Executive Summary/ Abstract

This report discussed the prevalence of cardiovascular disease in the South east region of South Australia. It aims to determine the different determinants of health and identify the incidence of these health determinants in Australia, specifically in South east Region of South Australia. This report also outlines the basic community profile of the region as well as the different factors that can affect the whole residents in acquiring cardiovascular disease. The SE region of South Australia has a lot of health determinants that affects individuals to have a cardiovascular condition. These include the high proportion of aged population, existence of health-related behaviours such as smoking, physical inactivity, poor nutrition and alcohol misuse. The presence of air pollution in the region particularly in Mount Gambier has pointed out to contribute the residents in having CVD.

Moreover, this report identifies the different interventions in reducing the occurrence of CVD. These are the upstream, midstream and downstream interventions. The upstream intervention discusses the actions and implementations made by the Australian government to improve health of the people and preventing diseases. The government has five approaches in lowering the risk factors of CVD which is in line with World Health Organisation Program. The midstream intervention pointed out the actions made by the community in the SE Region of South Australia such as the different strategies and programs of the hospital and the community for the residents of that region. Lastly, the downstream interventions are actions that focus on the health needs of each person. The impact to the health professionals now and in the future and some recommendations for the prevalence of cardiovascular disease in the region is also included in this report.

Glossary

CVD	Cardiovascular Disease
SE	South East
WHO	World Health Organisation
SERCHS	South East Region Community Health Services
RFDS	Royal Flying Doctors Services
GP	General Practitioner
AIHW	Australian Institute for Health and Welfare
DFEEST	Department of Further Education, Employment, Science and Technology
ABS	Australian Bureau of Statistics

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Introduction

Cardiovascular diseases “are group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease and deep vein thrombosis” (World Health Organisation [WHO], 2011). CVD is one of the prevalent diseases in Australia. In fact, CVD is one of the major burdens of disease and injury in Australia (Australian Institute for Health and Welfare [AIHW], 2011). The Australian government spent huge amount of money for this disease alone which makes it the most expensive disease (AIHW, 2011). CVD accounted the highest reason for the Australians’ admission in the hospital in 2008 and responsible for the highest number of deaths among the disease group (AIHW, 2011). In South Australia, 318,135 individuals have circulatory system disease in which 12,701 Australians came from the SE region of South Australia during 2007 to 2008 (Public Health Information Development Unit [PHIDU], 2010) (see appendix 4). This report aims to talk about the prevalence of cardiovascular disease and its health determinants among the population of the SE region of South Australia, appropriate interventions to address the occurrence of the disease as well as the impact of this condition towards the whole community today and in the future. In this report, there are discussions relating the importance of the health professionals especially nurses in dealing the existence of circulatory system diseases.

1. SOUTH EAST REGION OF SOUTH AUSTRALIA

The South east region of South Australia also known as Limestone coast comprises of eight (8) local government areas and divided into two parts, the upper and the lower south east region (Bunker and Walters, 2006). The upper SE consists of Kingston, Naracoorte and Lucindale, Robe and Tatiara whilst lower SE includes Grant, Mount Gambier, Wattle Range

East and Wattle Range West (Bunker and Walters, 2006). The region has 21 376 square kilometres which occupies the 2.2% of the total land area of South Australia (Mount Gambier and Districts Health Advisory Council Inc., 2010). Mount Gambier is the regional centre of the SE region of South Australia. It is located 440 kilometres from Melbourne and 445 kilometres from Adelaide (Mount Gambier and Districts Health Advisory Council Inc., 2010). The regional hospital in the SE of South Australia is situated in Mount Gambier which is the Mount Gambier and Districts Health Service (Mount Gambier Health Advisory Council, Mount Gambier and Districts Health Service, Country Health SA Hospital Inc., 2010).

1.1 POPULATION

The region has 65,978 residents as of 2009 with more males than females (ABS, 2010). There are 33, 487 male individuals whilst 32,491 are females (ABS, 2010). It has been noted that there is significant increase in the population of the SE region of South Australia (ABS, 2010) (see appendix 2). Most of the people in the region live in the lower part of the south east, specifically in Mount Gambier (Natural Heritage Trust, 2003) (see appendix 1). The region has the highest proportion of individuals aged 15 to 34, lowest proportion of people aged 45 to 54, and highest elderly population aged 65 years old and above (PHIDU, 2010).

