

SECTION

I

AN INTRODUCTION TO SOCIOCULTURAL ASPECTS, LAW AND ETHICS

O, (abundant) is the powerful grace that lies in herbs, plants, stones . . .

WILLIAM SHAKESPEARE—*ROMEO AND JULIET*

This quote from Shakespeare's *Romeo and Juliet* alludes to two important points explored in this section. The first is that medicines can be obtained from a variety of sources within our environment. The second is that these substances produce a powerful effect on the body. The nature of the effect of medicines, both desired and unwanted, is the main theme of this book.

Historical records show that medicine use has long been a part of human culture. In Chapter 1, pharmacology is defined, and the sociocultural aspects of pharmacology are examined and evaluated. Our society is coming to grips with many issues related to medicine use, and health professionals must be aware of these issues and implement effective strategies to deal with them. Some of the issues raised in Chapter 1 include: the use of generic medicines versus proprietary medicines; medicine advertising; perspectives of medicine use in the older person; cultural differences; and the use of over-the-counter (OTC) preparations. The effect of these issues on health professionals, such as nurses, doctors and pharmacists, is also considered.

The complex array of medicines available has created the need for legislative controls in the manufacture, sale, distribution, storage, labelling and administration of medicines. A discussion of controls over medicine use in Australia and New Zealand is covered in Chapter 2. Relevant aspects of common law with reference to unclear orders, telephone orders and standing orders are also considered. Specific areas of health care responsibility, including emergency situations, nurse practitioners, midwifery practice and remote area care, are briefly discussed.

In Chapter 3, ethical issues of pharmacology are discussed using the six principles of ethics. These principles are veracity, autonomy, non-maleficence, beneficence, justice and confidentiality. Ethical situations are usually complex, and therefore often involve more than one principle, which may lead to conflicts regarding which principle should take precedence. The potential for conflict between ethical principles and the legal perspective underlying these principles are highlighted.

Sociocultural aspects

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- 1 Discuss factors affecting medicine advertising.
- 2 Discuss the types of over-the-counter (OTC) preparations available and the reasons for their use.
- 3 Compare and contrast between generic and brand name preparations, and understand the advantages and disadvantages associated with the prescription of each type.
- 4 Discuss relevant sociocultural factors influencing medicine therapy in older individuals.
- 5 Discuss relevant sociocultural factors influencing medicine therapy in individuals of different cultural and linguistic backgrounds.
- 6 Discuss relevant sociocultural factors influencing medicine therapy in Indigenous people.

KEY GLOSSARY

TERMS

brand name
generic name
generic substitution
immigrants
medicine advertising
older individual
over-the-counter (OTC) preparations
pharmacology

Pharmacology is a branch of medical science that deals with the properties and characteristics of substances used for medicinal or other purposes. The actions and effects of these substances on physiological systems are of particular interest. The physiological systems in which these effects are observed may be organs or tissues isolated from the body and artificially maintained—*in vitro* situations—or within living whole organisms—*in vivo* situations. In an etymological sense, the word 'pharmacology' is derived from two Greek words: *pharmakos*, which means medicine or drug, and *logos*, which means study.

If a major focus of medicine therapy is to promote adherence by the person to their prescribed regimen and self-care, then a wider view of health care that encompasses the sociocultural

context must be considered. Health professionals, who are socialised through their educational and professional experiences, and influenced by their own demographic characteristics, tend to hold a particular view of health care. In this region, this tendency is especially influenced by the Anglo-Celtic health care system that dominates Australia and New Zealand. This set of beliefs is institutionalised in the large organisational structures evident in our health care settings and our legal systems, and is influenced by the advertising and marketing of medicines by the large multinational pharmaceutical companies.

Nevertheless, individuals have their own sociocultural context, which influences their view of health care. This context includes demographic characteristics, such as age and ethnicity. People's views of health are influenced also by medicine advertising and packaging, and are reinforced by the current emphasis on self-care conveyed through the media, ranging from traditional media sources such as lifestyle television programs, magazines and newspapers, to social media sources such as social networking sites, blogging and discussion sites.

This chapter highlights the interplay of these belief systems—in other words, the relationship between the health professional and the person receiving therapy. These issues have an effect on the health professional's choice of medicines to prescribe, the medicines that people wish to use, and the person's adherence to a medicine therapy regimen. Specifically, this chapter discusses medicine advertising, over-the-counter (OTC) preparations, generic versus brand name preparations, medicine therapy in older people, and medicine therapy for immigrants and the Indigenous peoples of Australia and New Zealand, including Aboriginal and Torres Strait Islander peoples as well as Māori.

Medicine advertising

Two important institutions influence our decisions in Western society: the media and multinational corporations. These two institutions rely on advertising to maintain their viability and to promote particular preparations. **Medicine advertising** targets health professionals and the consumers of medicinal preparations in different ways.

