical Practice*, 87(1): 92-97.

FAO (Food and Agriculture Organisation) (1993). Nutrition Country Profiles: National Nutrition Survey (NNS). Fiji. Retrieved on 10 July 2013 from: ftp://ftp.fao.org/es/esn/nutrition/ncp/FIJmap.pdf.

Ferrannini, E. and Cushman, W. (2012).Diabetes and hypertension: the bad companions. The Lancet, Volume 380, Issue 9841.

Fiji Islands Bureau of Statistics (2004). 1996 Fiji Census of Population and Housing. Retrieved on 6 July 2013 from: http://www.statsfiji.gov.fj.

Fiji Islands Bureau of Statistics (2007a). Census 2007 results: population size, growth, structure and distribution. Fiji Island Bureau of Statistics, Suva, Fiji.

Fiji Islands Bureau of Statistics (2007b).Retrieved on 10 August 2013 from: http://www.statsfiji.gov.fj.

Fiji Islands Bureau of Statistics (2008). Fiji Islands population 2007 by geographic sector and ethnicity, Fiji Islands population 2007 by age group & selected regional comparative indicators [Online]. Suva: FBOS. Retrieve on 9 September 2013 from: http://www.statsfiji.gov.fj

Fiji Islands Bureau of Statistics (2010a). Key Statistics. Fiji Islands Bureau of Statistics, Suva. Fiji

Fiji Islands Bureau of Statistics (2010b). Preliminary report, Poverty and Household Incomes in Fiji in 2008-2009, Fiji Island Bureau of Statistics, Suva, Fiji.

Fiji Islands Bureau of Statistics (2013). Retrieved on 21st September 2013 from: http://www.statsfiji.gov.fj.

Fiji Ministry for Education (2012). N.H., Culture and the Arts, Youth and Sports 2012-2014 Education Sector Strategic Development Plan. Suva, Fiji.

Fiji Ministry of Finance, 2012. Budget Statement for 2013. Government of Fiji. Suva.

Fiji Ministry of Health (2004a). Annual Report. Government Printery, Suva, Fiji.

Fiji Ministry of Health (2008b). Retrieved on 20 September 2013 from http://health.gov.fj/diabetes.html

Fiji Ministry of Health (2010a). Fiji Health Accounts 2007-2008. Ministry of Health, Suva, Fiji.

Fiji Ministry of Health (2010b). Fiji Health Accounts: National Health Expenditures 2009-2010, Suva, Fiji.

Fiji Ministry of Health (2010c). Non-communicable diseases prevention and control. National Strategic Plan 2010-2014. Suva, Fiji.

Fiji Ministry of Health (2010d). Organization Chart. Ministry of Health, Suva, Fiji.

Fiji Ministry of Health (2013a). Strategic Plan 2011-2015. Ministry of Health, Suva, Fiji.

Fiji Ministry of Health (2013b). Non-Communicable-Diseases in Fiji. Retrieved on 20 September 2013 from: http://health.gov.fj/non-communicable-diseases.html.

Fiji Ministry of Information (2013a). Fiji Focus. Fiji Retrieved on 10 July 2013 from: http://www.fiji.gov.fj/Media-Center/Fiji-Focus.aspx.
Fiji Ministry of Information (2013b). President calls on Public to take NCDs seriously. Retrieved on 10 August 2013 from: http://www.fiji.gov.fj/Media-Center/Press-Releases/PRESIDENT-CALLS-ON-PUBLIC-TO-TAKE-NCDS-SERIOUSLY.aspx

Fiji Ministry of Primary Industries. (2009). Agriculture Strategic Development Plan 2010-2012, Fiji Ministry of Primary Industries, Suva, Fiji.

Fiji Times Online (2012a). NCD mortality rate worsens. Retrieved on 6 July 2013 from: http://www.fijitimes.com/story.aspx?id=209694.

Fiji Times Online (2012b). Rise in island NCDs. Retrieved on 6 July 2013 from http://www.fijitimes.com/story.aspx?id=199791.

Fiji Times Online (2013). $96m bill for NCD. Retrieved on 23rd September 2013 from: shttp://www.fijitimes.com/story.aspx?id=246318

Fink, A. (2005). *Conducting Research Literature Reviews: From the Internet to Paper*, Sage Publications, London.