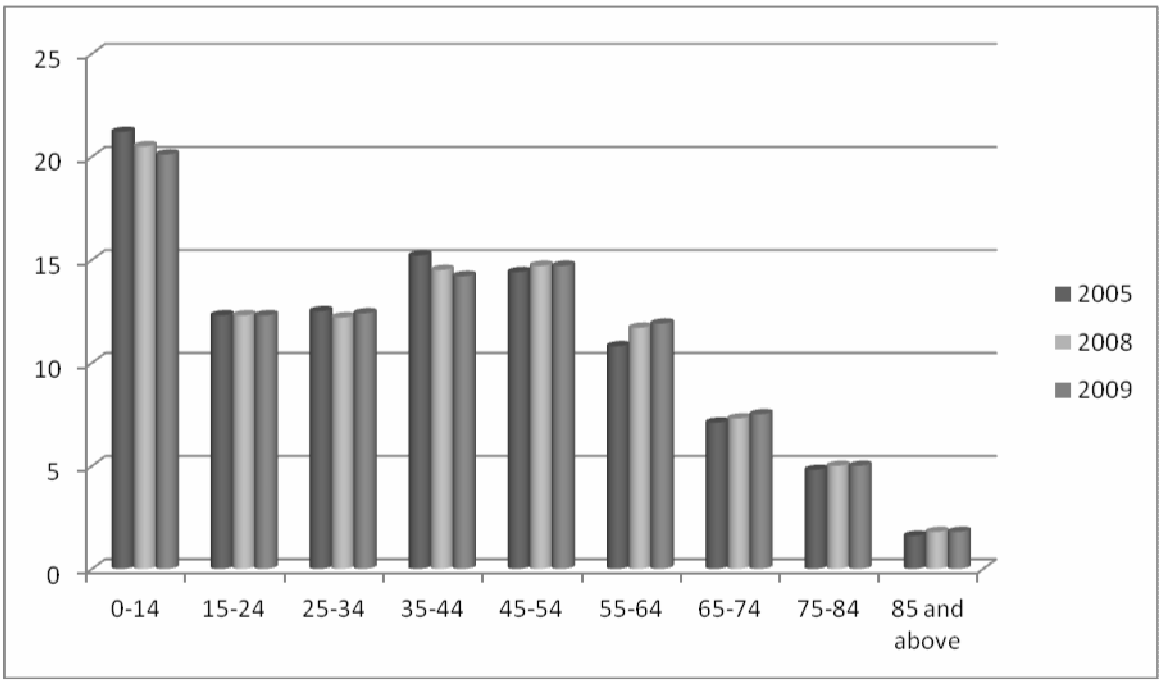

Figure 1.1 This graph shows the distribution of the population in SE region according to age. *(ABS, 2010)*

2. HEALTH DETERMINANTS

There are many ways on how to be physically fit. It includes exercise, eating nutritious food and a healthy lifestyle habit. However, the occurrence of disease among the people is still dominant due to the presence of risk factors. There are many factors that contribute to the health and wellbeing among individuals (WHO, 2011). These are called the determinants of health. It is the multifaceted interaction among biological, social, environmental factors that affect the health of the person and the community (WHO 2011). The environment, biological and socioeconomic factors may have contributed in the emergence of the disease in the region (Australian Institute of Health and Welfare [AIHW], 2010) Through these health determinants, the incidence of certain diseases will be measured and understand to come up with an intervention to promote health and prevent diseases.

2.1 SOCIOECONOMIC DETERMINANTS

The socioeconomic factor of an individual hugely contributes to the health and wellbeing (AIHW, 2010). The socioeconomic factors that affect one's health include education, income, family, employment, housing, and health behaviours (Woodgate and Leach, 2010). According to Chittleborough, Caudle, Baldock, Taylor, Phillips (2007), individuals with higher level of education, food security and higher income are linked to reduced prevalence of circulatory system conditions, as well as lowered incidence of engaging in behaviours such as smoking, sedentary lifestyle and excessive alcohol consumption. A person who is jobless, incapable to work and retired is linked to having a high incidence of acquiring circulatory system diseases as well as all the bad health behaviours (Chittleborough et al., 2007).

The SE region of South Australia has a moderate level of remoteness and degree of socioeconomic disadvantage among the south Australian regions (Mount Gambier Health Advisory Council, Mount Gambier and Districts Health Service, Country Health SA Hospital Inc., 2010). The estimated unemployment rate in the region is 4.4% wherein the highest proportion of unemployed persons come from the city of Mount Gambier whilst 2.0% only in Tatiara (Department of Further Education, Employment, Science and Technology [DFEEST], 2010). Most of the people living in this region are working as Managers & Administrators such as Farm Managers (DFEEST, 2010) (see appendix 3). The rank of education in this region is lower than the average of the State (DFEEST, 2010). Many residents holds only a Certificate level qualifications and 32.5% of the residents only completed year 12 or equivalent in aged 15 to 64 years (DFEEST, 2010). The economy of the South east region is secure because of high labour force and low unemployment rate (DFEEST, 2010).

South east region of South Australia poses increased levels of risk factors for physical inactivity, obese for females, hypertension, high cholesterol with relatively high incidence of smoking, excessive alcohol consumption, overweight and insufficient intake of fruits and vegetables among the ages 18 years and above (PHIDU, 2010). Smoking, overweight and obese is higher in the male population in this region (PHIDU, 2010). These risk factors may lead to any cardiovascular disease to the health of each person.

