



# Introduction: Population Health and Health Promotion

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Sansnee Jirojwong  
& Pranee Liamputtong

## Objectives

After reading this chapter, readers will be able to:

- Understand definitions of key terms in population health and health promotion
  - Explain the development of models of health and evaluate the application of these models in different settings and contexts
  - Relate the evolution of population health at international and national levels
  - Apply information relating to characteristics of a community and health status of its population and relevant health promotion programs.
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## Key terms

community  
culture  
health  
health education  
health promotion  
population health  
public health

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## Introduction

Over the last hundred years, there has been much improvement in the health and life expectancy of the Australian population. Leading causes of death have changed from infectious and parasitic diseases to chronic diseases. Australians now live longer, and their risk of developing cardiovascular diseases, cancer, and diabetes has increased over the years (AIHW, 2006). There have been on-going changes in the social, economic and political environment, and these have had an impact on individuals' health behaviours and their life styles. Medical and therapeutic technologies for the diagnosis and treatment of diseases have also improved significantly, while at the same time the cost of health care has increased markedly.

The symptoms of many chronic diseases take a long time to develop. However, once these diseases are diagnosed, treatments and changes in behaviour and life style are required, generally for a number of years. Health planners, health professionals, and health academics have agreed that disease prevention and health promotion are necessary to reduce the impacts of chronic diseases in the twenty-first century. Different strategies in the provision of health promotion services have to target specific individuals, groups, and society. A strong collaborative effort across different sectors, including the public health, economic, and education sectors, will be required to reduce these growing health problems. In the past three decades, the contributions of health promotion to community and public health services have been increasing. Despite this, increased evidence has also shown that there is a gap of health status between different population groups.

This chapter serves as an introduction to issues discussed in this volume. Hence, the topics we discuss in the chapter will be general in scope. The chapter is divided into three major sections. In the first section, we provide general information about health, disease, and illness. The development of models of health and how health is measured are included in this section. In the second section, we briefly describe the roles of health education and health promotion at different levels of health. The third section explains the development of public health and population health at international, national, and local levels. We outline some examples of an increasing interest in population health among practitioners, researchers, and policy makers. The relationship between population health, characteristics of communities and health promotion programs is included in this third section.

The chapter attempts to fill in the gaps in the literature on population health, health promotion, and communities. Terms used in health, public health, population health, and health promotion will be defined.

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## What is health?

Health means different things to different people. Individuals who have a physical disability may say that they are 'healthy' when they are able to function independently. Health also can be freedom from disease, feeling happy, or being satisfied with one's current situation (Kleinman, 1980; AIHW, 2000). A person's health is never static, and it can vary according to the context and environment in which the individual lives. For example, individuals who are well in the morning may experience anxiety because of work pressure in the afternoon. Many cultural groups perceive health and illness as the results of an individual's long-term relationships with family, community, and environment. A dysfunctional relationship may influence that individual's health status (Kleinman, 1980; Landrine & Klonoff, 1992).

**Health:** a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

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In 1946, the World Health Organization (WHO, 1946, 1978: 2) defined health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. The continuum of health and illness has been considered in this definition. Disease and infirmity have been used as health status measurements for more than two decades. However, the term 'well-being' is increasingly used to describe the health of populations (Jones, 2003). Well-being is a subjective sense that there is nothing wrong and can be completely independent of our objectively measured health or disease status. This definition of health has been used for more than 60 years. In the 1980s, the World Health Organization emphasised that the ability to function normally in a person's social setting should be integrated into the definition of health (Beaglehole & Bonita, 2004). An attempt to include spiritual aspects as a part of the definition of health has not eventuated (WHO, 1998).

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## Definitions of disease and illness

When individuals experience symptoms because of changes in their usual physical, mental, or social condition, they interpret these symptoms. Two terms, 'disease' and 'illness', are used to describe the sickness. Disease is a malfunctioning of biological and/or psychological processes, while illness refers to the psychosocial experience and meaning of perceived disease. Illness includes personal, social, and cultural responses to a disease. Illness contains responses to disease to provide it with a meaningful form and explanation as well as control. Disease affects single individuals, even when it attacks a population, but illness most often affects others, including family and the social network (Kleinman, 1980). In some Australian

Aboriginal and migrant cultures, the illness is believed to be constituted by the affected persons, their family or their supporters (Huff & Kline, 1999; McCalman et al., Chapter 4 this volume).

An example can be demonstrated by two women's interpretation of, and responses to, having cervical cancer in situ. Both have the same pathological change to cells. The majority of cervical cancers are caused by human papillomavirus infection (Bosch et al., 1995). However, one of the women perceives that the disease is caused by heredity, as her mother and three of her female relations also had the disease. The occurrence of the disease cannot be controlled and she projects her anger towards her mother. Another woman thinks that the disease is caused by an earlier abortion, which later caused 'damage' to her reproductive organs, including cervix. Having cervical cancer is the punishment for her killing her unborn baby. She is angry with herself and the father of the baby. Different perceptions of the 'illness' by both women may influence their behaviours in seeking help and having the disease treated. Their illness may also influence their emotions and the support they receive from family.

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## Models of health

Many models of health have been developed to explain the health status of individuals, communities, and populations. These models help provide a better understanding of the health of an individual and a population, and act as a guide as to how their health can be maintained or improved. The development of different models of health has been based on the complexity of disease and illness patterns, changes in health behaviours, increasing knowledge about an individual's health behaviours, and the growth and development of health professions. Selected frequently used health models are presented below (Baum, 2008; Germov, 2005a).

Until the early twentieth century, infectious diseases, including cholera and plague, were major causes of death in many European countries. The contagion and germ theories were used to explain the causes of these diseases. The discovery of micro-organisms, made possible with the invention of the microscope in 1683, supported the use of the biomedical model of health with its emphasis on diseases and pathology (Beaglehole & Bonita, 2004; Germov, 2005a, 2005b). The focus was on disease, which was explained as a malfunction of one of the body's biological systems.