Gebhard, N. and Kitterman, K. (2008). Healthy Aid? The (In) Effectiveness of Health-targeted Development assistance. *ISA's 49th Annual convention meeting paper,* Hilton San Francisco. USA.

Glanz K and Mullis RM. (1988). Environmental interventions to promote healthy eating: a review of models, programs, and evidence. Health Education Quarterly, 15: 395-415.

Global Risks (2010). A Global risk network report. World Economic Forum, Geneva.

Go Fiji (2011). History of Fiji. Retrieved on 6 July 2013 from retrieved from http://www.go-fiji.com/history.html

Gormanee, K., Morrissey, O., Mosley, P.and Verschoor, A. (2005a). 'Aid, Government Expenditure and Aggregate Welfare'. *World Development*, 33(3): 355 and 370.

Gormanee, K., Morrissey, O., Mosley, P.and Verschoor, A. (2005b). 'Aid, Public Spending and Human Welfare: Evidence from Quantile Regressions'. *Journal of International Development*, 17(3): 299 and 309.

Government of Fiji, FHSSP (Fiji Health Sector Support Programme) (2010). Australia-Fiji health sector support programme 2011-2015: Final design report, Government of Fiji, Suva, Fiji.

Government of Fiji, FHSSP (Fiji Health Sector Support Programme) (2012). Annual Plan 2012, Government of Fiji, Suva, Fiji.

Government of Fiji, Fiji National Food and Nutrition Centre (2008). Retrieved on 6 July 2013 from: http://www.nutrition.gov.fj/pdf/nfnc_newsletter/Fiji%20Food%20and%20Nutrition%20newsletter%20Issue%201%202008.pdf

Green LW and Kreuter MW. (2005). Health program planning: an educational and ecological approach. New York: McGraw-Hill.

Hanssen, H. and Tarp, F. (2000). 'Aid and Growth Regression', Centre for Research in Economic Development and Trade (CREDIT), Research Paper series, No. 7. Retrieved on 20 May 2013 from: http://www.nottingham.ac.uk/economics/credit/research/papers/cp.00.7.pdf

Harden A, Peersman G, Oliver S, Mauthner M and Oakley A. (1999). A systematic review of the effectiveness of health promotion interventions in the workplace. Occupational Medicine. 49: 540-8.

Helpage International (2011). Ageing and the challenge of non-communicable diseases in low and middle-income countries: a position paper, Helpage International. Retrieved on 12 August, 2013 from:
http://asksource.ids.ac.uk/cf/keylists/..%5Cdisplay%5Cbibliodisplay.cfm?ID=38007&topic=rehab&search=QL_NCD12&display=full

Hughes, H. (2002). 'Aid has failed the Pacific', Issue Analysis, No. 33, Centre for Independent Studies, Sydney, Australia.

Hughes, H. (2004). 'The Pacific is Viable', Issues Analysis No. 53, Centre for Independent Studies, Sydney, Australia.

Ibrahim, M.M., and Damasceno, A. (2012). Hypertension in developing countries. *Lancet* 380: 611-619. Retrieved on 22 August, 2013 from: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736 (12)61840-6/fulltext

International Diabetes Federation (2013). Bringing Research in Diabetes to Global Environment and Systems – Fiji, Brussels.

Islands Business (2013). *Fiji Beverage Group promotes healthier, active lifestyles.* Retrieved on 13 September, 2013 from: http://www.islandsbusiness.com/news/fiji/2724/fiji-beverage-group-promotes-healthier-active-life/.

Jansen, A.A.J., Parkinson, S., and Robertson, A.F.S. (ed.) (1990). *Food and nutrition in Fiji: a historical review,* volume 1. Suva, Fiji: Department of Nutrition and Dietetics of the Fiji School of Medicine and The Institute of Pacific Studies of the University of the South Pacific.

Kawachi, I. and Wamala, S. (2007). "Poverty and Inequality in a Globalizing World" in Globalization and Health, Edited by Kawachi, Ichiro and Wamala, Sarah, Oxford University Press, Oxford.

