

# [Cardiovascular disease rates in australia](https://assignbuster.com/cardiovascular-disease-rates-in-australia/)

Background

Cardiovascular disease (CVD) is one of the main causes of disability and premature mortality worldwide (Lopez et al., 2006) and it significantly affects the costs of healthcare. CVD has been reported to be a leading cause of mortality in Australia with around 29% of deaths attributable to CVD in 2015 (ABS, 2016). In 2008-09, CVD represented 12% of the total health expenditure in Australia and rates of hospital-related patient services for CVD have increased between 2001-08 and is continuing to increase (AIHW, 2014). CVD encompasses a range of conditions including coronary artery disease (includes myocardial infarction), stroke, hypertension or congestive heart failure. In 2014-15, it was estimated that approximately 1 in 5 Australian adults aged 18 and older have been burdened by 1 or more cardiovascular diseases (AIHW, 2018).

There are a number of modifiable health risk factors that contribute to an increased risk of CVD such as hypertension, diabetes, tobacco smoking, high blood lipid and cholesterol profile, obesity, physical inactivity and chronic alcohol consumption (Smith, 2007). Many of these risk factors are inter-related; for instance, obesity and diabetes are connected as one condition can lead to the other. Moreover, physical inactivity and obesity are linked as one does lead to the other and vice versa. Obesity can also lead to a high blood lipid and low-density lipoprotein (LDL) cholesterol profile, but this could also be due to genetic factors with inborn errors in the metabolism of lipids and cholesterol. This is notable in a condition known as familial hypercholesterolaemia where individuals may lack genetic factors involved cholesterol uptake into cells, leading to elevated levels in the blood, and hence atherosclerotic plaque formation, i. e. coronary artery disease (Varghese, 2014).  On top of these, risk factors such as increasing age, family history and ethnicity increase the rate of CVD (Buttar et al., 2005). However, this list comprises risk factors that are non-modifiable. Around the world, it has been found that male gender is a non-modifiable risk factor, however, Australian statistics show that the prevalence of CVD was measured as similar between male and female adults aged 18-54. However, according to graphical data of the National Health Survey, the prevalence is observed to be greater in Australian male adults aged 55-75+, which also supports that age is a cardiovascular risk factor and this is due to physiological changes that occur to arteries over time as well as issues in metabolic processes (AIHW, 2018; Tuomilehto, 2004).

In terms of the modifiable risk factors, it was found that, in 2014-15, 14. 5% of Australian adults smoked daily, and this prevalence increased in regional and remote areas of Australia and was also higher in areas containing populations of low socioeconomic status (SES) (National Cancer Control Indicators, 2017). As for diabetes, its prevalence has tripled between 1989-90 and 2014-15 to 4. 7% and trends have been increasing and are expected to increase over time. The prevalence of diabetes was found to be similar by geographical location but doubled in low socioeconomic groups (AIHW, 2018). Furthermore, the Australian Bureau of Statistics reported that in 2011-12, approximately one-third of Australian adults ages 18 and older had high total cholesterol. This distribution between male and female gender was similar, however, a higher prevalence was found in Australian residents located in regional and remote areas (ABS, 2012). It has been reported that physical inactivity accounts for more than 1 in 10 (12. 2%) of the burden of myocardial infarctions worldwide and interestingly, the prevalence of physical inactivity was greater than smoking (35% and 26% respectively) worldwide (Yusuf et al., 2004; Wen et al., 2014).

It is therefore evident that CVD has a highly deleterious effect on the health of Australian adults and the increasing prevalence of modifiable cardiovascular risk factors is alarming and should be addressed in order to reduce the CVD burden. It is therefore necessary to focus on a number of social determinants that contribute to the increasing prevalence of these risk factors, i. e. to understand the role and relationship of upstream ‘ causes of causes’ that promote CVD. These may include social determinants such as low SES which entails low income, unemployment and poor education. Investigating these will address the health disparities seen between different demographics of Australians where there are varying degrees of CVD prevalence based on SES and geographical location as discussed above. This essay will focus on unemployment and education as key social determinants that pertain to CVD.