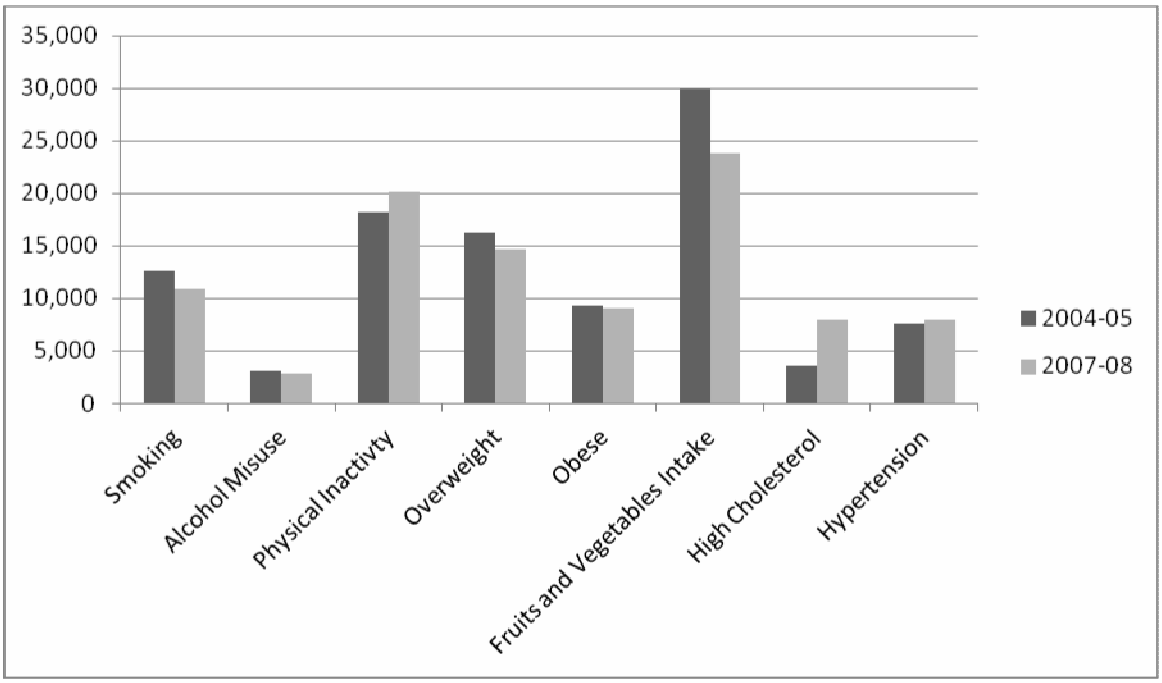

Figure 2.1.1 The graph shows the comparison of the year 2004 to 2005 and 2007 to 2008 on the prevalence of the risk factors of CVD among the residents in SE Region. *(PHIDU, 2008 and PHIDU, 2010)*

2.2 ENVIRONMENTAL DETERMINANTS

Environment refers to the place a person lives and the surroundings (AIHW, 2010). The environmental factors that may affect a person's health are the basic human needs, quality of food, water and air, the possible threats of global warming and climate change, as well as the built environment (AIHW, 2010). The kind of environment that a person lives in can have an

impact towards health. The built environment pertains to the characteristics of one's living surrounding which is usually changed and constructed by humans (AIHW, 2010). These are the schools, workplaces, homes, mode of transportations and leisure places (AIHW, 2010). Mostly, people living in urbanised places, such as cities and towns, have their health affected. Man-made surroundings may have positive and negative influences to every individual (AIHW, 2010). The physical activity, social relationship among the community would somehow change the lifestyle of humans (AIHW, 2010). For instance, most people in urbanised places prefer to walk or ride bicycles toward their destinations because bicycle lanes and footpaths are present (AIHW, 2010). Thus, individuals living in this area are physically active which reduces their risk of acquiring diseases particularly cardiovascular disease.

Moreover, the emergence of air pollution may also affect health. The presence of greenhouse effect due to the existence of gases has a bad impact to one's health (AIHW, 2010). Similarly, the polluted air that is present nowadays may influence one's health condition, especially the cardiovascular and respiratory systems (AIHW, 2010). The presence of particulates, ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide would exacerbate respiratory and cardiovascular diseases (Anderson et al. 2004; BTRE 2005; DEH 2005; Katsouyanni 2003 as cited in AIHW, 2010).

The most commonly reported substances in the atmosphere of the South east region of South Australia specifically in Mount Gambier in the year 2009 to 2010 are carbon monoxide, oxides of nitrogen, and sulphur dioxide (National Pollutant Inventory, 2010). Carbon

monoxide and sulphur dioxide are known substances that exacerbate any cardiovascular condition (AIHW, 2010).

2.3 BIOLOGICAL DETERMINANTS

Age, sex, and genetics are biological factors that also affect the health of each person (AIHW, 2010). The occurrence of health related lifestyle behaviour is linked with the biological determinants of health. In the SE region, many male individuals from the age 18 years old and above are smoking which accounted to 6,039 persons while 4,877 females smoke (PHIDU, 2010). Also, in the year 2007 to 2008, many men age 18 years old and over are noted to be overweight and obese compared to the female individuals (PHIDU, 2010). It was also noted that many females in this region (5%) are unemployed than men (4.8%) in the year 2006 (DFEEST, 2010).