Khaleghian, P. (2001). Non-Communicable diseases in Pacific Island Countries: disease burden, economic costs and policy options. SPC, Noumea, New Caledonia.

Khaleghian, P. (2005). Non-Communicable Diseases in Pacific Islands Countries, Disease Burden, Economic Cost and Policy Options, Noumea, New Caledonia.

Khaleghian, P. (2012). Non-communicable diseases in Pacific Island Countries: disease burden, economic costs and policy options. SPC and World Bank, Noumea.

Kidney Foundation of Fiji (2006). Dialysis Centre project, Kidney Foundation of Fiji, Suva, Fiji.

Laaksonen, M. (2003). 'Income and health behaviours. Evidence from monitoring surveys among Finnish adults', *Journal of Epidemiology and Community Health*, 57: 711–717.

McLeroy, K.R, Bibeau, D., Steckler, A. and Glanz, K. (1988). An ecological perspective on health promotion programs. Health Education Quarterly. 15: 351-77.

Mahal, A., Karan, A.,and Engelgau, M. (2010). The economic implications of non-communicable disease for India. HNP Discussion Paper. The World Bank. Washington, DC.

Maharaj, J. and Reddy, M. (2012). Young stroke mortality in Fiji Islands: An economic analysis of national human capital resource loss. International Scholarly Research Network Neurology. Retrieved on 25 September from: http://ni.unimelb.edu.au/__data/assets/pdf_file/0008/857312/WP_34.pdf

Matsuzaki, T. et al., (2011). ‘Association of Alzheimers Disease Pathology with Abnormal Lipid Metabolism’: *The Hisayama Study.* Neurology, 77: 36-47.

Mavoa, H. and McCabe, M. (2008). ‘Sociocultural factors relating to Tongans’ and indigenous Fijians’ patterns of eating, physical activity and body size’, *Asia Pacific Journal of Clinical Nutrition*, 17: 375-384.

Mayer, R.E. (1974). ‘Acquisition processes and resilience under varying testing conditions for structurally different problem solving procedures’, *Journal of Educational Psychology*, 66: 644-656.

Mayosi BM, Flisher AJ, Lalloo UG, Sitas F, Tollman SM and Bradshaw D. (2009). The burden of non-communicable diseases in South Africa. Lancet, 374: 934-47.

McGee, A. (2012). Rethinking Health Sector Wide Approaches (SWAP’s) through the lens of aid effectiveness. Suva, Fiji.

McGregor, A. et al., (2009). ‘Pacific island food security: situation, challenges and opportunities’, *Pacific Economic Bulletin,* 24 (2): 24-42.

Michalow, K. and Weber, A. (2007). ‘Aid Effectiveness Reconsidered: Panel Data Evidence for the Education Sector’. *Discussion Paper*: Hamburg Institute of International Economics

Mikkelson, B. (1995). *Methods for Development Work and Research: A Guide for Practitioners*, Sage Publications, New Delhi, India.

Mills, A. (2011) "Health Systems in Low- and Middle-Income Countries", in *The Oxford Handbook of Health Economics*, edited by Glied, Sherry & Smith, Peter C., Oxford University Press, Oxford.

Mishra, P. and Newhouse, D. (2009). Does health aid matter? *Journal of Health Economics,* 28 (4): 855 and 872.

Narsey, W. (2006). Report on the 2002 and 2003 Household Income and Expenditure Survey. Fiji Islands Bureau of Statistics. Suva, Fiji.

Narsey, W. (2007). Report on the 2004 and 2005 Employment and Unemployment Survey. Fiji Islands Bureau of Statistics. Suva, Fiji.

Narsey, W., Raikoti, T. & Waqavonovono, E. (2010). Preliminary Report: Poverty and Household Income and Expenditure Survey, Fiji Islands Bureau of Statistics, Suva, Fiji.

Ndikumana, L. (2012). 'Applying Evaluation to Development and Aid: Can Evaluation Bridge the Micro-macro Gaps in Aid Effectiveness?'. In F. Bourguigno, M.A. Clemens, J. Mirrlees, J.-D. Naudet, L. Ndikumana, J. Nelson, C. Paradeise, R. Ruben and M. Székely (eds), *Evaluation and Its Discontents: Do We Learn from Experience in Development?.* Agence Française de Développement, Paris.