The social determinants relevant to CVD

Unemployment

People who are living in low socioeconomic areas have many disadvantages such as low income, poor education, low employment rates and poor housing characteristics (ABS, 2016). Although there are some preventive interventions and treatments towards reducing the risk of CVD, such as behavioural risk factors, early detection and multiple treatment options for people who are already exposed to the disease; people in low socioeconomic areas are impacted differently as they do not always have access to these options particularly with regards to limited healthcare access as people in higher socioeconomic areas (Martinez-Garcia et al., 2018). This may be attributed to the cost of healthcare, particularly private health, where low income earners or the unemployed are disadvantaged due to the inability to access these services. As a result, public healthcare systems become flooded and hence patients often will not receive optimal treatment for their condition. It was found that in 2014-15, 20% of Australians that lived in an area of low SES were 1. 6 times as likely to have at least two chronic health conditions such as CVD and diabetes, compared to the demographic of people with an SES representing the highest 20% (ABS, 2015). Furthermore, in 2009-11, it was reported that Australian adults residing in areas of the lowest SES have a life expectancy that is approximately 3 years less than those in the highest areas (NHPA, 2013). As outlined above, with CVD being the leading cause of mortality worldwide and having represented nearly a third of deaths in 2015 in Australia, it can be deduced that higher rates of CVD may be a significant contributing factor to the lower life expectancy in these areas. Unemployment rates have decreased over time in Australia, yet despite this, unemployment remains a major problem in the nation (ABS, 2018). Mathers and Schofield (1998) have discussed that people who are unemployed are at a higher risk of death and being ill or disabled than those who are similar age and employed. The stress that comes with being unemployed has a large impact on a person’s physical and mental health and wellbeing (Dooley et al., 1996). Unemployment may be a result of a physical or mental illness, however, for many, it may also be the reason they have health issues. Unemployment can cause several health problems through its psychological consequences and financial issues.

In general, people with no or few qualifications or skills, who have disabilities or poor mental health, who are caregivers, who are in ethnic minority groups or, people who are excluded from groups for different reasons, are at a higher risk of being unemployed (AIHW, 2015). The negative effects that come with unemployment may mostly be the due to the significant change in an individual’s lifestyle. They go from spending time at work for a long time every week to having that time free with the stress they will have from being unemployed. These may include negative changes such as altered dietary habits, increased habitual smoking, alcohol consumption or drug use. These can subsequently compound and lead to other effects such as physical inactivity, financial problems, problems in social life and relationships and depression, which are known to be the cause of serious health problems including obesity, lung conditions such as chronic bronchitis and most importantly, CVD (Weber and Lehnert, 1997).

A study done by Kasl et al. (1980) tracked the cholesterol levels of people who were expecting to be unemployed and subsequently becoming unemployed. It was found that unemployment contributed to higher cholesterol levels through fear of loss of job or unemployment. They had found that once these individuals started working again, their cholesterol levels corrected back to what was deemed a normal level. Furthermore, numerous studies have investigated the relationship between unemployment and blood pressure. While a study done by Schnall and Landsbergis (1992) did not show any significant effects of unemployment on blood pressure levels, Janlert (1992) and Hammarstrom (1994) both showed that unemployment had a negative effect on blood pressure levels, where higher unemployment rates lead to a higher prevalence of hypertension. As discussed, hypertension and a high blood LDL cholesterol are significant risk factors for CVD and as demonstrated, unemployment leads to high blood pressure and high cholesterol levels and once individuals begin working again, these measurements restore to normal levels. It is therefore clear that unemployment may lead to an adverse health profile that are known contributors to CVD, and hence it can be implied there is an inverse association between unemployment and CVD. More specifically, the physiological burden associated with unemployment increases the likelihood that an individual may develop CVD.

Education

Having no or low education may also be an important social determinant that contributes to CVD. Reasons that may explain this include not enough knowledge of the disease to take action for treatment, and similar to unemployment; physical inactivity, stress and increased tobacco smoking and substance use. There are several studies that show the relevance between education and cardiovascular disease. A study performed in Australia by Korda et al. (2017) containing 267, 153 men and women aged over 45, showed that Australians that are not educated, who leave school early or do not complete it, have over twice as much risk of having a heart attack than those with a university degree and that improved education is an important factor in reducing the socioeconomic variation in CVD. This study more specifically found that the rates of heart attacks in adults aged 45-64 years who have no education is 150% higher than people with a university degree and 70% higher than those with intermediate levels of education. Similarly, a study done in the United States looking at participants aged 38-47 years found that the risk of having cardiovascular disease was 27. 9% lower for people with a college degree than people without a college degree and it was concluded that factors in early life such as education may be important in contributing to CVD risk (Loucks et al., 2012). It is clear that studies conducted in Australia and in other countries support that individuals that have received poor education may be affected by CVD later in life.