Later, during the industrial revolution of the eighteenth century, various social and psychological factors were identified as underlying causes of disease. These biological, psychological and social factors are taken into consideration in

the development of the biopsychosocial model. Individuals or families who were exposed to an infectious agent typically also lived in a neighbourhood with poor sanitation. Many worked in an environment hazardous to health, and lived in crowded households with poor sanitation. People subject to these multiple factors were also more likely to be made sick than those who lived and worked in a better social and economic environment. A biopsychosocial model focused on disease prevention and aimed at improving the conditions of the poor and disadvantaged. Good health was seen as an absence of illness. The evidence of the use of this biopsychosocial model was in the improvement of sanitation and public health infrastructure that controlled many infectious diseases (Beaglehole & Bonita, 2004; Baum, 2008).

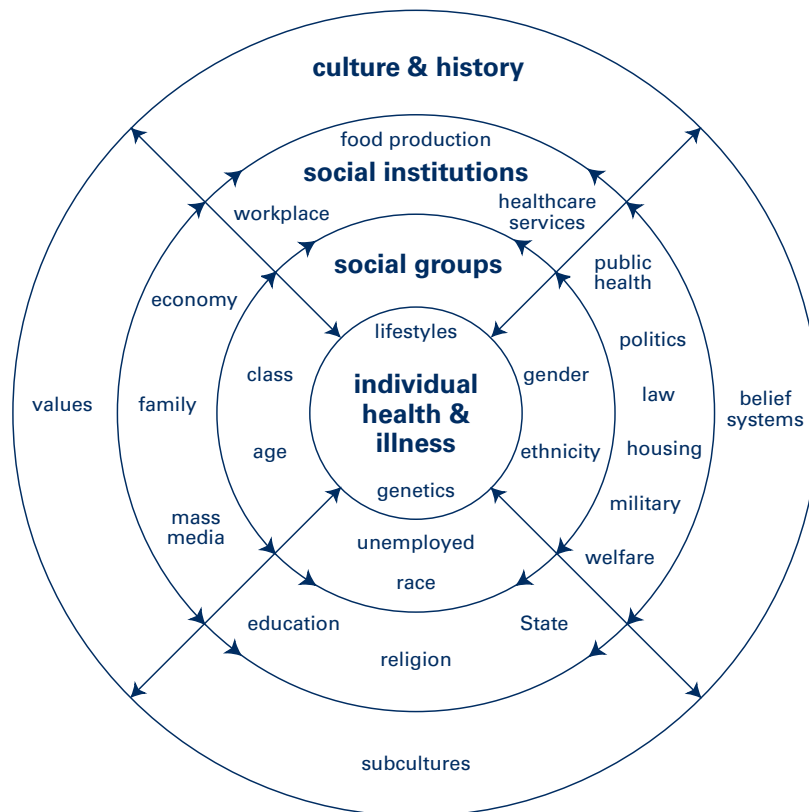
Since the early twentieth century, there have been social, economic, and political changes at the global level as well as at a national level. People have an increasing risk of developing chronic diseases, with complex relationships between various factors including their life styles. Many social models of health have been developed to explain an individual's health and the complexity of the individual's personal, family, society, and environmental factors. Two of the social models of health, the *new public health model* and the *social skeleton: health, illness and structure–agency model* are described briefly below because they are applied in various chapters of this book.

The new public health model links the 'traditional' psychosocial model of health with the social, cultural, behavioural, and politico-economic factors that affect people's health. It directs attention to the prevention of illness through community participation and social reforms that address living and working conditions. The model has its clearly defined aim of health equity. Some of the model's major components are an intersectional action and the sustainability and viability of environments for health and well-being of individuals and communities (see also Germov, 2005b; Baum, 2008). It is a very useful model for disease prevention and health promotion at individual, social, and community levels.

Germov (2005b: 14–21) has discussed another social model of health, the social skeleton: health, illness and structure–agency. This has three major dimensions. The first is the social production and distribution of health and illness. The occurrence of many illnesses is related to social factors. For example, poor health among Aborigines and the long-term unemployed can be explained in a historical, social, and cultural context of an individual or a group. The second is the social construction of health and illness. Symptoms of an illness may be defined differently in different cultures and times. For example, an increasing recognition of mental illnesses by society has helped sufferers identify themselves as being sick and to seek

care. The third dimension is the social organisation of health care. Generally, health care services are influenced by the characteristics of the society they serve, allocated resources, and the interest of health professionals in health issues. Within a health professional sector, the power imbalance of medical practitioner, nurse, and allied health workers influences the organisation of health care. The social organisation of health care has a direct impact on prioritisation of the population groups it serves. A good example is the child abuse in Aboriginal communities, which has made it as a high priority health and social problem. This could be compared to the 2005 abolition of the Aboriginal and Torres Strait Islander Commission (ATSIC), which led to decreased attention to health issues among Aboriginal and Torres Strait Islander people. Schwartz and colleagues (1999) confirm that the historical context is another dimension which would influence health, and it has been incorporated in the social model proposed by Germov (2005b) as shown in Figure 1.1.

**FIGURE 1.1** The modified social skeleton: health, illness and structure-agency



Source: Germov, 2005b: 19

The social skeleton model provides for the concept that individuals have different characteristics such as genetics and intelligence. They may behave or act differently in different social groups. The characteristics of social groups also range widely. Shown in Figure 1.1 are some of these characteristics, such as employment status, ethnicity, and gender. Power positioning of a group in a society can be an inherent factor of a social group.