Negin, J., Irava, J. & Morgan, C. (2012). Development assistance in health–how much, where does it go, and what more do health planners need to know? A case study of Fiji's national health accounts, in Working Paper Series. Nossal Institute for Global Health. University of Melbourne, Melbourne, Australia.

Negin, J. and Robinson, J. (2010). Funding for HIV and Non- Communicable Diseases: Implications for Priority Setting in the Pacific Region. Nossal Institute for Global Health. University of Melbourne, Melbourne, Australia.

O'Dea, J. and Eriksen, M. (2010). Childhood Obesity Prevention: International Research, Controversies, and Interventions. Oxford University Press, Oxford.

OECD (Organisation of Economic Cooperation and Development) (2008). Survey on Monitoring the Paris Declaration: Making Aid More Effective by 2010: Better Aid. Paris: Organization for Economic Co-operation and Development. OECD, France.

OHCHR and UNDP (2013). Pacific Trade and Right to Health, Retrieved on 18 August 2013 from: http://pacific.ohchr.org/docs/PacificTradeRightToHealth.pdf

Padgett, D. K. (1998). *Qualitative Methods in Social Works: Challenges and Rewards*, Sage Publications Inc, California, USA.

Panapasa, S. (2002). 'Disability among older women and men in Fiji: concerns for the future', *Journal of Women and Ageing,* 14 (1-2): 149-162.

Pernia, E. (1994). Urban Poverty in Asia: A survey of critical issues, Asian Development Bank, New York.

PIFS (Pacific Islands Forum Secretariat) (2011).Pacific Regional MDGs Tracking Report, Suva, Fiji.

PIFS (Pacific Islands Forum Secretariat) (2012). Non-communicable diseases and Disability in the Pacific, Paper in Forum's Disability Minister's Meeting, 3-4 October, 2012 , Port Moresby, Papua New Guinea.

Popkin, B.M. (1998). 'The nutrition transition and its health implications in lower-income countries', *Public Health Nutrition*, 1: 5-21.

Popkin, B.M., and Du, S. (2003). 'Dynamics of the Nutrition Transition toward the Animal Foods Sector in China and its Implications: A Worried Perspective', *American Society for Nutritional Sciences*, 29: 3898-3905.

Popkin, B.M. et al., (2006). 'Measuring the full economic costs of diet, physical activity and obesity-related chronic diseases'. *Obesity Reviews*, 7: 271–293.

Potter, S. (2002). 'Undertaking a topic review'. In S. Potter (ed.), *Doing Postgraduate Research*, pp.117-132, Sage Publications, London.

Pratt C A, Lemon S.C, Fernandez, I.D, Goetzel, R., Beresford, S.A, French S.A. (2009). Characteristics of worksite environmental interventions for obesity prevention. *Obesity*, 15: 2171-80.

Rabkin, M., and Sadr, E. W. (2011). 'Why reinvent the wheel? Leveraging the lessons of HIV scale-up to confront non-communicable diseases', *Global Pubic Health*, 6 (3): 247-256.

Rajan, R. and Subramanian, A. (2005). 'What Undermine Aid's Impact on Growth?'. Working Paper, IMF, New York.

Rani, M., Nusrat, S. and Hawken, L. (2012). A qualitative study of governance of evolving response to non-communicable diseases in low-and middle- income countries: current status, risks and options. BMC Public Health.

Ravishankar, N., Gubbins, P., Cooley, R.J. (2010), Financing of global health: tracking development assistance for health from 1990 to 2007, The Lancet, 373: 2113-2124.

Reddy K.S et al., (2007). 'Educational status and cardiovascular risk profile in Indians', *Proceedings of the National Academy of Science*, 104: 16263–16268.

Roberts, G., Irava, W., Tuiketei, T., Nadakuitavuki, R., Otealagi, S., Singh, S., Pellny, M., Fong, M., Mohammed, J., and Chang, O. (2011). The Fiji Islands Health System Review. Health Systems in Transition, Fiji Ministry of Health, Suva. Fiji.

