**BURDEN OF A CHRONIC CONDITION- REPORT ON THE BURDEN OF DIABETES IN AUSTRALIA AND CRITICAL ANALYSIS OF A FRAMEWORK FOR THE PREVENTION OR MANAGEMENT OF DIABETES.**

**INTRODUCTION**

Chronic diseases and conditions such as cancer, stroke, type 2 diabetes, obesity and other diseases cause a lot of pressure and burden on the global health due to the cost of preventing and maintaining them. A chronic disease, in this case, refers to conditions that persist for a long time and the patients have to be put on continuous medication to maintain the condition or to cure the disease (Al Tunaiji, Davis, Mackey & Khan, 2014). A chronic illness can be defined as a condition that can last for three or more months when the patient is still under treatment. Statistics show that about eighty percent of adults in Australia have at least one chronic disease (Baird, Funderburk, Whitt & Wilbanks, 2012). The paper will examine the specific burdens that diabetes has had both on the health sector, on the families and the government as far as providing care for the people who have diabetes is concerned in Australia. The research will also critically analyse the broader determinants affecting diabetes, assess the risks and finally give a description of the framework for the prevention of diabetes.

**DIABETES AND ITS BURDEN IN AUSTRALIA**

Diabetes is considered as the fastest growing chronic disease in the world and number of people with the disease grows in every country. Diabetes causes approximately 1.9 million deaths globally every year (Zwar, et al., 2017). The high blood glucose levels also results to about 2.3 million deaths through other resulting cardiovascular complications. Globally, in every 11 adults one of them has diabetes. One in every two adults having diabetes has not been diagnosed. The global health expenditure on diabetes is about $673 billion every year which is about 12 % of the total expenditure (Zwar, et al., 2017). There are also more than half a million children living with diabetes and in every six seconds a person dies from diabetes leading to at least 5 million deaths in 2015. A global estimation shows that by 2040, at least one adult among ten will have diabetes and the diabetes-related health expenditure will be $802 billion. Australia, China, United States and Europe are some of the areas that have been greatly affected by diabetes related problems.

Diabetes is considered as a 21st-century epidemic that continuous to confront Australian health system and the government today. According to a report by Diabetes Australia, about 280 people develop diabetes every day in Australia which means that after every five minutes one person develops diabetes (Burrow, 2016). At this faster rate of development, about 1.7 million people in Australia have diabetes which includes all types of diagnosed diabetes and the silent undiagnosed diabetic conditions (Christl, 2012). The statistics also show that more than one hundred thousand Australians developed diabetes in the past one year. For every individual diagnosed with diabetes, there is always a family member who is also living with diabetes in support, which means that diabetes affects an estimated number of about 2.4 million people in Australia every day. Australia incurs an annual cost of diabetes care of about $14.6 billion (El Saghir et al, 2011). The money is mainly spent on diagnosis, medication, and treatment of related diseases resulting from diabetes.

Apart from the financial burden that diabetes has put in Australia, the disease also affects people in various ways. For example, people living with diabetes risk developing other related complications such as blindness, swelling of legs and other conditions which greatly affect the quality of their lives (Espinoza, 2016). Amputations are also common occurrences among the people living with diabetes, and it leads to many deaths and disabilities which put a lot of burden on the patients and their families. Diabetes is also the fastest growing chronic disease in Australia ahead of cancer and heart diseases. Therefore, diabetes has other long-term effects on the lives of the victims which include physical, mental and emotional effects.

**BROADER DETERMINANTS OF DIABETES**

Diabetes is one of the major problems facing most communities today across the world. The occurrence, prevention, and management of the disease are determined by many factors that also affect the coexistence of the society as a whole (Gerber et al., 2005). There are various factors which are external to the individual which affects the prevalence of diabetes as a chronic disease. Achieving a sustainable improvement in health care requires a deeper understanding of the social, political and economic determinants of the disease. The social determinants refer to the socioecological factors that affect the general health of the people.

The environment where one lives can significantly affect his life especially while living with diabetes. The components of physical environment such as safety, transportation and access to healthy food are important determinants that may influence the process of managing people with diabetes (Shrivastava, Shrivastava & Ramasamy, 2016). When people with diabetes face challenges of limited transport access, inaccessibility to healthy food and other factors, there is the likelihood that they will not have access to proper care and the condition may worsen. In most cases, people living with diabetes may need to walk outside the local community to other areas to access healthy food and health care facilities, hence limited transportation in the countryside may affect their recovery rates (Harford et al., 2011). Lack of public transport in the local neighborhoods may affect traveling hence affecting the access to healthcare. Community safety is another factor that may have an impact on the people living with diabetes. For instance, urban areas may have high levels of crime that affect the overall safety of the area prohibiting access to quality health care service. Congestion in urban areas may also lead to lack of walking paths and grounds to encourage physical activity which is considered as one of the preventive measures of diabetes (Nuño, Coleman, Bengoa &Sauto, 2012).