Advertising of medicinal preparations has been a common feature of medical journals and some nursing journals since they were first produced. Other, more subtle, forms of advertising that have come into existence include the sponsorship of continuing education seminars and conferences by multinational pharmaceutical companies, the financial support of which is often needed for the very existence of these programs. Conference organisers and journal editors rely on promotional advertising to keep subscription and registration costs to an affordable level and to cover production costs. Other marketing methods include direct mail and visits from pharmaceutical company representatives. More subtle forms of advertising include the placement of strategic advertisements on social networking sites. In situations where exposure of information involves health professionals as active participants, such as pharmaceutical company representatives' visits, sponsored meetings or sponsored trials, there have been consistent associations found with higher prescribing frequency

than in situations where health professionals are passive participants, such as journal advertisements and mailed information.

Health professionals would like to think that they are not swayed by pharmaceutical promotion. If pharmaceutical companies believed this view, however, they would not continue to spend large amounts of money on advertising. Research indicates that pharmaceutical promotion does influence the thinking of health professionals with respect to the choice and use of medicine. Media focus on certain medicines in mainstream circles has also been instrumental in promoting the use of certain medicines.

Cyclo-oxygenase-2 (COX-2) inhibitor medicines such as celecoxib and rofecoxib are an interesting illustration of this point. Doctors appear to have been swayed by media coverage about the musculoskeletal benefits of these medicines in osteoarthritis, which has subsequently led to increased prescribing levels. After rofecoxib was withdrawn worldwide in 2004 due to excessive risks of patients developing myocardial infarction and stroke, prescribing levels of COX-2 inhibitors have subsequently decreased. However, despite warnings about the use of COX-2 inhibitors in people with cardiovascular, gastrointestinal or renal conditions, they are still commonly prescribed in clinical practice.

The antibacterial product Augmentin, the combination of a penicillin (amoxicillin) and clavulanic acid, is another example where sales have improved through promotional

claims. Doctors sometimes prescribe Augmentin for the treatment of otitis media and sinusitis in young children. Some research has suggested that Augmentin has no significant benefit over amoxicillin alone in treating children over 2 years of age with acute otitis media. The additional problem with Augmentin is that it may cause cholestatic hepatitis as a rare adverse effect. This adverse effect of cholestatic hepatitis has been attributed to clavulanic acid. Furthermore, the *Australian Medicines Handbook* recommends amoxicillin as the antibacterial agent of first choice for the treatment of otitis media if symptoms such as fever and vomiting occur.

Statin medicines are a further example of how promotional advertising has expanded a medicine's use. Eating a healthy diet can assist in lowering low-density lipoprotein. Similarly, losing weight can also reduce low-density lipoprotein, triglyceride and total cholesterol levels. In addition, regular weekly exercise at a moderate intensity can assist in reducing cholesterol levels. While people with hypercholesterolaemia or those who are at risk of coronary heart disease should consider taking a statin, there are many people who are on a statin who may not actually require it. Statin medicines are one of the most highly prescribed medicines in Australia and New Zealand, partly because of their heavy promotion among health professionals and consumers.

CHALLENGES FOR THE HEALTH PROFESSIONAL

Nurses and pharmacists are also not exempt from exposure to promotional activities. Pharmaceutical companies often provide generous grants to nurses and pharmacists wanting to research particular medicines produced by these pharmaceutical companies. Nurses and pharmacists are subjected to advertising in international journals for specialty areas such as the operating room, medicine adherence and critical care. Pharmaceutical company representatives also visit health care agencies and provide educational sessions for nurses and pharmacists, which are sometimes a disguise for the promotion of their products.

One of the major problems with medicine promotion for the health professional is that advertisers can disguise promotional material as important information rather than as advertising. Inadvertently, doctors, nurses and pharmacists continue to be influenced by the subtleties of medicine promotion. There are various ways to tackle the problem. For instance, journal editors have a responsibility to protect their readers. Editors should ban the placement of a medicine advertisement next to an article about that medicine. Another way is to place all advertisements in a section separate from the articles. The *Journal of the American Medical Association (JAMA)* and *Heart & Lung* incorporate this layout style. Perhaps even more pertinent is the need for medical, nursing and pharmacy students to

learn skills in the critical analysis of published advertising data. Continuing education sessions in the workplace for health professionals will also help here.