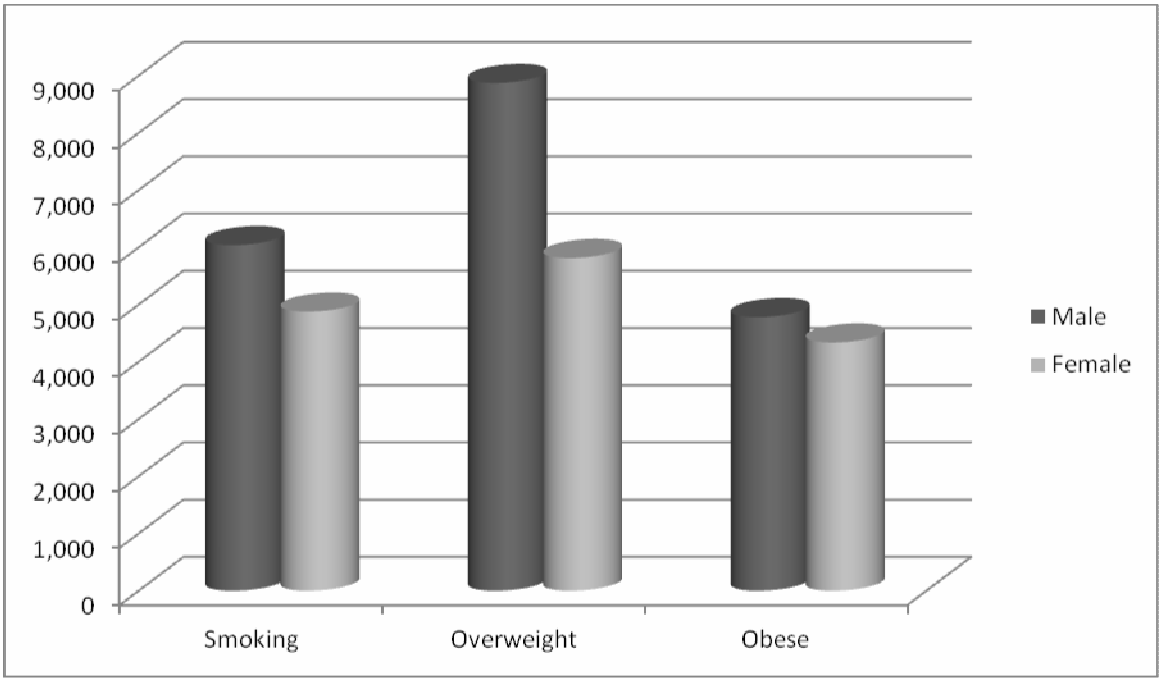

Figure 2.3.1 This graph shows the prevalence of risk factors according to gender in the year 2007 to 2008. *(PHIDU, 2010)*

3. INTERVENTIONS

Cardiovascular disease is difficult to manage because of many factors that affect it. The need for easy accessibility of health care services is very important. However, there are interventions that have been introduced to lower the incidence of such disease.

3.1. UPSTREAM

The Australian government has been very focused in lessening the occurrence of CVD among Australians (Australian Institute of Health and Welfare [AIHW], 2009). Laws, tax, numerous health services, policies and strategies have been conducted for the health and wellbeing of the individuals (AIHW, 2009). Through lessening the risk factors among the population, huge positive health outcomes will be achieved and lower mortality (WHO 2005 as cited in AIHW, 2009). There are five strategies in reducing the risk factors of CVD among the whole Australia which is use by the World Health Organisation (AIHW, 2009). It includes Laws and regulations, improving the built environment, community-based interventions, tax and price interventions and public awareness campaigns (AIHW, 2009.

3.1.1 Laws and regulations

The National Obesity Taskforce was made by Australian Health Ministers in 2003 to focus on the overweight and obesity, poor nutrition and sedentary lifestyle among Australians (AIHW, 2009). The government developed standards to regulate foods in the form of food labelling (AIHW, 2009). People will be able to know the contents or ingredients of a food which would give them excellent choices. The revised Food Standards Code 1.2.8 Nutrition Information Requirements in 2000 stated that food manufacturers require putting the amount of saturated and total fat content on the food. (FSANZ 2002 as cited in AIHW, 2009). The

national Tobacco Strategy amended laws to stop smoking which includes lowering the presence of tobacco products, and eradicating tobacco promotion and advertising (AIHW, 2009). The use of any forms of media in promoting tobacco was also stopped because of the Tobacco Advertising Prohibition Act 1992. Also, liquor licensing was developed to limit the trade hours, market locations, as well as the sellers (AIHW, 2009).

3.1.2 Tax and price interventions

The most efficient tool in decreasing individuals drinking alcohol and smoking (Lewit et al. 1997; World Bank 1999) is to increase the taxes on tobacco and alcohol)(AIHW, 2009). The Australian government put many high taxes for tobacco products and alcohol to lower the usage of tobacco and alcohol, which raised the revenue of the government (AIHW, 2009). These taxes are excise duty, customs duty, GST and Wine equalisation tax (WET) for the alcohol. (VicHealth Centre for Tobacco Control 2008) as cited in AIHW, 2009).

3.1.3 Improving the built environment

Urban planning was emphasised by the government because through built environments, it could influence the nutritional behaviour and physical activities among individuals (AIHW, 2010). This would help prevent the high occurrences of obesity and overweight among the Australian population. In terms of smoking, the government implemented a ban in smoking to public places such as in public transport, cinemas, plane flights and airports because of the huge concerns for those second-hand smokers (AIHW, 2009). The government put smoking in some public places under the jurisdiction of the states and territories (AIHW, 2009).

3.1.4 Public awareness campaigns

Public awareness campaigns are very useful in lowering the incidence of CVD (AIHW, 2009). In this way, people will be informed and influenced to improve health. This campaign may use any form of media such as television, print and radio. It is cost effective (Keleher & Murphy 2004 as cited in AIHW, 2009), such as the anti-smoking mass media advertising and plays a huge role in lowering the incidence of smoking (Wakefield et al. 2008 as cited in AIHW, 2009).

3.1.5 Community-based interventions

Community-based interventions are also effective in educating and promoting health to the people (AIHW, 2009). Educational approach promotes healthy lifestyle choices and influence individuals about healthy living (AIHW, 2009). This can be done in workplaces, schools and community in inculcating health promotion (AIHW, 2009).