In addition, there is a strong connection between the health of individuals in a society and their socio-economic status. Many factors explain the degree of relationship between the social character of people in a community and their health. For instance, the level of education, family income, and employment influences the socioeconomic status of people and therefore their health (La Merrill, Cirillo, Krigbaum & Cohn, 2015). Higher levels of education have a direct link with greater health outcome which is associated with the ability to access health care on time and capacity to live a healthy lifestyle (Nicolucci, 2013). Education also leads to a higher access to health information that in turn leads to a better response to diabetes. People who are educated are also likely to seek medical attention when they notice any signs of diabetes hence reducing the risk of late diagnosis. In most cases, majority of people with diabetes who have not been diagnosed are mainly the uneducated lot.

Information about diabetes should be made available to the public to create awareness about diabetes and its possible effects on the life of people. Forums such as social media, televisions and other forms of media should be used to talk about diabetes so that people can know when to go for screening and when they suspect that they may have diabetes (Luo et al., 2013). Establishing programs that promote diabetes prevention practices is a major step in encouraging people to live a healthy life. Helping people with diabetes to take health insurance covers is also a significant move to ease the burden on the families who have to spend huge sums of money in taking care of their patients. As a result of the above analysis, it is evident that diabetes has a significant influence on the social, physical, emotional and cultural lives of the people in Australia and other countries across the world (Ouwens et al., 2005).

Effective communication is an important factor that determines human interaction and it depends on the cultural and social backgrounds of individuals. Effective communication skills help people to share and receive more information about the prevention, screening and treatment of diabetes which then reduces the associated risks.

**RISK FACTORS ASSOCIATED WITH DIABETES**

There are many risk factors related to diabetes. Most of the diabetes risk factors are associated with the lifestyle choice that people take. Some of the risk factors related to diabetes include the family history, race, age, gestational complications, environmental factors, weight, and inactivity among other factors. Overweight and obesity are considered as major predictors of diabetes specifically type2 diabetes (Organization, 2008). Research shows that almost ninety percent of the people living with diabetes are overweight or have obesity. Having too much weight adds pressure to the body and affects its ability to utilize the insulin to control the blood pressure (Shrivastava, Shrivastava & Ramasamy, 2016). Obesity or overweight strains the body cells affecting their ability to use the insulin hormone and hence people who are overweight are likely to develop type diabetes. For instance, there has been a significant increase in the number of people suffering from obesity in Australia and this increment is associated with the growing prevalence of obesity and overweight in the country.

Inactivity is also considered as a risk factor for developing diabetes as the less active one is, the higher the chances of developing diabetes. Physical activity is connected to the weight gain or loss and hence it is important in controlling the weight (Organization, 2008). When someone engages in physical activity, he or she uses the glucose as energy and reduces the amount of glucose in the cells, making the cells more sensitive to the presence of insulin. However, people who do not engage in physical activities may find it difficult to control their weight and stand high chances of becoming overweight. Being physically inactive reduces the rate at which one’s body uses glucose, therefore, the cells start becoming less sensitive to insulin which increases the risk of someone developing diabetes (Rubin, 2017). The risk of developing diabetes also increases with age as one tends to gain weight as he or she ages. The cells also grow old making them less sensitive to the insulin produced by the pancreas. Age reduces the chances of engaging in physical activity which leaves people more susceptible to weight gain thus developing diabetic conditions (Sayegh & Knight, 2012).

Genetics also play an important role on the risk of developing diabetes. There is significant information that link diabetes and genetics and hence one is likely to inherit diabetes from a family member. Therefore, people with family members suffering from diabetes stand high chances of developing diabetes in their lifetime (Shrivastava, Shrivastava & Ramasamy, 2016). Dietary behaviors are also significantly associated with diabetes. Living with a poor diet is likely to lead to overweight which in turn would increase the risk of getting diabetes. Eating a balance diet and taking part in physical activities is likely to reduce the risk of developing diabetes. Furthermore, taking foods with too much sugar is also likely to increase the chances of developing diabetes. An increased intake of the processed foods and other deep-frozen foods such as pizzas, snacks and other kinds of foods are likely to increase the chances of insulin resistance on the users. Eating a healthy diet with natural vegetables and other natural and fresh foods are likely to reduce the risk of developing diabetes.