The reason unemployment and education lead to a higher CVD rate is because, as demonstrated, many of the risk factors associated with CVD such as, hypertension, high blood LDL cholesterol, physical inactivity and smoking may come with being unemployed or having received no or minimal education. These factors may also affect the individual’s ability to act for prevention, early intervention or treatment. For example, a person who is not educated in the risks of CVD may not know that they need to take preventive actions to minimise their CVD risk, and a person who is unemployed may not be able to afford to pay for their medications such as statins (cholesterol-lowering drugs) or cardiovascular procedures such as coronary artery bypass graft surgeries. Ultimately, it is evident that unemployment and education should not be neglected in Australian adults so that the overall burden caused by CVD can be minimised, therefore leading to better health outcomes in this nation.

References

1. Australian Bureau of Statistics. (2012). Australian Health Survey. Canberra.
2. Australian Bureau of Statistics. (2016). Australian Health Survey. Canberra.
3. Australian Bureau of Statistics. (2016). Census of Population and Housing: Reflecting Australia – Stories from the Census, 2016. Canberra.
4. Australian Bureau of Statistics. (2018). Labour Force, Australia. Canberra.
5. Australian Institute of Health and Welfare. (2014). Health-care expenditure on cardiovascular diseases 2008–09. Canberra: AIHW.
6. Buttar, H. S., Li, T., Ravi, N. (2005). Prevention of cardiovascular diseases: Role of exercise, dietary interventions, obesity and smoking cessation. Experimental & Clinical Cardiology , 10, 229-249.
7. Dooley, D., Fielding, J. and Levi, L. (1996). Health and unemployment. Annual Review of Public Health, 17, 449–65.
8. Hammarstrom, A. (1994). Health consequences of youth unemployment. Public Health, 108, 403±412.
9. Janlert, U. (1992). Unemployment and blood pressure in Swedish building labourers. J Intern Med , 231, 241±246
10. Kasl, S. V. and Cobb, S. (1980). The experience of losing a job: some effects on cardiovascular functioning. Psychother Psychosom , 34, 88-109.
11. Lopez, A. D., Mathers, C. D., Ezzati, M., Jamison, D. T., Murray, C. J. L. (2006). Global Burden of Disease and Risk Factors. Washington DC: World Bank and Oxford University Press.
12. Loucks, E. B., Buka, S. L., Rogers, M. L., Liu, T., Kawachi, I., Kubzansky, L. D., Martin, L. T. and Gilman, S. E. (2012). Education and coronary heart disease risk associations may be affected by early-life common prior causes: a propensity matching analysis. Ann Epidemiol. , 22, 221-32.
13. Martinez-Garcia, M., Salinas-Ortega, M., Estrada-Arriage, I., Hernandez-Lemus, E., Garcia-Herrera, R. and Vallejo, M. (2018). A systematic approach to analyze the social determinants of cardiovascular disease. PLoS One , 13, e0190960.
14. National Cancer Control Indicators. (2017). Smoking prevalence – adults. Canberra.
15. NHPA (National Health Performance Authority). (2013). Healthy communities: avoidable deaths and life expectancies in 2009–2011. Sydney: NHPA.
16. Schnall, P. L. and Landsbergis, P. A. (1992). The impact of anticipation of job loss on psychological distress and worksite blood pressure . Am J Ind Med, 21, 417±432.
17. Smith, S. C. (2007). Multiple risk factors for cardiovascular disease and diabetes mellitus. American Journal of Medicine , 120, S3-S11.
18. The Sax Institute: The 45 and Up Study – Questionnaires [https://www. saxinstitute. org. au/our-work/45-up-study/questionnaires/] (2016). Accessed April 2016.
19. Tuomilehto, J. (2004). Impact of age on cardiovascular risk: implications for cardiovascular disease management. Artherosclero Suppl. , 5, 9-17.
20. Varghese, M. J. (2014). Familial hypercholesterolemia: A review. Ann Pediatr Cardiol. , 7, 107-117.
21. Weber, A. and Lehnert, G. (1997). Unemployment and cardiovascular disease: a causal relationship? Int Arch Occup Environ Health , 70, 153-160.
22. Wen, C. P. and Wu, X. (2012). Stressing harms of physical inactivity to promote exercise. Lancet , 380, 192–193.
23. Yusuf, S., Hawken, S., Ounpuu, S., Dans, T., Avezum, A., Lanas, F., Mc-Queen, M., Budaj, A., Pais, P., Varigos, J. and Lisheng, L. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. Lancet, 364, 937-952