3.1.6 Royal Flying Doctor Service

The Royal Flying Doctor Service (RFDS) gives primary health care to the individuals living in remote sites wherein they cannot access any health services (AIHW, 2010). RFDS uses aircraft and other modes of transportation as well as high technology communications to reach those remote areas that needs them to enhance their health and wellbeing. (AIHW, 2010)

3.2 MIDSTREAM

The SE region is doing the necessary actions to promote and maintain health and prevent diseases (Bunker and Walter, 2006). The SE region has medical facilities to help the health

needs of the residents especially with cardiovascular conditions (Bunker and Walter, 2006). The region has six government funded hospitals and one Emergency Community Health Centre to cater to patients with cardiac problems (Bunker and Walter, 2006). The SE region has Cardiologists who thoroughly assess patients with heart-related problems, as well as a Cardiac Rehabilitation Program which is located at Mount Gambier Hospital (Bunker and Walter, 2006). The South East Regional Community Health Service (SERCHS) was created to give health services across the SE region (Bunker and Walter, 2010). The SERCHS provides numerous programs for the welfare of the residents in the region. Community Nursing Program home-based visits and nursing clinics, and health promotion screening and prevention programs are some of the programs they offer for the people (Bunker and Walter, 2006).

3.3. DOWNSTREAM

The Australian government created the Medicare in meeting the health needs of the people through the prevention of risk factors linked with CVD (AIHW, 2009). This Medicare will help the Australians have their health checked by their General Practitioner for free (AIHW, 2009). The Medicare 45-year-old health check allows individuals ages 45 to 40 years old to have their health assessed by their GP from any risk factors associated with CVD (AIHW, 2009). The comprehensive Medical Assessment for Aged care residents was developed to assess the cardiovascular risk factors and nutritional status among the old (AIHW, 2009). Lastly, the older person's health assessment was introduced for people aged 75 years and over to assist them in their comprehensive health assessment such as their nutritional status and blood pressure (AIHW, 2009). The utilization of cardiovascular medicines for patients with cardiovascular condition, which are prescribed by GPs, and any other medical

treatments are in line in maintaining good health. Acquiring healthy lifestyle habits such as healthy diet and regular exercise are still emphasised by health sectors and the community through public awareness campaigns (AIHW, 2009).

4. IMPACT ON HEALTH PROFESSIONALS

The determination of these health determinants will have a huge impact on the health professionals especially the health sector in this region. Somehow, this would serve as their measurement and monitoring on how far the prevalence of the CVD in the region. Also, they can also consider the factors that they need to focus on, especially the increasing incidence of certain factors that would most likely put the residents at risk. These health determinants would also help the health professionals to develop an appropriate approach, interventions, and health services that would benefit the whole community. In the future, the establishment of these determinants would give the health professionals a guideline towards meeting the health needs of the individuals as well as improving the strategies and interventions made in lowering the incidence of CVD. Through this, health professionals can enhance their approach in dealing cardiovascular diseases.

5. CONCLUSION

The health determinants are greatly influenced in the occurrence of any diseases. The determinants of health of the incidence of CVD are still prevalent in the SE Region of South Australia. Though there was a significant decrease among individuals acquiring those risk factors in their health, still, it is also worth noting that it hugely affects the whole population of the region. Appropriate interventions have been implemented and taken into action by the government. However, numerous individuals still develop those health issues, especially with

the individual's health behaviour. The programs and strategies were very helpful in minimising the incidence of CVD but, as applicable to all programs, the health care service delivery in the region, it still needs improvement as well as the workforce in the SE region. In terms of the socioeconomic factor, it was mentioned that the region posed a secure economic terms as well as low unemployment rate. However, the local government must also take many concrete actions to maintain the stability of the economy of the region especially its employment situation. Health promotion and disease prevention are still the most important intervention that must be emphasised by the community and the government.

6. RECOMMENDATIONS

1. A most effective public awareness campaign with the importance of educating the people about the ways in preventing the risk factors of CVD must be established by local government as well as the community health officer of each region.

2. This public awareness campaign must have a partnership with the general practitioners in delivering health services in the community and undergo an assessment and management regarding the risk factor of CVD among the residents (Bunker and Walter, 2006).

3. It is a good idea to have lifestyle advisors and support officers, partnerships with the general practitioners, as well as healthy weight coordinators to help the health and wellbeing of the people. (South Australia's Country Health Care Plan, 2008).

4. A new approach in delivering health services in the south east region must be implemented. The health services must get closer to the whole population wherein it focuses in providing health care across the region with the emphasis of the community efforts (Bunker and Walter, 2006).

5. The health services for the CVD in the region must be improved. The acute cardiac care services in the region must be enhanced by putting enough workforce particularly physicians to attend the needs of the outpatient individuals.

6. The cardiac rehabilitation service in the region must be improved by offering different methods in addressing the cardiac needs of the resident such as home-based cardiac rehabilitation service by using the workforce of the community health nurse in a certain location (Bunker and Walter, 2006).

7. All hospitals in the region must be enhanced and provide more range of services for the health and well being of the residents particularly in the community hospitals in Naracoorte and Millicent and the general hospital in Mount Gambier in partnership with SERCHS to offer easy access on primary health care services (South Australia's Country health care plan, 2008).