Roberts, G. and Lingam, D. (2008). A situational analysis of the Fiji health sector. Fiji School of Medicine, Suva, Fiji.

Robinson, H. and Hort, K. (2011). Non-communicable diseases and health systems reform in low- and middle-income countries, in Working paper Series. Health Policy and Health Finance Hub. University of Melbourne, Melbourne, Australia.

Roger, A. G. (2000). 'When methods matter: Qualitative research in psychology'. In B. M. Brizuela, J. P. Stewart, R. G. Carrillo & J. G. Berger (eds.) *Acts of Inquiry in Qualitative Research*, pp.51-60, Harvard Education Review, Cambridge, United Kingdom.

Sallis J, Owen N and Fisher E. Ecological models of health behavior. In: Glanz K, Rimer B and Viswanath K. Eds. (2008). Health behavior and health education: theory, research, and practice. 4th ed. United States: Jossey-Bas.

Samb, B., Desai, N.and Nishtar, S. (2010). 'Prevention and management of chronic disease: a litmus test for health-systems strengthening in low-income and middle-income countries', *The Lancet*, 376(9754): 1785-1797.

Schroder, H., Marrugat, J., Vila, J., Covas, M., and Elosua, R. (2004). 'Adherence to the traditional mediterranean diet is inversely associated with body mass index and obesity in a Spanish population', *American Journal of Nutritional Sciences*, pp. 3355-3360.

Seguino, S. (2008). 'Micro and Macro Linkages between Gender, Development and Growth: Implications for the Caribbean Region'. *Journal of Eastern Caribbean Studies*, 33 (4): 8 and 42.

Sharma, N. (2010). Opening address by Neil Sharma, the Minister for Health, 2010 Fiji Health Symposium, Suva, Fiji.

Snowden, W., Waqa, G., Raj, A., Kanungo, A., and Robinson, H. (2013). Non-communicable diseases and health system responses in Fiji. Retrieved on 30 August 2013, from Ghttp://ni.unimelb.edu.au/__data/assets/pdf_file/0008/857312/WP_34.pdf

SOPAC (South Pacific Applied Geoscience Commission) (2010). Integrated Flood Management in the Pacific, A Pilot Project for Nadi (Project Concept Note). Retrieved on 12 July 2013 from retrieved from: https://www.adaptation-fund.org/system/files/AFB.PPRC_.3.8%20Part%202.pdf

SPC (Secretariat of the Pacific Community) (2010a). Life Expectancy. Retrieved on 15 July 2013, from: www.spc.int/prism.

SPC (Secretariat of the Pacific Community) (2010b). Pacific NCD Forum Meeting Report, Suva. Fiji.

SPC (Secretariat of the Pacific Community) (2011a). Fiji and the Secretariat of the Pacific Community, Joint Country Strategy 2010-2014. Noumea.

SPC (Secretariat of the Pacific Community) (2011b). NCD Statistics for the Pacific Islands Countries and Territories. Public Health Division, Secretariat of the Pacific Community, Suva, Fiji.

SPC and WHO (2008). 2-1-22 Pacific NCD Programme Implementation Plan (2008-2011), Suva Fiji.

Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research. Grounded Theory procedures and Techniques*, Sage Publications, London.

Strong JP, Malcom Gt, Mcmahan CA, et al. (1999). Prevalence and extent of atherosclerosis in adolescents and young adults: implications for prevention from Pathobiological Determinants of atherosclerosis in Youth Study. *Journal of the American Medical Association*, pp. 281: 727-735

Sundewall, J., Swanson, R.C., Betigeri, A., Sanders, D., Collins, T.E., Shakarishvili, G. and Brugha, R. (2011). ‘Health-systems strengthening: current and future activities’, *The Lancet*, 377(9773): 1222-1223.

Sutton, R., Roberts, G. and Lingam, D. (2008). Fiji Health Sector Situational Analysis, AusAID and Ministry of Health, Suva, Fiji.

Swinburn, B. (2010). ‘Evidence framework for childhood obesity prevention’, in Waters, Elizabeth; Swinburn, Boyd; Seidell, Jacob and Uauy, Ricardo (eds), *Preventing childhood obesity: evidence, policy and practice*, pp. 49-56, Wiley Blackwell, Chichester, England.