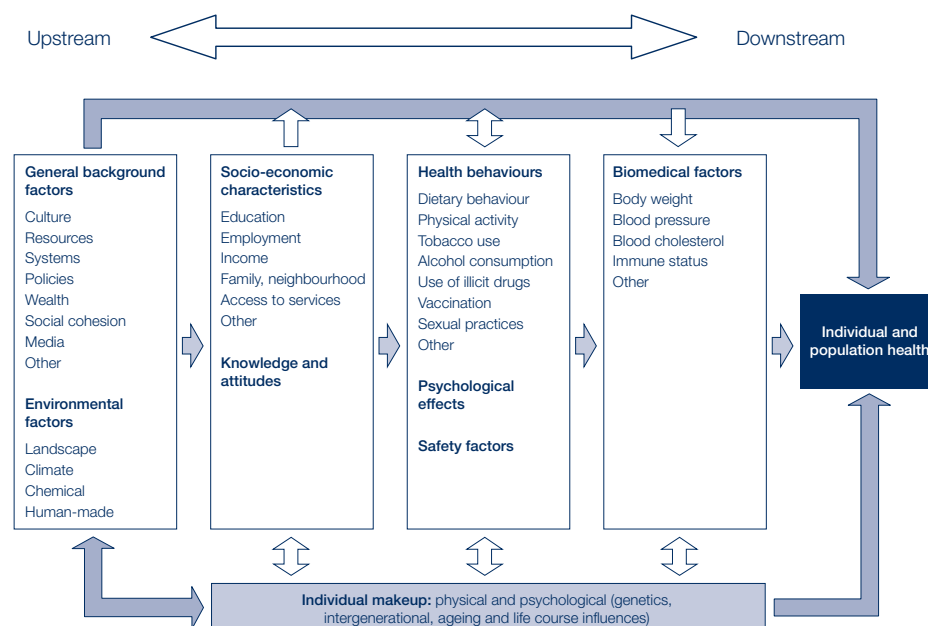
Public health, law, and politics are examples of social institutions that are associated with the individual's health and illness status. Workers who are working in a non-supportive working environment with no law or legislation enforcement are at risk of physical or psychological illnesses.

Culture is a dynamic template or framework that a society uses to view, understand, behave, and pass on its culture to each succeeding generation (Huff & Kline, 1999). Culture helps to specify what behaviours are acceptable in a given society, when they are acceptable, and what is not acceptable. Differences in beliefs and practices influencing life styles and health behaviours have significant importance to Australia because 22 per cent of the population were born overseas and more than half of these people were born in a non-English speaking country (ABS, 2007a). Culture and history also have significant importance for Australian Aborigines, who, as a group, have poor health similar to the health of people in developing countries.

**Culture:** a learned, non-random, systematic behaviour that is transmitted from person to person and from generation to generation.

## What are the determinants of health?

Another conceptual framework used to guide health care services is that of the determinants of health. The Australian Institute of Health and Welfare (AIHW, 2006: 143) proposes a conceptual framework for determinants of health. There are three levels—'upstream', 'intermediate', and 'downstream' determinants—which range from general background factors to specific health behaviours. The general background factors or the 'upstream factors' (Garrard et al., 2004: 4) are comparable to the social institution and social group levels shown in Figure 1.1; they include housing and the social environment. Knowledge and attitude are considered to be intermediate determinants of health, while specific health behaviours or the 'downstream' factors include smoking and lack of physical activity, which have direct effects on health (AIHW, 2006: 143; Keleher, 2007: 43). Health determinants also include bio-medical and genetic factors, human behaviours, socio-economic factors, and environmental factors. Figure 1.2 is a diagram which displays the complex relationships of determinants of health. This conceptual framework is somewhat similar to the modified social skeleton: health, illness, and structure–agency (Figure 1.1).

**FIGURE 1.2** The conceptual framework for the determinants of health

Source: Australian Institute of Health and Welfare (2006: 143)

## Health measurement: From illness to wellness

We often come across reports of accidents, deaths, and disease occurrences within a community. Although there may be some reports of how people are happy with their lives or the extent to which people can return to their day-to-day activities after having surgery, these are less common. Morbidity and mortality rates are the traditional measurements of the levels of sickness and deaths, and they present the ill-health of a community.

Over the past 20 years, many health indicators, such as disability-adjusted life year (DALY), health adjusted life expectancy (HALE), and self-assessed health statuses (SF-36 or SF-12), have been developed to measure the population's wellness (WHO, 2004). Other wellness indicators include the quality of life (QOL) index and the Personal Wellbeing Index (International Wellbeing Group, 2006). Standardisation of these measurements is required as they need to be used across different cultures. These measurements are also useful for assessing the outcomes of health promotion programs.



Since 1988, the Australian Institute of Health and Welfare has published *Australia's Health* biennially as a reference source with information about Australian health status and health services. Data and the findings of many studies are integrated in the publications and made widely available (AIHW, 1994) from the Institute website, <http://www.aihw.gov.au/>.

## Measurements of ill health

As in many other developed countries, the mortality rates of Australians have declined over the past eight decades. The improvement in Australians' health is supported by a number of health indicators. In 1907, the first national statistics showed that the crude death rate was 1200 per 100,000 population. In 2005, the crude death rate decreased to less than half—598 per 100,000 population (AIHW, 1994; ABS, 2007b). Compared with 14 selected OECD countries, the 2003 Australian male standardised death rate ranked third lowest, while the female standardised death rate ranked the fifth lowest (AIHW, 2006: 24).

In 2005, the top two major underlying causes of deaths were malignant neoplasms (cancer), and ischaemic heart disease. The cancer standardised death rate was 178 deaths per 100,000 population, and contributed 29.4 per cent of all deaths. The ischaemic heart disease standardised death rate was 106 deaths per 100,000 population, and contributed 18.0 per cent of all deaths (ABS, 2007b: 3303.0). Other diseases that are considered to be disease priorities because of their major contribution to the burden of illness and injury in the community include arthritis and musculoskeletal conditions, diabetes, injury, mental illnesses, and communicable diseases (Department of Health and Ageing, 2007).