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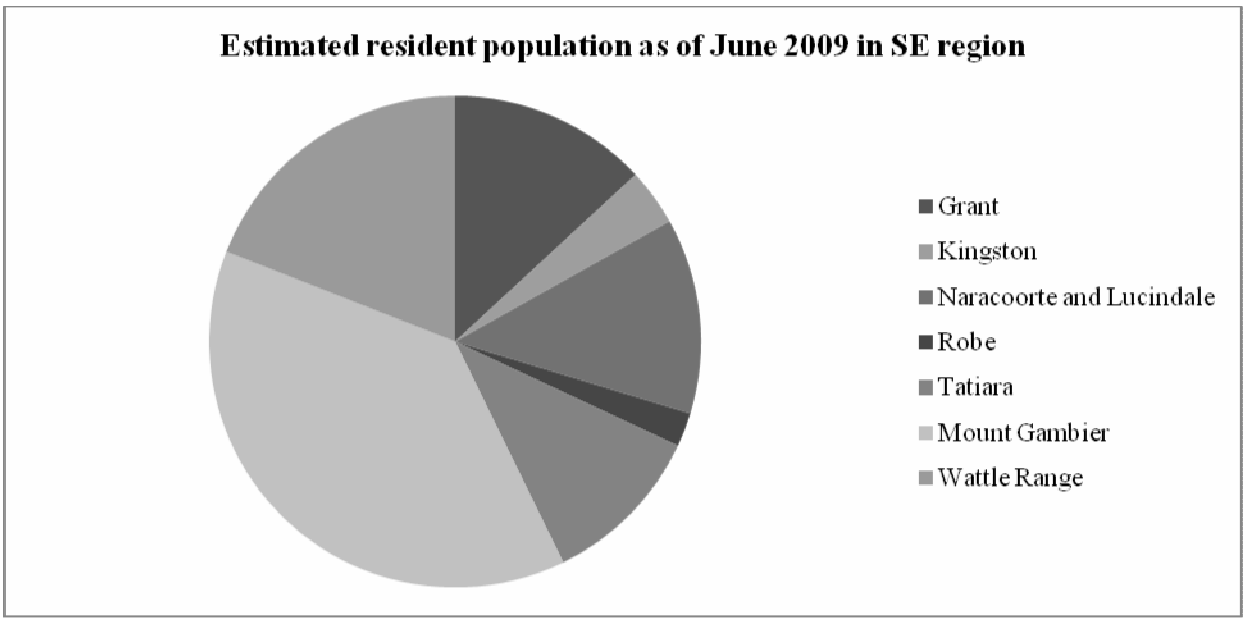
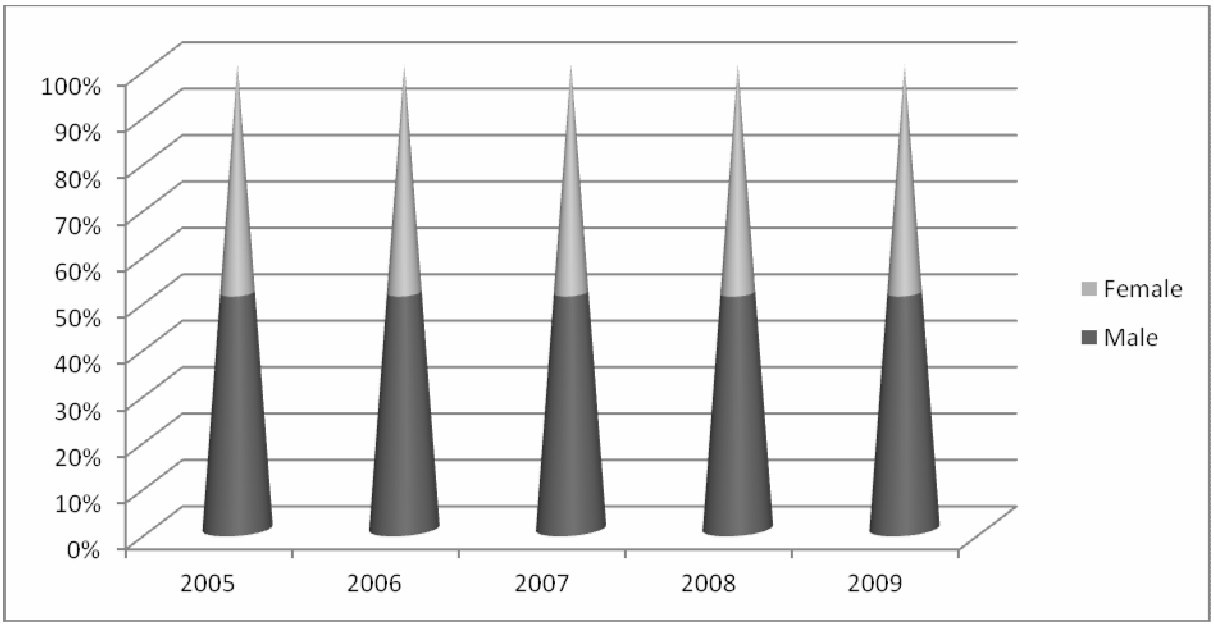
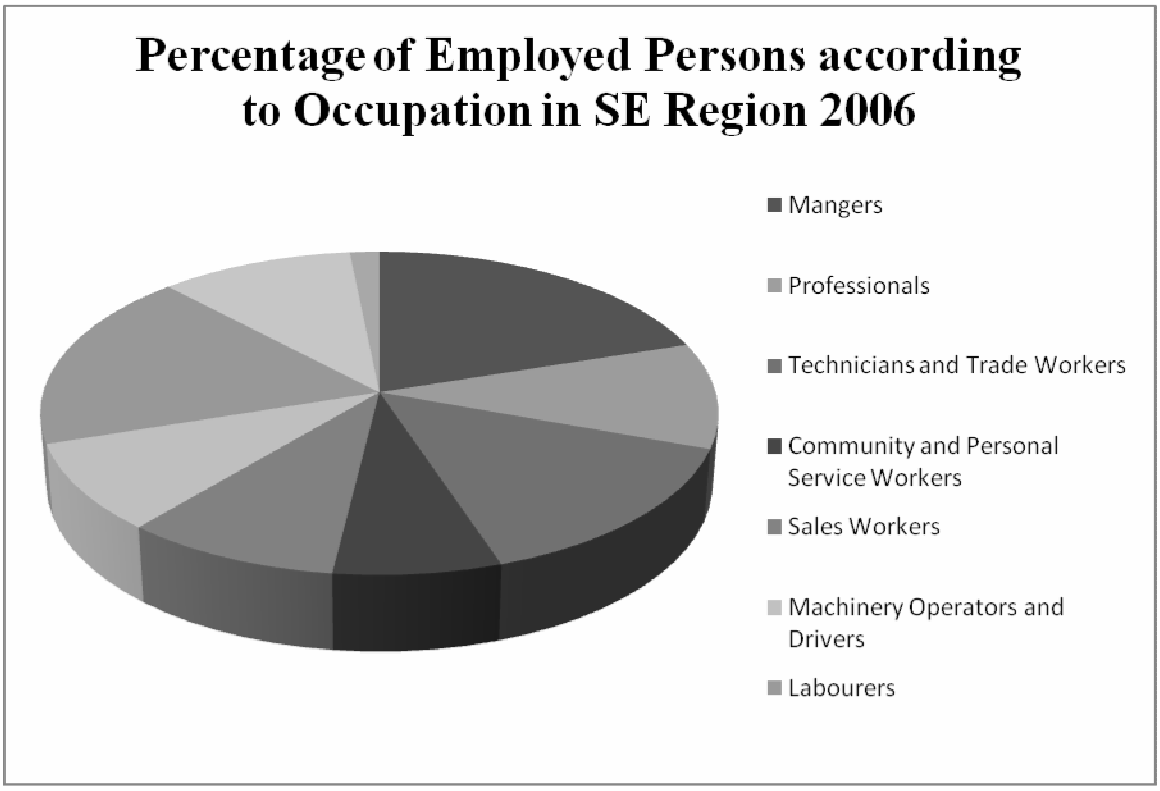
Appendix