RESTRICTIONS ON ADVERTISING TO THE GENERAL CONSUMER

In Australia, advertising of Scheduled medicines to the general consumer is restricted according to the *Therapeutic Goods Act 1989*. (Refer to Chapter 2 for a full explanation of Scheduled medicines.) The Medicines Australia Code of Conduct complements the legislative requirements for advertising in Australia. Apart from a few exceptions, medicines that are included in Schedule 3 (Pharmacist-only medicines), Schedule 4 (Prescription-only medicines) or Schedule 8 (Controlled drugs, where possession without authority is illegal) must not be advertised in the popular media, such as radio, television and general magazines. These Scheduled medicines can be advertised in trade and professional journals intended for circulation within the medical, nursing, veterinary, dental, pharmacy and pharmaceutical professions. Medicines in Schedule 3 that can be advertised in the popular media include: inhaled corticosteroids, such as beclomethasone; vaginal anti-infective agents, such as miconazole; nicotine to treat smoking dependence; and topical corticosteroids such as hydrocortisone and mometasone. New Zealand and the United States are the only two countries in the Organisation for Economic Co-operation and Development (OECD) that allow direct-to-consumer advertising (or promotion of prescription medicines) to the general public. In the United States, surveys of medical groups indicated that direct-to-consumer advertising encourages consumers to request expensive medicines when less costly options would also be effective. In New Zealand, a review of direct-to-consumer advertising found that it did not provide consumers with objective information about the risks, benefits and options for treatment, and the effects on the sustainability of health systems.

Despite restrictions on direct-to-consumer advertising in Australia, pharmaceutical companies have become very creative in promoting restricted medicines in the popular media. De facto direct-to-consumer advertising occurs when pharmaceutical companies provide information about specific conditions that do not mention the name of a medicine. For example, orlistat has been extensively marketed in Australia for weight loss. Sildenafil, which is indicated for erectile problems, has also been the focus of extensive campaigns in Australia using celebrity endorsements in newspaper and television advertisements, and on social media platforms. These consumer campaigns did not mention the name of the medicines, and therefore adhered to the current Medicines Australia Code of Conduct. However, the campaigns tended to rely on emotional appeals and promoted the medicalisation of normal health.

Such campaigns may also instil false hopes in many people, and put doctors under increased pressure to prescribe even if the medicines are not appropriate clinically.

Over-the-counter preparations

Health professionals must be aware that individuals are also making personal choices regarding medicines introduced into their therapy. **Over-the-counter (OTC) preparations** are available to the general public at pharmacies and, depending on the restrictions imposed, in other places such as supermarkets. These products are available without a prescription, and often without restriction or supervision by a health professional. Complementary forms of therapy, such as chamomile, garlic, ginger, ginseng, St John's wort and *Echinacea*, can also be purchased from pharmacies, health food stores and supermarkets without a prescription. (Chapter 2 covers the legal controls placed on medicines, and Chapter 67 presents an overview of herbal medicines.) People often use these preparations to relieve a wide range of illnesses and symptoms, including the common cold, musculoskeletal pain, anxiety, sleep disorders, abdominal pain and constipation.

In the Australian and New Zealand contexts, health is increasingly geared towards consumer self-care. This phenomenon is indicated by the shortened length of hospital stay following both acute illness and elective surgery, and the increased emphasis on consumer health education. Obviously, consumer self-care constitutes a significant factor that affects the cost of health care. People are also encouraged to practise self-care through media advertising, product literature found in their local pharmacy, discussions with friends and relatives about preparations they use, and articles located in popular magazines and social media sites. The effects of packaging, pricing and other marketing ploys used by supermarkets also influence people's decisions. Consequently, the self-medicating person is a day-to-day reality for most health professionals.

The health promotion movement has identified the possibility of lifestyle change as an important factor in the battle to prevent disease. Through health promotion, health professionals redirect their efforts towards disease prevention rather than cure. Individuals and communities achieve this goal by setting up their own health agendas.

People are now also more likely to buy an OTC preparation or a complementary therapy before visiting their local doctor for advice. Even if they then decide to consult their doctor, they may not tell the doctor about their use of these treatments. This lack of consultation is because people often do not consider OTC preparations or complementary therapies as proper medicines: as these preparations do not require a prescription, the belief is that they can be taken without concern or risk. However, if the person takes prescription medicines, OTC preparations or

complementary therapies concurrently, drug interactions are more likely to occur (see also Chapter 12). In their role of patient advocate, health professionals should encourage self-care and health promotion, and advise on the appropriate use of, and possible problems with, these non-prescription products. The person should also actively seek out information from doctors, pharmacists and other health professionals.

Despite scepticism from health professionals about the possible benefits of complementary therapies, individuals are consuming them in increasing amounts to either supplement or replace traditional medical treatment. Health professionals have struggled to access the current knowledge about these therapies that they need in order to help people make informed choices about their use, and to separate legitimate claims from unproven claims or hype. While health professionals may not be in a position to answer questions about complementary therapies, people have often sought out this information for themselves from sources such as the Internet. The Internet also provides online stores where individuals can purchase complementary therapies without needing to speak to a health professional at all.

A situation where health professionals do not have total knowledge of all of the medicine therapies consumed by the people they treat may present a challenge for the traditional health care establishment. Undoubtedly, individuals will continue to seek out complementary therapies independently to promote their state of health and wellbeing. It is up to health professionals to become cognisant of the types of therapies that may be sought, to enable them to inform people about the benefits of complementary therapies, as well as alert them to the potential risks and complications.