Svensson, Lars E.O. (1999). Aid, growth and democracy. *Economics and Politics*, 11, 275-297.

Szmedra, P., and Sharma, K.L. (2005). Lifestyle diseases and economic development: the case of Nauru and Kiribati, University of the South Pacific, Suva, Fiji.

Taylor, R., Ram, P., Raper, L.R. and Ringrose, H. (1984). ‘Physical activity and prevalence of diabetes in Melanesian and Indian men in Fiji’, *Diabetologia*, 27: 578-582.

Thomas, A. (2000). ‘Meanings and Views of Development’ Allen and Thomas (eds.) Poverty and Development in the 21st Century, Oxford University Press, Oxford.

Thow, A. M., Christine Q., Juventin, L., Kun, R., Khan, A.N. and Swinburn, B.A. (2010a). ‘Taxing soft drinks in the Pacific: implementation lessons for improving health’, *Health Promotion International*, 1: 20-27.

Thow, A. M. and Snowdon, W. (2010b). The effect of trade and trade policy on diet and health in the Pacific islands. In: C., Hawkes, C.Blouin, H. Spencer,, N. Drager and L. Dube (eds),*Trade, Food, Diet and Health: Perspectives and Policy Options*. Blackwell Publications, Chichester, England, pp. 147-168.

Thow, A.M., Snowdon, W., Scholtz, J.T., Leeder, S., Vivili, P.and Swinburn, B.A. (2011a). ‘The role of policy in improving diets: experiences from the Pacific Obesity Prevention in Communities food policy project’, Obesity review. 2011 International Association for the Study of Obesity, 12: 20.

Thow A.M., Heywood P., Schultz J., Quested C., Jan S., and Colagiuri S. (2011b). ‘Trade and the nutrition transition: strengthening policy for health in the Pacific*’, Ecology of Food and Nutrition*, 50 (1): 18.

Times of India (2013). Lifestyle diseases to cost India $6 trillion, study estimates. Retrieved on 7 September 2013 from: http://timesofindia.indiatimes.com/india/Lifestyle-diseases-to-cost-India-6-trillion-study-estimates/articleshow/22385056.cms?intenttarget=no

United Nations (2010a). Global Strategy for Women’s and Children’s Health. United Nations, New York.

United Nations (2010b). World Population Ageing 2009. UN Department of Economic and Social Affairs, United Nations, New York.

United Nations (2011). Political declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases, (2011). United Nations General Assembly, Sixty-sixth session, Agenda item 117, United Nations, New York.

United Nations (2012). Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases. United Nations General Assembly.

Vorster, H., Bourne, L., Venter, C. and Oosthuzen, W. (1999). 'Contribution of Nutrition to the Health Transition in Developing Countries: A Framework for Research and Intervention', *Nutrition Reviews*, 57: 341-349.

Walsh, C. (2005). *TERS The Essential Research Skills*, Amokura Publications, Suva, Fiji.

Watkins, S.C. (1995). 'Social networks and social science history', *Social Science History,* 19: 295- 311.

Wayne, T.D. (2010). The Burden of Non-communicable Diseases in India, Hamilton ON The Cameron Institute. India

Welander, A. (2012). Do Foreign Aid and Globalization Affect Health in Developing Countries?, Master's Thesis II Department of Economics, Lund University, Sweden.

WHO (World Health Organisation) (2007). Aid Effectiveness and Health: Making health system work, Working paper No. 9, WHO/ HSS/ health systems", WHO, Geneva.

WHO (World Health Organisation) (2008a). Closing the gap in generation health equality through action on the social determinants of health. Commission on Social Determinants of Health Final Report. WHO, Geneva.

WHO (World Health Organization) (2008b). Country Health Information Profiles. Country Health Information Profiles Accessed on 5/1/09.http://www.wpro.who.int/hdb/.

WHO (World Health Organization) (2009). Health financing strategy for the Asia Pacific region (2010-2015). WHO, Regional Office for the Western Pacific, Manila.

WHO (World Health Organization) (2010a). European Observatory on Health Systems and Policies. Retrieve on 9 September 2013 from: www.euro.who.int/observatory.