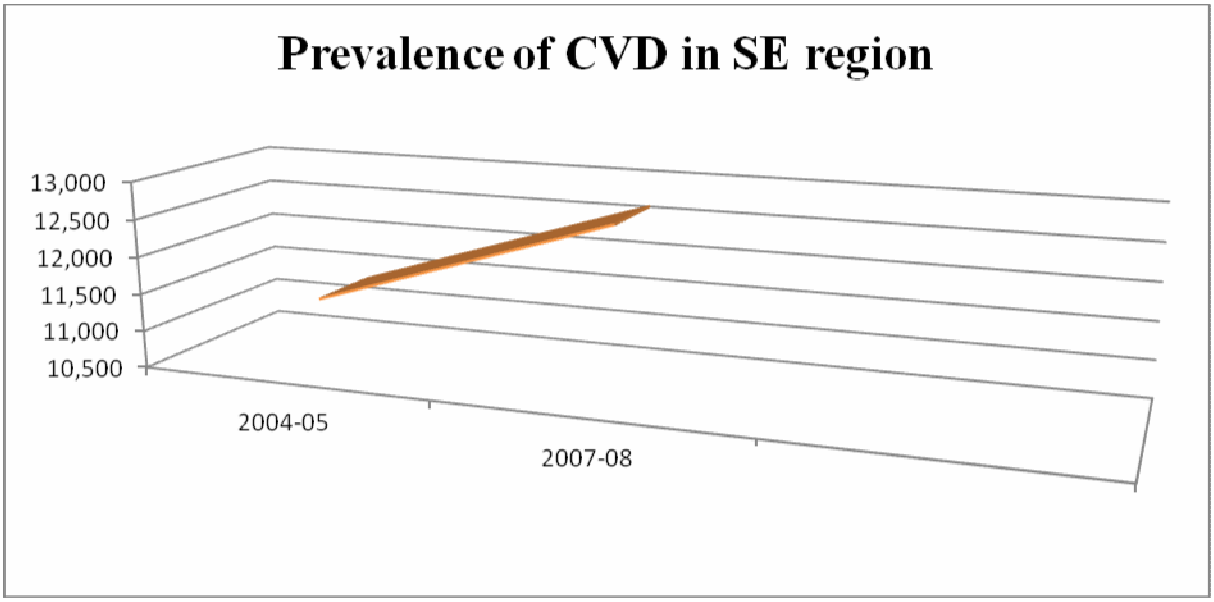
Appendix 1. This graph shows the distribution of resident population in all areas in SE region as of June 2009. *(DFEEST, 2010)*