OTC preparations or complementary therapies used in the appropriate manner and according to the supplied directions may have a positive effect on health. Conversely, inappropriate use of these treatments can cause adverse effects. Self-diagnosis and prolonged treatment without advice from a health professional may delay the appropriate intervention and mask the symptoms of a serious condition. For example, a person with chronic obstructive pulmonary disease (COPD) should see a doctor and receive prescription medicine. A person with obstructed airways should not treat the condition with the inappropriate use of cough and cold preparations. Instead, the doctor will plan a specific regimen for the person to follow. Furthermore, a preparation that is perceived as harmless by the person may actually produce serious effects.

Topical preparations may also cause serious adverse effects. Tretinoin is marketed as a topical treatment of acne vulgaris and is available as a cream, liquid or gel. But the pharmaceutical companies have also promoted tretinoin in the general media as an effective medicine

for the prevention and treatment of wrinkles. Sales of the topical preparation consequently grew. Birth defects were noted in babies born to women who used isotretinoin (an oral retinoid preparation used in severe cystic acne) during pregnancy. These defects included stillbirth, cleft lip, cataract, and hand and abdominal malformations. The popularity of these topical preparations prompted the rescheduling of topical tretinoin from an OTC preparation to prescription status. Under Australian legislation, the manufacturer, packer or supplier is required to include strict warning instructions on the packaging of topical products. These warning statements are as follows: ‘Do not use if pregnant’ and ‘Warning—may cause birth defects’. Although absorption through the skin is minimal, in view of the teratogenicity of oral retinoids, topical preparations should not be used during pregnancy.

In addition, complementary therapies may cause serious adverse effects in individuals. For instance, the use of chamomile oil in aromatherapy for an individual who has allergic tendencies may lead to anaphylactic shock.

COMMON CHARACTERISTICS OF OTC PREPARATIONS

Many OTC preparations contain a combination of several medicines. These are called fixed combination preparations, because the dose of each medicine is fixed within the preparation. For example, if a person is taking a preparation containing 6 mg of one medicine and 60 mg of another medicine and wants to increase the dose, each medicine will be proportionally increased when administered. Each medicine has its own pharmacological activity, which increases the potential for adverse effects and drug interactions with other prescription preparations (see also Chapter 12).

Several OTC products contain only one medicine as the active ingredient. These are often more advantageous, as complete control over medicine dosage is possible. Taking specific single medicines for defined symptoms should decrease the incidence of adverse effects. For example, a dry cough warrants a cough suppressant, whereas nasal congestion requires a decongestant. Furthermore, single-drug preparations tend to be less expensive than combination products. (For further discussion on OTC respiratory preparations, see Chapter 47.)

There has been extensive debate about the use of OTC preparations, in particular cough and cold formulations, in young children. More than a decade ago, Australia’s Therapeutic Goods Administration (TGA) announced that combination cough and cold preparations containing sedating and non-sedating antihistamines, antitussives, expectorants and decongestants were to be prescription-only for children under 2 years, due to concerns surrounding their use in this age group. Around the same time, the therapeutic regulatory authorities in Canada, the United States, the United Kingdom and New Zealand

arrived at the same conclusion. There has been little conclusive evidence about the proven effectiveness in the use of these medicines in this age group. They may also cause serious problems such as seizures or dysrhythmias.

Generic name versus brand name preparations

The term generic name can be defined in different ways. The **generic name** of a medicine is the shortened, simplified version of the chemical name. Medicines that are bioequivalent, yet sold by different manufacturers, will still have the same generic name, although they will have different brand names. The medicine’s **brand name** (also called the trade name or proprietary name) is the registered trademark used by the pharmaceutical company to identify the preparation of a specific medicine. An example of a generic name is paracetamol or acetaminophen, which is sold under the brand names of Panadol and Panamax (among others).

Prescribers can order medicines using generic prescribing, which means that the pharmacist can supply any formulation of the medicine. **Generic substitution** means that the pharmacist can supply any formulation of the medicine without referring back to the prescriber. This process can occur even if the prescriber has written a prescription for a particular brand. To avoid this, the prescriber can endorse a prescription to make sure that only a particular formulation is provided.

More than one pharmaceutical company can assign its own specific brand name for a medicine, so long as one company does not hold the patent rights for the sale of that medicine. With patent rights, the medicine is patented for a specified time, during which no other pharmaceutical company may produce or sell that medicine without permission from the original patent holder. Much of the patent period protects the pharmaceutical company while it conducts clinical tests on the medicine. Once the pharmaceutical company puts the medicine on the market, the latter part of the patent period protects it from competition by other pharmaceutical companies. When the patent period expires, other companies are free to manufacture and sell the medicine. Once the patent has expired, pharmaceutical companies rely heavily on promotional advertising to encourage doctors to prescribe one specific brand name over another brand name.

Price differences for alternative brands of medicines exist in Australia and New Zealand. Under current government policy, pharmaceutical companies can set their prices depending on market competition. Often the brand name originally protected by a patent agreement is more expensive than competitive brands because it had to bear the cost of the groundwork in research and development for the medicine.