## Measurements of wellness

Life expectancy has been used as a wellness indicator for more than 60 years. It is defined as the average number of years of life remaining to a person, and is usually calculated using age-specific death rates for a particular period. In 1920–22, life expectancy at birth in Australia was 59.2 years for males and 63.3 years for females. In 2000–02, life expectancy in Australia at birth had increased to 77.4 years for males and 82.6 years for females (AIHW, 1998, 2000, 2006).

Since the late 1990s, other wellness indicators, including self-assessment of health and the satisfaction with life, have been reported as a part of health measurements (AIHW, 1998; Turrell et al., 1999; WHO, 2004). The use of these indicators helps better understand how well each group in the population is. The following selected information uses wellness indicators to present Australians' health overall.

In 2004, Australians enjoyed good health for about 90 per cent of their life span, with the remaining 10 per cent of their time spent with illness or disability. This information is based on the health adjusted life expectancy (HALE) to indicate the expected number of years that people can live without reduced functioning (WHO, 2004).

Self-reported health status is commonly used as an indicator of general health and well-being. It refers to how individuals assess their own health at a given point in time according to their values. It has been found to be a good indicator of future health care use and mortality, particularly in older Australians. Table 1.1 presents self-assessed health status by number of long-term conditions, based on the 2004–05 National Health Survey. Both measures of ill health and wellness are used to present the health status of those who have a range of long-term conditions compared with those without any condition. Both measures indicate that the more long-term conditions people have, the worse health status they perceive.

**TABLE 1.1**    Self-assessed health status by number of long-term conditions, 2004–05 Australian Bureau of Statistics National Health Survey

Self-assessed health status	Number of long-term conditions					
	None	One	Two	Three	Four	Five or more
Excellent/very good	74	71	63	55	49	30
Good	22	24	29	32	33	31
Fair/poor	4	5	8	13	18	39
Total	100	100	100	100	100	100

Source: Australian Institute of Health and Welfare, 2006: 27

Other health measurements include incidence, prevalence, disability, activity limitations, potential years of life lost, and specific mortality for a specific cause. Quality data are required so they can be used to assess changes in a population’s health through time.

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## Health education and health promotion

Governments are the major provider of health care services to their citizens, including treatments, rehabilitation, palliation, disease prevention, health education, and

health promotion. Health education is a structured discipline that provides learning opportunities about health through interactions between educators and learners using a variety of learning experiences. The learning process can enable people to change conditions or modify behaviour voluntarily for health enhancement. Health education includes those experiences and skills that affect the way people think and feel about their health, and it motivates them to put information into practice (Modeste & Tamayose, 2004: 58). In the early 1970s, health education was recognised as having potentially important roles in reducing the impact of chronic diseases and increased health care costs in the Australian health care system. By 1973, the Community Health Programme was initiated and funded by the Commonwealth government. One of its aims was to revive community health centres. Health education in wider communities was included as a part of the Community Health Programme activities. Community health staff delivered health education to prevent diseases in communities and health care units. Most of the health education was on a one-to-one basis. A range of health education programs and activities were delivered under the Community Health Programme through many health care organisations, including immunisation, family planning, and cervical cancer screening. In 1978, the financial support from the Federal government to the Community Health Programme ceased.

Following an increasing focus on health promotion in its broadest sense (Chapter 2) and the widely adopted Ottawa Charter of Health Promotion, the term ‘health promotion’ has been increasingly used in public discourse. Health promotion has aimed at helping people change to healthier life styles through various efforts to enhance awareness and create environments that support positive health practices that may result in reducing health risks in a population. Tasks include needs assessment, problem identification, development of an appropriate plan including goals and objectives, creation of interventions, implementation of interventions, and evaluation of outcomes or results.

Health promotion uses a combination of health education and specific interventions at the primary level of prevention, such as anti-smoking campaigns, designed to facilitate behavioural and environmental changes conducive to health enhancement and harm reduction. One major component of health promotion is supporting policy to assist the introduction of changes. Benefits of health promotion include changes in attitudes, increased awareness and knowledge, lowered risk of certain health problems, better health status, and improved quality of life (Modeste & Tamayose, 2004: 68–69).

Health promotion interventions can occur at three levels of organisation: individual, group, and society, and they can help people at three different levels of the health and illness continuum (Jones, 2003). These levels of health promotion intervention, with examples, are shown in Table 1.2.

**Health education:** an educational process concerned with providing a combination of approaches to lifestyle change that can assist individuals, families, and communities to make informed decisions on matters that affect the restoration, achievement, and maintenance of health.

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**Health promotion:** any combination of educational, political, regulatory, and organisational supports for actions and conditions of living conducive to the health of individuals, groups, or communities.

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**TABLE 1.2**    Levels of health promotion interventions, with examples

Level of health and illness	Level of organisation		
	Individual	Group	Society
Being well or primary level of having a disease	Teaching a child to eat fruit and vegetables	Communication skills training for students to prevent bullying in a school	Mass media campaign for regular mammograms
At risk of having a disease or secondary level of having a disease	Individual coping skills: training for the spouse of a terminal cancer sufferer	Stress management workshop for workers who were offered a redundancy package	‘Meals on Wheels’ program to improve nutrition for the elderly
Having a disease or tertiary level of having a disease	Developing an asthma management plan for a patient	Support and self-help group for patients with diabetes	Working with patients and families to lobby for services to personnel with post-traumatic stress disorder.

Modified from: Jones, 2003: 197

**Population health:**  
the health of groups, families, and communities. Populations may be defined by locality, biological criteria such as age and gender, social criteria such as socio-economic status, or cultural criteria.