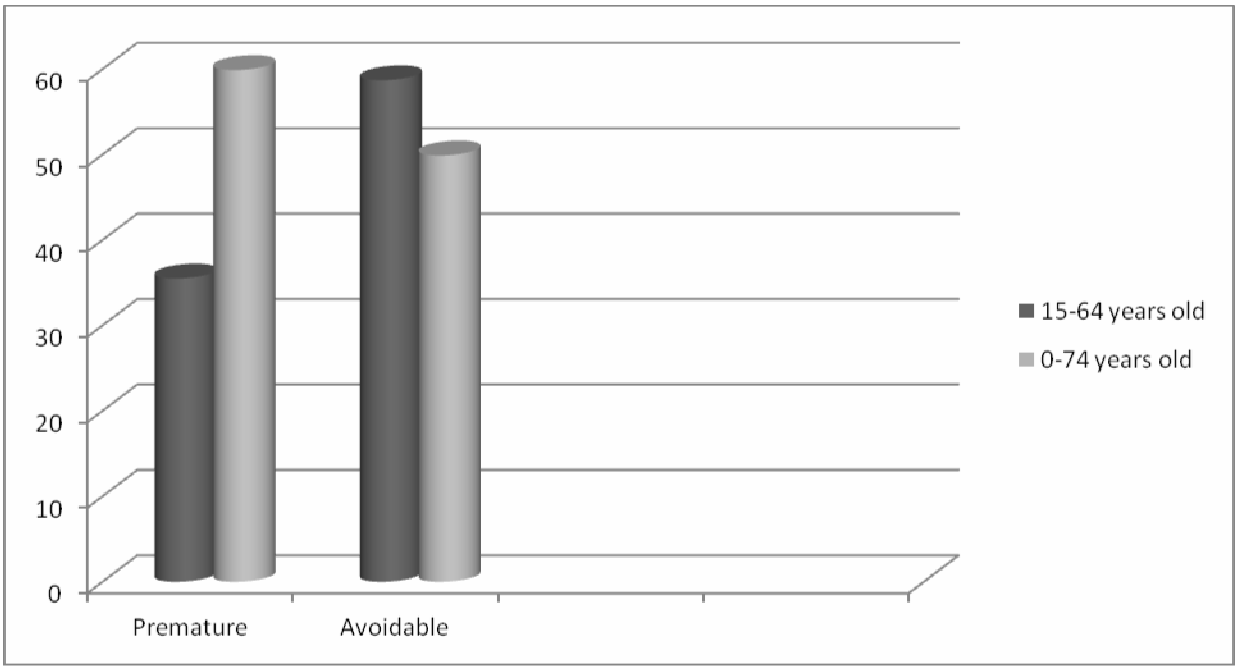
Appendix 2. This graph shows the population of SE region according to gender from the year 2005 to 2009 in percentage *(Australian Bureau of Statistics [ABS], 2010)*



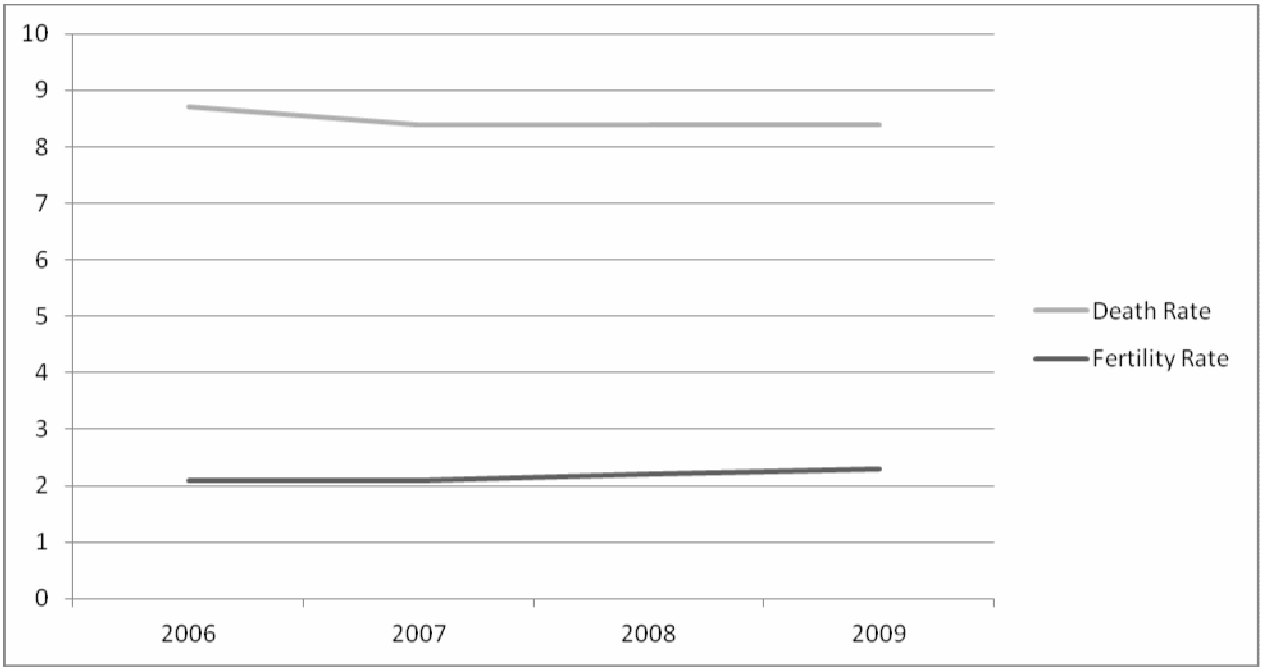
Appendix 3. This graph illustrates the number of employed persons in SE region according to their occupation in 2006. *(ABS, 2010)*



Appendix 4. This graph shows the prevalence of CVD in the SE region from 2004 to 2008. *(PHIDU, 2008 and PHIDU, 2010)*



Appendix 5. This graph illustrates the premature and avoidable mortality rate in SE region according to age in the year 2007 to 2008. *(PHIDU, 2010)*



Appendix 6. This graph demonstrates the death and fertility rate in the SE region from 2006 to 2009. *(ABS, 2010)*

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