One of the major fears relating to the use of a generic preparation of a specific medicine is that they may not be interchangeable or bioequivalent. In other words, it is feared that they may not be absorbed or act in the same way upon administration. However, a brand name preparation of the same generic medicine does not create different clinical responses when administered. All medicines are now carefully evaluated for comparable effects on absorption and clinical response with the original patented medicine, so that all brand names of a particular generic medicine are equivalent to each other. Pharmaceutical companies submit supporting data regarding the absorption and clinical response of their medicines to central drug authorities, who ensure that the different brands are bioequivalent. This information is readily available to the prescribing doctor and the pharmacist. As alternative brand names are considered bioequivalent, the person is entitled to discuss any cheaper options with the doctor and the pharmacist. Nurses should also inform people of the possibility of choosing a cheaper brand if they experience difficulties covering the cost of their current brand.

People receiving treatment can become confused if their doctor prescribes different brand names of the same generic medicine at different times. For example, in Australia the histamine H_2 -receptor antagonist ranitidine has several brand names available as tablet formulations. If the person is used to taking a little blue pill and suddenly receives a little white pill, a great deal of time is often spent resolving the person's resulting confusion. In recent times, pharmaceutical companies have attempted to solve this problem by making their products look the same as any others already on the market. Confusion may be reduced further if pharmaceutical companies are required to make generic names of medicines more prominent on the label than the brand names.

Problems may also arise in the institutional setting, where health practitioners have become familiar with the appearance and use of a particular brand of medicine. Students are taught pharmacology by reference to the generic names of medicines. Identifying medicines by their brand names in the health care setting, such as on hospital wards, means there is a greater potential for making mistakes. It is important, therefore, for health professionals to refer to medicines by their generic names.

Advocates of the prescription of specific brand names believe that it is the only way of ensuring high standards and well-tested products. The research and development required prior to the launch of a medicine is very expensive, and the ultimate success of a particular product often depends on the continued sales of that product. It is further believed that a person may favour one product over another because of flavour, appearance, packaging or past experience.

The final choice of brand should arise from consultations between the person and their prescribing doctor. If more than one brand exists, the prescribing doctor can choose

Figure 1.1 Prescription indicating that brand substitution is permitted

Date: 1 January 2022

Dr Jack Muffler
123 Numbers Street
Alphabtown 4321 Phone: 9876 5432

Prescriber no: 987876

Patient's Name: Nancy Infectone
Address: 123 Shapes Road Coloursville 4322

Brand Substitution not permitted (tick here)

E-Mycin oral liquid 80 mg/mL
Quantity: 100 mL
Take 5 mL by metric measure every eight hours until finished.

1 repeat

Signature of Doctor: Jack Muffler

which is the most appropriate for the person. Within the prescription, the doctor needs to indicate whether brand substitution is permitted (see Figure 1.1). Sometimes, however, company advertising will sway the doctor towards one brand name over another. The doctor may, therefore, present a biased view of which brand is more suitable for the person's needs. It is important that doctors consider whether their prescribing habits may be influenced by pharmaceutical company advertising. Health professionals are responsible for promoting good treatment choices for people, communicating effectively with people about various preparations, and collaborating with other health professionals. While health professionals make the final decisions about appropriate therapeutic options, the recipient should be included in the decision-making process.

It should be apparent at this point that an individual's choice of medicine is not a clear-cut decision; these choices, made by both health professionals and patients, are influenced by a number of external factors. These external factors include advertising in professional journals, the information placed on the packaging of medicines in supermarkets, and the confusion that may arise when people are presented with any number of medicines promising the same effect. Every person processes information differently, and the choices made are further complicated if we also consider factors such as the person's age or background.

Therapy in the older person

The populations of Australia and New Zealand are growing older, as with all Western industrialised countries.

Reasons for the increased ageing of these populations relate to sustained low levels of fertility, resulting in proportionally fewer children being born, and longer life expectancy. According to the Australian Bureau of Statistics, the median age of the Australian population is projected to increase by 5.7 years across a 26-year period, from 31.6 years in 1988 to 37.3 years in 2027. Approximately 80 per cent of the total Australian government expenditure on medicines relates to the concessional prescriptions of the ageing population. Statistics show a similar trend for New Zealand. These statistics have significant implications for medicine administration in the **older individual**. These individuals are also more prone to illnesses than other groups, which leads to the use of more medicines. (The practical aspects of medicine administration in the older person are discussed in Chapter 14.) One of the problems encountered with older people is the excessive or unnecessary use of medicines. This practice is known as ‘polypharmacy’.

POLYPHARMACY

Polypharmacy may arise from actions taken by individuals, their families, doctors, nurses or other health professionals. As with aspects relating to the administration of OTC preparations, polypharmacy is affected by advertising. Thus, the reasons for this condition are complex. Table 1.1 lists common features of polypharmacy, which are discussed further.