**Public health:** the art and science of preventing disease, promoting health, and prolonging life through the organised efforts of society.

## Evolution of population health: International, national, and state levels

Wide gaps in health status between population groups from different social, economic, and cultural backgrounds have been identified (see Syme et al., 1965; Marmot & Syme, 1976; Berkman & Kawachi, 2000; Wilkinson & Marmot, 2003). The overall goal of a population health approach is to maintain and improve the health of the entire population, and to reduce inequalities in health between population groups (WHO, 2004). Population health may be seen as the advancement of public health and health promotion. In this section, we briefly outline the evolution of population health from both disciplines.

Public health aims to reduce disease and maintain and promote the health of the whole population. The Committee for Inquiry into the Future Development of the Public Health Function (1988: 1) defined public health as:

the art and science of preventing disease, promoting health, and prolonging life through organised efforts of society.

In the nineteenth century, public health was effective in reducing mortality and morbidity from infectious diseases in two main phases. The first was the environmental sanitation phase, approximately 1840–1890. The second phase was the period of the scientific control of communicable disease, based on bacteriological discoveries and the germ theory, between 1890 and 1910 (Beaglehole & Bonita, 2004).

Since the early twentieth century, public health has focused on the contribution of individual behaviours to non-communicable diseases and premature death (Kickbusch, 2003: 386). The relationship between an individual's life style, biological, psychosocial factors, and health behaviour and illness has been the underlying concept of public health activities.

Over the past five decades, globalisation and environmental issues have had significant impacts on the health of populations. Major international hallmarks of the growth of health promotion and population health are the Primary Health Care, the Declaration of Health for All by the Year 2000 and the Ottawa Charter of Health Promotion (WHO, 1978, 1986). Following studies by leading researchers in social epidemiology, including Syme et al. (1965) and Marmot and Syme (1976) (see also Berkman & Kawachi, 2000; Wilkinson & Marmot, 2003), one of the population health concerns has been the health inequality of different population groups. Another is environmental changes, which have major impact on population health. The inclusive term 'population health' has been increasingly used.

Beaglehole and Bonita (2004) indicate that current public health action is primarily on the determinants of health that lie outside the control of individuals. The essential elements of modern public health theory and practice are the collective responsibility for health and the significant role of the state in protecting and promoting the public's health, with its focus on whole populations and their working partnership with various multidisciplinary sectors. Other elements are prevention, especially the population strategy for primary prevention with a primary concern on the underlying socio-economic determinants of health and disease, as well as proximal risk factors. Both quantitative and qualitative methods are needed as appropriate (Chapter 3).

The goals of public health aim at population-wide health improvement, implying a concern to reduce health inequalities. The United States Association of Schools of Public Health stipulates that populations can be as small as a local neighbourhood or as big as the entire world (Association of Schools of Public Health, 2007).

In order to highlight social environment and policy, the context and meaning of health actions and the determinants of health actions have been included in our discussion. This helps orientate the positive aspects of what keeps people healthy (Kickbusch, 2003: 383). There are a number of countries, including Canada,

Sweden, the United Kingdom, Australia, and Germany, adopting the population health approach to address health issues. Healthy settings, increased access to effective health care services, and improving the opportunity of health through the life course are examples of population health programs.

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## Population health in Australia

In 1973, the Commonwealth government launched the Community Health Programme, with allocated funds. The structure of the program aimed to allow increased preventive health services, used more providers, and increased user participation in the organisation of services. It expected to revive Australian community health programs (Milio, 1983).

Over the past four decades, a number of initiatives addressing population health were founded. These initiatives have undergone changes following changes in health issues, research findings, and government policies, and the influence of professional bodies (Duckett, 2007). These initiatives have had various levels of success. Selected programs are listed below to outline their relevance to population health. Some are national programs; some are state-based with similar programs conducted in other states and territories. Some programs, such as installation of fire alarms and restrictions on smoking in public places, have legislation to enforce their adoption by individuals and groups.

- The National Health and Medical Research Council (NH&MRC) founded in 1936, universal national health insurance (Medicare) introduced in 1983, and the Australian government's Pharmaceutical Benefits Scheme (PBS) introduced in 1986
- Mass immunisation programs and initiatives: immunisations for infants, children, and high-risk groups including elderly people and people with low immunity
- Services for specific gender, age or ethnic groups (for example, services through women's health centres, breast cancer screening, men's health services, Queensland's 60 and Better Program, migrant health services, Aboriginal community-controlled health services)
- Research focusing on health and wellness issues (Women's Health Australia: the Australian Longitudinal Study on Women's Health, Australian Centre on Quality of Life, the Australian Longitudinal Study of Ageing, the Household, Income and Labour Dynamics in Australia (HILDA), Growing Up in Australia: The Longitudinal Study of Australian Children, Healthy Cities Project)

- Projects focusing on life styles and illness issues (10000 STEPS, Heart Foundation 'Just Walk It', healthy eating campaigns, Chronic Disease Self-Management Program, Accident Prevention Program, National Youth Suicide Prevention Strategy, National Tobacco Strategy, water fluoridation, fencing of swimming pools, and installation of fire alarms).

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## Characteristics of communities and their relationships with population health

### Focusing on Australia

As mentioned earlier, a number of Australian population subgroups do not enjoy the same level of good health as the general population (AIHW, 2006; ABS, 2007b). Some groups have poorer health and health behaviour than others. It is important to understand the relationships between the diseases and health behaviours of population subgroups and their social, physical, demographic, and cultural characteristics. These characteristics certainly have direct or indirect impacts on their health.

Higgs and Gustafson (1985) defined a community as a group of people with a common identity or perspective, occupying space during a given period of time, and functioning through a social system to meet its needs within a social environment. People, place, and social interaction, including common interests or goals, are three critical characteristics of a community. In this volume, the terms 'population group' or 'aggregate' are synonyms for population.