The diet of a particular group is often influenced by the cultural values and beliefs that affect the kinds of foods that people eat. The kinds of foods available in one’s locality are also likely to affect his diet in various ways. For example, in some parts of the world, the natural fresh vegetables are expensive while the processed foods are cheap. Therefore, the average people can only afford the processed foods which have a significant influence on their risk to developing diabetes.

**INNOVATIVE CARE OF CHRONIC DISEASES FRAMEWORK**

The innovative care of chronic condition framework proposes that all health care systems should reorganize their health care to ensure that they provide caution to the rising burden of the chronic diseases (Shrivastava, Shrivastava & Ramasamy, 2016). The innovative care for chronic framework alerts all the decision makers across the world to ensure that they create and implement health care policies that aim at reducing the burden of the chronic conditions. The innovative care of chronic diseases framework provides some fundamental components within the health care organization, the patient, and the community.

The components are the building blocks that can be redesigned to improve the quality of health care as well as manage the long-term health problems. The ICCC framework consists of three components namely, the macro, meso and micro levels (Zheng et al., 2012). The macro standard of the ICCC framework provides the policies that determine the role of leadership and advocacy in the management of chronic diseases. The micro level defines the functions of the patients and their families in the process of chronic conditions care. Finally, the third component which is the meso level covers the roles of the community and the entire health system in managing the long term health problems (Nuño, Coleman, Bengoa & Sauto, 2012).



Figure 1.  Innovative Care for Chronic Conditions framework. (WHO, 2015)

**CRITICAL ANALYSIS OF THE ICCC FRAMEWORK**

The innovative care for chronic conditions framework recognizes the increase in the number of chronic diseases the burden that the bugs are putting on the health care systems. The framework then suggests a collaborative approach in dealing with the conditions and advocates for the contributions of every stakeholder in the health care system ranging from the patient, the family, the community and the government (Shah, Shamoon, Bikkina & Kohl, 2017). Every decision-maker whose influence can improve the quality of care for the conditions is encouraged to contribute in the management of the rising burden. The framework highlights that more biomedical and behavioral management practices should be done to help in controlling chronic conditions such as diabetes, HIV, and cancer (Valentine et al., 2012).

Legitimate frameworks refer to the use of the particular source of information to measure the performance of a system. The legitimate frameworks create health policies that provide the right guidance for the management of the chronic diseases which include the screening, prevention and treatment of the diseases. The frameworks also deals with the management of the risk behaviors associated with the chronic conditions such as smoking, alcohol and physical activity.

In summary, the innovative care for chronic disease framework suggests a paradigm shift, management of the external environment, building an integrated health care system, align departmental policies for health, promote value-based care and emphasize on the prevention (Verma & Hussain, 2017). From the above suggestions, the framework covers the roles of the health care systems, the government, and the community in improving the quality of care of chronic diseases.

In most countries, the type of health care provided to the patients does not meet the needs of the patients especially those suffering from chronic conditions. The health care providers and the decision makers must realize that chronic diseases require an extended care that starts from the hospital wards to the homes of the patients and runs throughout his daily activities (Wild & Byrne, 2006). The ICCC suggests that health care providers should design care systems that keep contact with the patients and monitors them throughout their recovery period. Innovation can help the health care systems to maximize their returns by shifting their services to include comprehensive care for the chronic conditions (Wild & Byrne, 2006). The macro component of ICCC framework touches on the roles of the political leaders, health care leaders and all the decision makers in forming policies that can help in improving the health care system. Having a successful transformation towards care for chronic conditions requires bi-directional information sharing to engage all the stakeholders and the political class to stand by the policies.

According to World Health Organization (2015), building an integrated health care system is also another innovative way of improving the quality of care for the chronic conditions. Chronic diseases require follow-ups, hence an integrated health care system would ensure that information is shared among the providers and that the patient receives the best quality of care. The overall benefits of integrated health care systems are fewer wastes, less inefficiency and improved patient experiences.

However, despite the numerous benefits of the ICCC framework, some limitations have also been noted which include the increased resources and time required to implement the framework. The implementation of the framework may therefore, affect the progress or the efficiency of the delivery of care for the chronic conditions.

Despite having important recommendations on how to improve the care for chronic diseases, the ICCC framework still faces various challenges regarding how it can be implemented (Zwar et al., 2017). Some countries have implemented some of the components of the framework while other countries are still far from implementing it due to various reasons. Some countries have not successfully applied the provisions of the framework due to lack of enough money, some due to political instability while others due to inadequate health care systems (Dietz et al., 2015). Many questions have also been raised on the sustainability of the framework due to the exponential rise in the number of people developing chronic diseases across the world. As many countries and health care system are yet to start the implementation of the ICCC framework, the number of patients suffering from chronic diseases is still expected to increase, and the burden of diabetes in Australia would continue to increase.

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