USE OF MEDICINE WITH NO APPARENT INDICATION

This process occurs when the person is taking medicine therapy for a condition not diagnosed for the person. The practice may occur in residents newly admitted to aged care facilities who continue with previous medicines without a re-evaluation of their appropriateness.

USE OF DUPLICATE MEDICINES

Sometimes medicine therapy is duplicated, where the older person receives similar medicines with identical

effects. This practice may increase the types of adverse effects and drug interactions that are likely to occur.

CONCURRENT USE OF INTERACTING MEDICINES

The older person may take medicines that have the potential to alter the effects of other medicines. Food may also produce interactions with medicines. (See Chapter 12 for a detailed discussion of drug interactions.)

USE OF CONTRAINDICATED MEDICINES

The older person may take medicines that are not appropriate for a particular condition. For example, a doctor should not prescribe oral corticosteroid therapy to a person with both diabetes and asthma, as it enhances the blood glucose levels and may worsen their diabetes management. Contraindicated medicines also include medicines known to cause allergic or toxic reactions in the person.

USE OF INAPPROPRIATE DOSAGE

The person may receive a dose that is too high or too low. Possible reasons include inappropriate adjustments for a person’s physical size, an incorrect frequency of administration, and kidney or liver malfunction.

USE OF MEDICINE THERAPY TO TREAT ADVERSE EFFECTS OR ADVERSE DRUG REACTIONS

Common in polypharmacy is the management of adverse effects or adverse drug reactions with the administration of yet more medicines. The medicine used to treat adverse effects or adverse drug reactions usually has its own adverse effects, which may lead to the administration of even more medicines. If this situation is allowed to continue, the older person may get on a merry-go-round of multiple medicine administration. An example of a prescribing cascade is when an older person is prescribed donepezil, an acetylcholinesterase inhibitor for Alzheimer’s disease, and the older person develops urinary incontinence. The person is then prescribed an antimuscarinic agent, oxybutynin, to treat urinary incontinence. Unfortunately the use of oxybutynin may also worsen the older person’s level of cognition.

IMPROVEMENT FOLLOWING DISCONTINUATION OF MEDICINES

Sometimes, it is difficult for the health care team to determine whether medicines are helping or hindering the person’s condition. In this situation, the doctor may decide to discontinue all medicines. Specific medicines can then be gradually introduced and their clinical effects assessed. Table 1.2 lists the possible consequences arising from polypharmacy. (These factors are further discussed in Chapter 12.)

Table 1.1 Common features of polypharmacy

Use of medicine with no apparent indication
Use of duplicate medicines
Concurrent use of interacting medicines
Use of contraindicated medicines
Use of inappropriate dosage
Use of medicine therapy to treat adverse effects or adverse drug reactions (termed the ‘prescribing cascade’)
Improvement following discontinuation of medicines

Table 1.2 Consequences of polypharmacy

Adverse drug reactions
Drug interactions
Financial expense
Falling levels of orientation and alertness
Diagnostic problems, with a medicine mimicking a disease state

Medicine therapy in individuals of different cultural and linguistic backgrounds

Australian and New Zealand societies comprise individuals of different cultural and linguistic backgrounds who have migrated from a variety of countries. Some individuals have come from English-speaking countries, but many are **immigrants** from countries with a first language other than English, or who do not speak English at all. The health care systems of Australia and New Zealand predominantly reflect the Anglo-Celtic structure. The majority of health care programs have been developed by white individuals with Anglo-Celtic roots, and these programs reflect their belief and value systems. Consequently, the more removed an immigrant's original health care system is from the Anglo-Celtic/Western model, the greater their potential difficulty in acclimatising to the health care systems of Australia and New Zealand. Individuals of different sociocultural and linguistic backgrounds possess varying perceptions of illness and health. Ethnicity has been shown to be an enormous barrier to effective and safe medicine use, and immigrants—especially those of non-English-speaking backgrounds—are often most at risk of poor health, social and economic outcomes from medicine mismanagement.

The traditional beliefs and values of a particular culture influence an immigrant's perception and expectation of medicine therapy. Conflicts may arise if these perceptions differ from those of the health professional, thus affecting the quality and effectiveness of care. The deeply rooted beliefs and values of immigrants may also affect their ability to comply with prescribed medicine regimens.

For example, people of Chinese origin may use traditional medicines either simultaneously with or before seeking more conventional Western means of health care. These traditional medicines are influenced by the concept of the *yin* (cold air) energy forces and the *yang* (hot air) energy forces. The feminine energy force, *yin*, represents darkness, softness and cold, while the masculine energy force, *yang*, represents light, strength and heat. Excess of either energy force will lead to a lack of equilibrium and subsequent disease.