**Community:** a group of people with a common identity or perspective, occupying space during a given period of time, and functioning through a social system to meet its needs within a social environment.

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### Social characteristics and population health

The major concept of social determinants of health has been widely supported by public health professionals, researchers, and academics. The concept has been based on a number of international and Australian studies (Ginzberg, 1999; Turrell et al., 1999; WHO, 1999; 2004). Income, employment, work, and education are some social characteristics related to the health of population groups.

In industrialised countries, having a good or adequate income helps individuals to gain resources to meet social and physical needs. Poverty in the form of an inadequate diet, overcrowding, poor sanitation, and lack of protection from risk factors can harm humans and cause disease (Le Fanu, 1999; Fitzpatrick, 2001).

At national and community levels, Ross (2004) reviewed data pertaining to 528 cities in the USA, United Kingdom, Australia, Sweden, and Canada, and



found a strong association between income distribution and mortality. Lack of income is related to social isolation from opportunities to improve life through employment. People who live in many poor communities tend to distrust people of different groups, and have limited social connection to the community. However, an association between income inequality and mortality was not evident in the more egalitarian countries of Australia, Sweden, and Canada. Ross concluded that income inequality might have to reach a certain level to affect health.

Another measure of socio-economic status of a residential area is the Index of Relative Socio-Economic Status (ISRSD). Information on education, occupation, income, family structure, race, ethnicity, and housing of different areas is used to compute the index, which indicates the relative socio-economic disadvantage of the area. In Australia, the percentage of people who live in the most disadvantaged areas who report poor health is higher than in the relatively more advantaged ISRSD areas. Compared with people in more advantaged areas, those in disadvantaged areas have a higher rate of hospital admission, premature deaths, and death from avoidable causes (Glover & Tennant, 1999; Korda et al., 2007).

There is extensive literature linking unemployment with poor health outcomes in individuals. Bartley's review outlines a number of mechanisms that might account for the consistent relationship between unemployment and health, and these are very similar to the types of explanations often offered linking income inequality to poor health; the role of relative poverty, social isolation, loss of self-esteem, and the cultures of poor health behaviours (Wilkinson & Marmot, 2003).

Occupation is another frequently used indicator of socio-economic status. There are occupation-related diseases. For example, workers in an abattoir are at risk of having Q fever. The 2004–05 National Health Survey reported that adults who worked in the construction industry and tradespersons had a higher rate of having work related injuries than other occupations (ABS, 2006a).

At a population level, mortality data for Australian men and women aged 25–54 years for the period of 1998–2000 found that male blue-collar workers had an all-cause mortality rate of 234 deaths per 100,000 persons. The rate was higher than for males employed in managerial, administrative and professional occupations (115 deaths per 100,000 persons). A similar pattern was found among females (Draper et al., 2004).

It has been found that types of employment (Wilkinson & Marmot, 2003) that entail a lack of control over one's work are strongly related to an increased risk of low back pain, sickness-related absences, and cardiovascular disease. Stress in the workplace also increases sickness-related absences and premature death.

Education is another important indicator of socio-economic status, as it provides an opportunity for employment and various types of work. Education



also helps an individual to gain and understand information relating to health. Women's education has an impact on health by changing women's expectations, raising awareness, and improving health behaviours. Educated women have better nutrition and use appropriate health services (Fitzpatrick, 2001).

## Physical characteristics and population health

Physical characteristics can include roads, the built environment, and the availability of walkways or bicycles. The term 'built environment' has been used to explain how town and city designs and available roads and public transport influence the health of a population. These elements of the built environment determine the ability of individuals to move around to conduct their daily activities (Cohen et al., 2003; Wilkinson & Marmot, 2003; Hodgins, 2005).

Poor housing conditions, poor sanitation, poor neighbourhoods, and crowded households are some physical characteristics of areas with low socio-economic status. People living in crowded households are more likely to transmit parasitic and infectious diseases such as flu, colds, and lice (Cohen et al., 2003). Lack of public playgrounds and places for social interaction limit the opportunities for people to meet socially. The lack of social meetings has an impact on social isolation and poor psychological health, particularly with elderly people (Christchurch Community Mapping Project, 2004; Department of Communities, 2004).

## Demographic characteristics and population health

In general, women live longer than men. The Australian male life expectancy in 2003 was 78 years, and the female life expectancy was 83 years. Compared to men, women generally tend to seek care when they are sick, have a healthy bodyweight, and eat foods with recommended nutrition levels, and they are less likely to smoke, drink alcohol, and use illicit drugs. Women are less likely to die from accidents, injuries, and self-harm while they are of working age (25–64 years). In recent years, more adolescent females (9.1 per cent) smoked daily than males (7.3 per cent). If there is no change in this behaviour, by 2025 the mortality rate due to lung cancer among women will increase (McDermott et al., 2002).

The variations in health of the population of different age groups can be caused by differences in immunity, developmental stage, and the ageing process. A high death rate during the perinatal period (0–28 days after birth) is related to the immaturity and low immunity of an infant (AIHW, 2006; Mohsin et al., 2006).

During adolescence, the death rate is relatively low compared to other age groups, but their developmental period is an underlying factor in their risk-taking behaviours. There has been an increasing number of young people using alcohol

and illicit drugs recreationally. There is also an increasing proportion of overweight or obese children, and children with Type 1 diabetes (AIHW, 2006). Studies also indicate that slow growth and poor emotional support for young children increases their lifetime risk of poor physical health and reduced physical, cognitive, and emotional functioning in adulthood (Wilkinson & Marmot, 2003). The leading causes of deaths for adolescents are injuries, accidents, and self-harm.