WHO (World Health Organization) (2010b). Global Status Report on Non-communicable diseases. Retrieved on 8 July 2013 from: www.who.int/nmh/publications/ncd_report_full_en.pdf.

WHO (World Health Organization) (2010c). Government expenditure on health as percentage of Total Health Expenditure, 2008: National Health Accounts, WHO, Geneva.

WHO (World Health Organization) (2010d). *Health indicators database*. World Health Organization Regional Office for the Western Pacific, Manila. Retrieve on 8 September 2013 from: http://www.wpro.who.int/hdb/Default.aspx.

WHO (World Health Organization) (2010e). Health Systems financing: the path to universal coverage. WHO, Geneva.

WHO (World Health Organization) (2010f). MDG side-event on NCDs: background paper, WHO, New York.

WHO (World Health Organization) (2010g). Package of Essential non-communicable (PEN) disease interventions for primary health care in low-resource settings. WHO, Geneva.

WHO (World Health Organization) (2011a). Global Status Report on Alcohol and Health. WHO, Geneva.

WHO (World Health Organization) (2011b). Global Status Report on Non-communicable Diseases. WHO, Geneva.

WHO (World Health Organization) (2011c). Non-communicable Diseases Country Profiles, WHO, Geneva.

WHO (World Health Organization) (2011d). Report Meeting of Ministers of Health for the Pacific Island Countries, Suva. Fiji

WHO (World Health Organisation) (2011e). The World Report on Disability. Retrieved on 19 September 2013 from: http://www.who.int/disabilities/world_report/2011/accessible_en.pdf.

WHO (World Health Organisation) (2011f). World Report on Disability, WHO, Geneva.

WHO (World Health Organization) (2012a). The Global Status of NCDs. Retrieved 8 July 2013 from : http://www.who.int/chp/ncd_global_status_report/en/.

WHO (World Health Organisation) (2012b). WHO Global Report: Mortality Attributable to Tobacco.

WHO (World Health Organisation) (2012c). World Health Statistics. WHO, Geneva.

WHO (World Health Organization) (2013). UNICEF, the Government of Sweden and the Government of Botswana, Health in the Post-2015 agenda. Report of the Global Thematic Consultation on Health, April 2013. Retrieved 28 July 2013 from: http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_47-en.pdf.

WHO / FAO (World Health Organization/ Food Agriculture Organization) (2003). A Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases: "the growing epidemic of NCDs, which contributes to the increasing loss of economically productive life years, affects economic growth and places an increasing burden on the healthcare sector", FAO, Rome.

Williamson, C. R. (2008). 'Foreign Aid and Human Development: The Impact of Foreign Aid to the Health Sector', *Southern Economic Journal,* 75(1): 188-207.

Wood, B., Betts, J., Etta, F., Gayfer, J., Kabell, D., Ngwira, N., Sagasti, F. and Samaranayake, M. (2011). 'The Evaluation of the Paris Declaration: Final Report'. Denmark, Copenhagen. Retrieved on 7 July 2013 from: http://www.bmz.de/en/publications/type_of_publication/evaluation/international_joint_evaluations/EvalBericht_Paris_Erklaerung.pdf.

World Bank (1998). Assessing Aid: What Works, What Doesn't and Why? Oxford University Press, Oxford and New York.

World Bank (2011a). The Growing Burden of Non-communicable Diseases: Acting Now to Reverse Course. World Bank, Washington DC.

World Bank (2011b). World Development Report 2012: Gender Equality and Development.The World Bank, Washington, DC.

World Bank (2012). The Economic Costs of Non-communicable Diseases in the Pacific Islands. Retrieved on 28 June 2013 from: http://www.worldbank.org/content/dam/Worldbank/document/the-economic-costs-of-non-communicable-diseases-in-the-pacific-islands.pdf.

World Bank (2013). Health Overview. Retrieved on 8 July 2013 from: http://www.worldbank.org/en/topic/health/overview.

World Economic Forum (2011). Global Economic Burden of NCDs, A report by the World Economic Forum and the Harvard School of Public Health, USA.

WTO (2011). Working Party adopts Samoa's membership. Retrieved 18 July 2013 from: http://www.wto.org/english/news_e/news11_e/acc_wsm_28oct11_e.htm.