Certain diseases are thought to occur through the cold or hot aspects of substances present in medicines, food, air or the body itself. Treatment is by the application of a substance or food that is opposite to the cause. Disorders such as paralysis, pneumonia and earache are thought to arise from cold conditions. The Chinese often consume hot foods, such as chocolate, cheese, alcohol, eggs and cereal grains, to treat a cold condition. Hot therapies include penicillin, tobacco, ginger root, garlic and castor oil. On the other hand, hot conditions, such as rashes, ulcers, fever, infections and liver problems, are treated with cold foods, such as dairy products, honey, tropical fruits and raisins. Bicarbonate of soda and herbs such as sage are also consumed as cold therapies.

Traditional medicines can take the form of herbs or other plant extracts. As these preparations have their own pharmacological actions, they may interfere with the actions of more conventional Western therapy used in health care agencies. People may not perceive these naturally derived agents as medicines. Thus, in determining the person's medicine history, the health professional should specifically ask whether herbs, plants or any other types of preparations are being used to treat a condition (see also Chapter 5).

In some Asian cultures, a number of techniques for the cure of illnesses have evolved. Coin rubbing is a technique commonly used to treat minor ailments of the forehead, nose, neck, chest and back. The coin, having been dipped in Tiger Balm, is forcefully rubbed over the body. If done properly, this procedure leaves long lines of dark bruises on the skin. In addition to traditional medicines, it is therefore important to determine what other kinds of home remedies are being practised by ethnic groups.

Besides the use of traditional medicines, some Asians often use conventional medicines concurrently. Self-medication is a popular behaviour in Asian countries, because many medicines do not require a prescription. This behaviour may partially explain the increasing resistance to bacteria in readily available antibiotics. More importantly, it may explain a person's preferences for complex or drastic medicine therapy. For example, they may believe that two tablets must be better than one tablet.

Contrary to their feelings about medicines, some Asian people may be extremely uncomfortable about invasive procedures, such as surgery. Furthermore, certain ethnic groups equate operations and visits from the hospital clergy with a poor prognosis. These views may have evolved from the people's hospital experiences in their countries of origin.

In many cultural groups, kinship networks form strong social support systems that influence the person's decision-making processes. For instance, for an older Greek woman to complete a course of anticancer therapy, approval may need to be obtained from an authority figure in the family

(e.g. her son or husband). To ensure rapport and promote cooperation, family members will need the opportunity to understand and appreciate the recommendations before the cytotoxic therapy program begins.

Consequently, where ethnicity is likely to affect medicine therapy, the health professional must assess the beliefs, values and other activities that could have an impact on each situation. In accepting, valuing and understanding people's health practices, it is possible to determine appropriate methods of administering drug therapy without compromising their beliefs and values.

Medicine therapy in Indigenous people

The Māori and the Aboriginal and Torres Strait Islander people were the original inhabitants of New Zealand and Australia, respectively, before discovery and settlement by the Europeans. In contemporary society, the health of Māori appears better than that of Aboriginal and Torres Strait Islander people. They do, however, still exhibit a higher incidence of rectal and colonic cancers, adolescent asthma, diabetes mellitus, tuberculosis, bronchitis, pneumonia, rheumatic fever and other diseases than their non-Māori counterparts. Life expectancy for Māori compared with non-Māori individuals has dramatically improved, but is not yet the equal of non-Māori. On the other hand, Aboriginal and Torres Strait Islander people experience extremely high death rates, where the life expectancy is about 15–20 years shorter than their non-Aboriginal counterparts. In addition, Aboriginal and Torres Strait Islander people have a higher incidence of hypertension, ischaemic heart disease, diabetes, alcohol misuse and sexually transmitted infections than the general population. Key policy differences in Australia include complexities relating to the responsibilities for funding and service delivery between the different levels of government, under-expenditure on Indigenous health care and essential services, and the lack of a treaty underpinning Indigenous rights.

Conditions that are almost non-existent in the general population (e.g. leprosy and tuberculosis) are prevalent in Aboriginal and Torres Strait Islander populations. There is also a high prevalence of acute and chronic infections (e.g. trachoma, a chronic conjunctivitis that causes blindness, and middle ear infections, which can lead to permanent hearing loss). Although the health situation for Māori is better than that for Aboriginal and Torres Strait Islander people, the reasons for inequalities of health with their white counterparts remain the same. The health problems of the Indigenous person resulted primarily from European contact, when traditional living

patterns were disrupted and replaced with environmental and economic factors that adversely affected health. These factors include unclean water, poor nutrition and inadequate housing. Before European settlement, the traditional Indigenous societies were healthier overall.

The view of health maintained by Indigenous people has strong ties with spirituality, the land, plants and animals. On the other hand, most health professionals' view of health is external to the environment. The conventional Western view maintains that the environment must be adapted to achieve health. Health professionals must develop ways of understanding how Indigenous people make decisions, valuing their cultural ways as being just as legitimate as those of Western culture. This improved awareness will assist in promoting effective means of medicine administration for these people. By acknowledging these cultural differences, health professionals will be better able to promote compliance, advocacy and education in areas of medicine therapy. For Indigenous people, environmental and spiritual factors are central to their sense of wellbeing. Medicine administration must also take account of these factors.