Adults and working-age groups are people aged 25–64 years. This group includes the ‘baby boomers’, or those who were born between the end of World War II and the early 1960s. About one in five (19 per cent) of people of this age group live with a disability. Young adults, particularly young men, may have had spinal cord and brain injuries from vehicle accidents. Alcohol and work-related activities also contribute to injuries among adults. Premature deaths and a high rate of chronic diseases are observed among Indigenous Australians and Australians from groups with low socio-economic status.

Increasing age is related to long-term health conditions, higher rates of disability, and poorer reported health status among older people, defined as people aged 65 years and over. Population ageing and the health of older people are likely to have an impact on overall health resources. Older people often have one or more chronic illnesses, including mental health problem (AIHW, 2006; ABS, 2007b).

In 2004, the number of people aged 65 years or more in Australia was estimated to be 2.6 million, or 13 per cent of the total population. Long-term health conditions are more common with increasing age. In 2005, nearly 100 per cent of older people reported at least one long-term health condition. The most commonly reported conditions were diseases of the eye, musculoskeletal conditions, diseases of the circulatory system, osteoarthritis, and respiratory conditions. Accidental falls are also a significant health problem with ageing. More than one in ten reported a very high level of psychological distress (ABS, 2006b).

In 2005, almost half of all older people (48 per cent) were classified as either overweight or obese, and around 8 per cent of older people were current smokers (ABS, 2006b). Over time, older people experience loss, not only of a partner, but often also incremental loss of independence through disability and other factors associated with ageing. A higher percentage of older Australians is socially isolated than for younger age groups.

## Geographic characteristics and population health

People who live in rural and remote areas have limited access to health care services. They may need to travel long distances to visit a general practitioner, use preventive health services, and receive comprehensive treatments for their illnesses. Due to their work and declined economy in an agricultural sector, men who live in rural

and remote areas have a high rate of psychological problems, including stress and psychosis (Fuller et al., 2002; Jirojwong et al., 2005). People in rural and remote areas also have poorer health than people in metropolitan and regional areas.

Following the migration of retired people to non-metropolitan areas in many states except Tasmania, there is a change in the demographic characteristics of people in regional, rural, and remote areas. An increased proportion of people aged 65 years and over, and more older women than older men, return to be close to family in non-metropolitan areas (Bell, 1995; Hugo, 2002). Since 2000, there has been a huge growth in the mining industry. A high proportion of mine workers travel to work on shift work on a fly-in fly-out basis, and this may be related to more family breakdown and children with behaviour problems (Gent, 2004).

Geography is also related to season, temperature, and humidity. People who live in tropical areas are at risk of exposure to more UV light and of having haemorrhagic fever and Ross River fever, with mosquitoes as a carrier. Children living in a tropical area and exposed to UV light are at risk of developing skin cancer when they reach adulthood (MacLennan et al., 1992, 1999).

## Cultural characteristics and population health

Culture influences individuals' perception of health, behaviours to maintain health, response to a symptom of an illness, and types of care they seek (Kleinman, 1980; Huff & Kline, 1999). Australian migrants may have limited access to health care services. Migrants are healthier than the Australian-born population, due to self-selection and selection processes of the Australian government leading to 'healthy migrant effects' (Liamputtong Rice, 1999; Liamputtong et al., 2003). Despite relatively good health, migrants from Asian countries are less likely to exercise than Australian-born people. Female migrants are less likely to undergo cervical cancer screening or breast cancer screening (Kelahe et al., 1998; Jirojwong & Manderson, 1999, 2002; AIHW, 2003). More Lebanese-born men smoke than Australian-born men (Rissel et al., 1998). The longer migrants live in Australia, the higher the percentage that are overweight or obese. An adoption of new health behaviours, including food intake, by migrants is a good example of a relationship between the population's health and a community (Wahlqvist, 2002) (see Figure 1.1).

The effect of culture on health of the population is also evident among Australian Aboriginal people. Australian Aborigines are the most disadvantaged group, with a poor health status that is similar to people in many developing countries. The complexity of biological, cultural, social, and psychological issues, and a history of colonisation, have led to family breakdown, poor psychological health, high rates of alcohol and substance abuse, and high rates of chronic diseases and premature death. Chapter 4 discusses the health of Australian Aborigines specifically, and

provides examples of effective health promotion programs. Chapter 12 discusses issues relating to the delivery of health promotion programs in Australian migrant populations.

In summary, the health of a population group is influenced by their social, physical, demographic, and cultural characteristics. These characteristics are also interrelated, and their complexity determines the health promotion programs that need to be provided to address a particular health issue. Active involvement of the population group is also required to ensure the success of the program. Therefore, it is important to gain knowledge relating to relationships between characteristics of a community and the delivery of a health program.

## Characteristics of communities and their relationships with health promotion

We contend that at least three major components need to be considered when designing a health promotion intervention: the level of organisation that the intervention targets (individual, group, or society), the theory or framework to be applied in the intervention, and the characteristics of the target community. We discuss the first two components in detail in Chapter 2, but the need to consider the characteristics of a community is discussed below.

Health promotion interventions can target an individual or group, or act at society level. The interventions also can range from promoting health at a healthy stage to rehabilitating physical and psychological functions at an illness stage. In order to address a health issue in a particular group, their characteristics, categorised by social, physical, demographic, and cultural factors, need to be understood, as these will influence the type of health promotion message, mode of delivery, target groups, and the size of the target groups. The attractiveness, appropriate language, congruence, and presentation of the health promotion message all have to be suitable for the age group and the socio-economic status of the target group (Egger et al., 1999). For example, a mental health care team aimed to increase an awareness of mental health services among adolescent students needs to design the content, packaging of the message, and method of message delivery by getting direct input from the target group.