Yadav, K. and Krishnan, A. (2008). ‘Changing Patterns of diet, physical activity and obesity among urban, rural and slum populations in north India’, *International Association for the Study of Obesity*, 9: 400-408.

Yang, J. (2013). Social movement for non-communicable disease (NCDs): lessons from social movement theory and HIV/AIDS movement. Department of Health Science, California State University, Fullerton, CA.

Yin, R. K. (1984). Case study research: Design and methods. Newbury Park, CA: Sage.

APPENDIX

Appendix 1

Questionnaire

Topic: AusAID and non-communicable disease in Fiji: A case study of diabetes

Confidentiality: *Your response will be kept confidential and used only for the study purpose. You may withdraw from the survey at any stage.*

Date: ___________ Location of interview: __________________

Part I: General Background (Please tick ✓)

1. Your ethnicity: Fijian ☐ Indian ☐ Others ☐, specify__________
2. Your gender : Male ☐ Female ☐
3. Your age (>15 yr): ☐16-25 ☐26-35 ☐36-45 ☐46-55 ☐ More than 55
4. Your marital status? Single ☐ Married☐ Never☐ Married☐ Divorced☐ Separated☐ Others ☐, specify__________
5. Your employment status: ☐Working ☐studying ☐own business ☐not working ☐others, specify__________
6. What is your occupation?: ______________
7. Mention your weekly income/ wages (F$)? _____________

Part II: Status of Non-Communicable Diseases (NCDs)

8. Are you affected by any of the following disease(s)? (Tick ✓one or more): Diabetes ☐ Cancer ☐ Obesity ☐Chronic respiratory ☐ Heart-related ☐ Hypertension ☐
9. Mention no. of your family members affected by: (a) diabetes: _________ (b) obesity______

   (c) hypertension________ (d) heart ailment____________
10. Is diabetes a serious disease? ☐ Yes ☐ No Don't know ☐
11. If diabetic, when did you get diagnosed first? (yr): _________
12. How severe is your diabetes? Very severe ☐ severe ☐ mild ☐ controlled
13. Does your disease affect your earnings?: declined ☐ became unemployed ☐ Not affected ☐

14. How often do you visit health centre?: Frequently ☐ Occasionally ☐ Rarely ☐ Never ☐

15. What problem(s) do you face in going to the health centre?: Transportation ☐ financial ☐ lack of family support ☐ others ☐, specify________________

16. Do you undertake the following regularly: Walk ☐ Meditation ☐ Exercise ☐ Checkup ☐

17. How often do you eat fruits? Daily ☐ Occasionally ☐ Rarely ☐ Never ☐

18. How often do you eat vegetables? Daily ☐ Occasionally ☐ Rarely ☐ Never ☐

19. Have you undergone any surgery and removed body part (s) due to infections: ☐ Yes ☐ No

20. How many of your family members have undergone similar surgery in the last 5 years:_____

21. Did you have any death in the family in the last 2 years due to diabetes/ cancer or heart problem ☐ Yes ☐ No

Part III: Benefits of Assistance Programme

22. Are you getting any assistance from any one? ☐ Yes ☐ No

(a) If yes, from whom?: NGO ☐ Health Ministry ☐ Aid donor ☐, specify_____________

(b) How much financial assistance did you get?: ______________

23. Identify the type of benefits you are getting from the donor/NGO: 1.______ 2. _____ 3. _____

24. Does the assistance you get help you: Fully ☐ Partially ☐ Not applicable ☐

25. Do you think the benefit you are getting is sufficient? Yes ☐ No ☐

26. Which aspects of the assistance you like the most?: 1._________ 2. ___________3. _________

27. Identify aspects of assistance you don't like?: 1._______ 2. ______________3. _________

28. Do you think the assistance from the donor is effective? : Yes ☐ No ☐ Can't say ☐

29. Identify the level of difficulties to have access to any assistance: Very difficult ☐ Some what difficult ☐ Not difficult ☐ No access at al ☐

30. Suggest some ways in which the health assistance programme may improve? 1._____________ 2. ______________ 3. ___________________ 4.____________________

Thank you for your cooperation