In Indigenous communities, many people would have an idea of time that relates to the movements of the sun and moon rather than the more conventional methods of time-keeping. Remote area health professionals on Aboriginal settlements in the Northern Territory prefer to provide medicines requiring once-a-day administration by Aboriginal and Torres Strait Islander people. Medicines requiring more frequent administration present a challenge for an Aboriginal or Torres Strait Islander person with no timepiece. The antibacterial agent doxycycline (Vibramycin) is extremely popular in these communities, as the Aboriginal and Torres Strait Islander people take it in a once-a-day dose. Most other antimicrobials require more frequent administration of therapy for optimal effectiveness.

Problems with medicine compliance in the past have led to the increased use of the intramuscular contraceptive medroxyprogesterone acetate (Depo-Provera). Australian remote area nurses administer Depo-Provera at three-monthly intervals to Aboriginal and Torres Strait Islander women instead of providing these women with the opportunity to self-administer the more conventional oral contraceptive formulation. Depo-Provera is a reliable method of contraception with a prolonged activity, but it is associated with more adverse effects than its oral counterpart. Suggestions have been made that these Aboriginal and Torres Strait Islander women know nothing of this medicine's effects except that it is a reliable form of birth control. As other methods of contraception were deemed unsuccessful, this is a difficult and ethical dilemma for remote area health professionals. On the one hand, Aboriginal and Torres Strait Islander women

require an effective means of contraception. On the other hand, their culture may hinder compliance, which means that a more radical form of treatment is necessary (refer also to Chapter 3).

In addition to the traditional languages of Indigenous people, most speak English. Health professionals may feel frustrated because Indigenous people appear reluctant or slow to answer questions about their medicines. However, the person may feel that the question is not appropriate, or they may lack an understanding of certain technical terms (e.g. cardiac tablets instead of heart tablets), or trust and rapport are lacking. Furthermore, Indigenous people do not often use the Western convention of asking questions. Instead, information is acquired by presenting the information to the health professional, who will either confirm or correct it.

Tone is also important. A professional, officious, efficient approach is likely to be interpreted as ill-mannered and uncaring, further highlighting the Indigenous people's stereotypes of non-Indigenous people. Similarly, attempting to establish rapport by asserting one's role as a doctor, pharmacist or nurse is often insufficient. To establish rapport and trust, the health professional should identify a friend, family member or professional colleague, preferably of an Indigenous background, who is known to both parties. This individual can assist in laying the foundations for a good therapeutic relationship.

Furthermore, health professionals should take account of problems relating to education, housing and employment in the delivery of health services, as these

have implications for subsequent medicine therapy. For example, renal disease is very problematic in the Northern Territory among the Aboriginal and Torres Strait Islander populations, where the prevalence is approximately 100 times that of the wider population. One of the causes of renal disease is infection by *Streptococcus* bacteria. About every four years a new strain of *Streptococcus* emerges, creating a new epidemic of renal disease in Aboriginal and Torres Strait Islander communities. Also endemic in these communities is scabies, a tick that moves under the skin and produces itching. The skin is broken through scratching the itch. This skin break provides a portal of entry for *Streptococcus* into the bloodstream and to the kidneys. To treat the scabies, and therefore the renal disease, a population and environmental approach rather than an individual approach is needed. Treatment of one individual with an antibiotic will not provide a blanket cure. In one particular Aboriginal community faced with an epidemic of renal disease, a program was started to eradicate it. The local council organised a clean-up day on which everyone and everything were cleaned up. Clean-up days are now held four times a year in this community. As a result, there is little incidence of scabies or renal disease.

The issues outlined provide only a snapshot of some of the factors affecting the health and subsequent therapeutic regimens in Indigenous people. Obviously, for effective health promotion in medicine regimens in Indigenous people, health professionals must demonstrate empathy, tolerance and appreciation of the environmental, spiritual and community-oriented aspects of care.

CHAPTER KEY POINTS

- Pharmacology deals with the properties and characteristics of chemical agents used for medicinal or other purposes.
- Advertising of medicines can affect the medicine management activities of health professionals.
- Advertising can influence the medicinal activities of consumers.
- Over-the-counter preparations are available to consumers without a prescription, and often without the supervision of a health professional.
- The generic name of a medicine is the shortened, simplified version of the chemical name.
- The brand name is the trademark used by a pharmaceutical company to identify their preparation of a particular medicine.
- Generic prescribing means that a pharmacist can supply any formulation of a particular medicine.
- Generic substitution means that a pharmacist can supply any formulation of the medicine without referring back to the prescriber.
- Polypharmacy, which is a major problem for older people, involves the excessive or inappropriate use of medicines.
- The traditional beliefs and values of a particular culture influence an individual's perceptions and expectations about medicine therapy.