In order to reach target groups whose first language is not English, the message needs to be linguistically and culturally appropriate. For example, a breast cancer screening campaign targeting Chinese women in Sydney had a message focusing on preserving and promoting health and overall well-being in everyday life, rather than attempting to detect hidden disease by screening. The message was delivered via the Chinese-language radio station to which the majority of the women listened. It was also aired at the time when the women were at home (Kwok &

Sullivan, 2007). Pictorial messages with a story presentation are more acceptable to Australian Aboriginal people than using a text message. English literacy, culture, and beliefs are underlying reasons for using such a design (Vindigni et al., 2004; Hermeston, 2005).

At the organisation level, a health promotion intervention may be delivered at a workplace, a general practitioner clinic, or a hospital, according to the health issue and the occupation of the target group. Examples of health promotion interventions in a workplace are regular hand, arm and shoulder exercises in a workplace to reduce repetitive strain injuries among typists, and compulsory immunisation to protect against Q fever among workers in an abattoir (Department of Health and Ageing, 2003). A general practitioner clinic and a hospital are settings where a number of health promotion programs are expected to be delivered to people with particular diseases. These include an asthma management program and chronic disease self-management projects (NHMRC, 2007).

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## Current issues in population health and health promotion

During the early 1980s, the term ‘health promotion’ was increasingly used due to the perceived top-down approach of health education and disease prevention. In 1986, the Ottawa Charter on Health Promotion was adopted by the World Health Organization as a strategy to reduce the burden of chronic diseases (WHO, 1986). Social epidemiology studies have shown that social and economic factors at a community or population level are increasingly important to explain the health inequity of different population groups. There is a distinction between population health and individual health, and the relative influence of various factors on each.

It can be said that population health and health promotion are relatively new and have gained momentum in public health in the past four decades. It is important to acknowledge that no single widely accepted definition of population health exists. Kindig and Stoddart (2003: 381) call for debates of their proposed definition: ‘Population health is the health of groups, families and communities. Populations may be defined as locality, biological criteria such as age, gender, social criteria such as socio-economic status or cultural criteria.’

There are a number of current issues in population health and health promotion (Abel et al., 2007; McQueen et al., 2007; Rootman et al., 2007). Some of these are:

- difficulties in measuring the effectiveness of health promotion interventions and programs targeted at a population due to long lead times to measure

outcomes and the complexity of factors determining health behaviours of the population

- the lack of a model to be used for operationalisation, which limits the ability to compare interventions across different settings and cultural contexts
- difficulties in translating research results, in particular findings from social epidemiology studies to health interventions, and
- the shift towards wellness for health interventions needing clearly defined outcomes and standardised measurement tools.

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## Conclusion

This chapter aimed to provide general information relating to communities, population health, and health promotion. We have discussed basic concepts of health, disease, and illness and have provided examples of illness and wellness measurements in order to understand better how health can be compared through time and across different settings. Some models of health and the context of the model's development are outlined. The evolution of the concept of population health, and its relationship with the characteristics of a community, have also been discussed, based on reviewed studies and discussions in the field. We have also described the importance of community characteristics to the design of a health promotion program, and included current issues relating to population health and health promotion. What we have done is to set the scene for this volume, and we hope that it has served as a basic framework for the chapters to come.

## CRITICAL THINKING EXERCISES

- 1 You are required to talk to three people. The first is a person with long-term illness, the second is a healthy adolescent, and the third is a person from a non-English-speaking background. Ask each person:
  - How do they know that they are healthy?
  - What makes them healthy?
  - What was the last time they were sick? What was the sickness?
  - What did they do to get over the sickness?
- 2 Search the publications by the Australian Institute of Health and Welfare and the Australian Bureau of Statistics to compare the health status of the general Australian population and Aboriginal people. Use the following measurements:

- life expectancy
- self-assessed health status.

How can these differences in health status be explained by genetics and social institutions? Use Figure 1.1 as a guide for discussion.

## FURTHER READING

- Ashton, J. (ed.) (1992) *Healthy Cities*. Open University Press: Philadelphia.
- Baum, F. (2008) *The New Public Health: An Australian Perspective*. Oxford University Press: Melbourne.
- Beaglehole, R., & Bonita, R. (eds) (2004) *Public Health at the Crossroads: Achievements and Prospects*. Cambridge University Press: Cambridge.
- Friedman, D.J., & Starfield, B. (2003) Editorial: Models of Population Health: Their Value for US Public Health Practice, Policy, and Research. *American Journal of Public Health*, 93(3): 366–9.
- Germov, J. (ed.) (2005) *Second Opinion: An Introduction to Health Sociology*. Oxford University Press: Melbourne.
- Moodie, R. (ed.) (2004) *Hands-on Health Promotion*. IP Communications: East Hawthorn.

## WEBPAGE RESOURCES

- Expert Patients Programme: [www.expertpatients.co.uk/public/default.aspx](http://www.expertpatients.co.uk/public/default.aspx). Provides information about a type of self-help group. A similar Australian program is the Chronic Disease Management program.
- Health Promoting Hospital: [www.euro.who.int/healthpromohosp](http://www.euro.who.int/healthpromohosp). One of the World Health Organization programs that is likely to serve as a model in many developed and developing countries.
- Healthy Cities: [www.euro.who.int/healthy-cities](http://www.euro.who.int/healthy-cities). The site of the initial international health promotion program.
- Social Determinants of Health: [www.euro.who.int/document/e81384.pdf](http://www.euro.who.int/document/e81384.pdf). Has summaries of research in developed and developing countries.
- Population Health: [www.health.nsw.gov.au/org\\_structure](http://www.health.nsw.gov.au/org_structure). An example of the development of population health programs at a state level in New South Wales.
- The Australian Institute of Health and Welfare (AIHW): [www.aihw.gov.au](http://www.aihw.gov.au). Good source of federal government publications.
- World Health Organization: [www.who.int](http://www.who.int). A number of publications can be found at this website.