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Weight Management in a DSM framework

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Introduction

Australia presently spends in the order of \$830 million dollars on health costs which are directly attributable to obesity [1]. Further overweight/obesity is the leading cause of chronic disease and preventable deaths [2]. Currently overweight or obesity affects approximately 52% of Australian women and 67% of Australian men [1]. Although like many other developed nations, the Australian population is becoming bigger and heavier [3], recent reports suggest that Australia, based on current trends, will overtake America and have the greatest prevalence of overweight and obesity in the world within a decade [4]. In this situation, there are significant consequences for our population and for the nation, in terms of morbidity, mortality and health expenditure [4]

Overweight and obesity are key preventable risk factors for many diseases, particularly hypertension, cardiovascular disease and non-insulin-dependent diabetes. In addition, overweight and obesity increase the risk of morbidity from dyslipidaemia, stroke, gall bladder disease, osteoarthritis, sleep apnoea, asthma, and cancers of the breast, prostate and colon [5]. The personal cost of any of these conditions is high – quality of life is adversely impacted, and medicines and disease management equipment such as glucometers have an impact on disposable income [6]

Weight management is multifactorial with influences ranging from genetic through environmental and lifestyle factors. Key lifestyle factors in Australia include physical inactivity, ready availability of energy-dense foods, and inappropriate meal patterns [3], and of these, the energy density of foods is thought to play an important role. Energy density is defined by the “metabolisable energy per unit weight” of a food item [3], and is most affected by the water and fat content of the food. The fat content is a major contributor to energy density because its energy content is twice that of either carbohydrate or protein, and because high fat items tend to be low in fibre and water.

Take a moment to look at our two case studies as outlined in Table 1. At first glance Mr JW probably looks like “a heart attack waiting to happen”, whereas Ms MD possibly appears to be demonstrating good self-care, but as we will discuss later both could benefit from a chronic disease management strategy addressing weight control.

Measures of overweight and obesity – weight; BMI or WC?

Weight is a measure that our patients often use but weight is moderated by age, gender, and height such that someone who is 165 centimetres high may be overweight while another individual at 180 centimetres and the same weight may be underweight.

Body mass index (BMI) is increasingly being used but need not indicate central adiposity which is itself a risk factor for many diseases [7]. BMI is calculated as an individual's weight in kilograms (kg) divided by their height in meters (m) squared. Please refer to Table 2 for an indication of the risk of co-morbid disease states with weight.

Waist circumference (WC) is another measure which does detect central adiposity in a relatively non-intrusive manner [7]. The significance of WC is that it is a simple, inexpensive measure of risk for chronic disease states [8, 9].

The two latter measures are both feasible for use in a private consultation area of a pharmacy requiring only a tape measure, a ruled measure for height and a set of reliable scales. Additional items such as equipment to assess body fat are available but not necessarily required.

Issues with Obesity

Recognising and addressing overweight and obesity in early adulthood may reduce the risk of developing many chronic diseases – not just those which impact severely on mortality such as diabetes but also those that affect everyday quality of life and functional capacity such as arthritis. For those in whom a chronic condition is already established, even a modest weight loss can reduce symptoms and often the likelihood of complications. Lifestyle factors have an important role to play in weight management, especially but not limited to, physical activity and daily energy intake [10]

Chronic Disease State Management Framework

Although chronic disease state management has been introduced and applied to several disease states in earlier editions of this journal, a brief revision is timely. In November 2005 the Australian Health Ministers' Conference (AHMC) endorsed a National Chronic Disease Strategy. Key features of the strategy include an emphasis on a preventive health approach, disease self-management, and a more integrated and multidisciplinary service provision, with asthma, cancer, diabetes, cardiovascular disease, and musculoskeletal diseases being particularly targeted. At least four of these conditions are influenced by weight either as a risk factor, precipitating factor or as an opportunity to reduce the impact of the disease and/or its complications.

Whilst a chronic disease management framework is optimally suited to chronic diseases, such as asthma or diabetes, it is also ideal for those lifestyle choices which require long-term support such as smoking cessation or weight loss. If you are having difficulty visualising the chronic disease management mode of practice, it may help to think of it as an integration of pharmaceutical care and relationship marketing. In the pharmacy setting, relationship marketing refers to attracting, maintaining, and enhancing patient relationships to create mutual benefit for the pharmacist and patient.

Key features of the chronic disease management process include giving patients dedicated time in a private area of the pharmacy, with spaced contact over time. For most pharmacists and pharmacies, this will require formal appointments with patients. It also involves a patient education and support role, and this involves identifying needs and solutions or referring as appropriate. In weight management, it's important to review not only the quantity of food consumed, its energy density and the timing of food consumption, but also to consider the impact of beverages. Beverages are easily overlooked but can easily make a significant contribution to daily energy intake [3]. In Australia, it has been established that beverages contribute, on average, 16.3% of total daily energy intake. So remember to prompt patients' memories by asking about coffee, tea, hot chocolate in winter (milk and/or sugar or sugar syrups) and juices, iced coffee, milk shakes and soft drinks in summer.

Addressing overweight and obesity in a chronic disease management framework

Patients who are at risk of developing a chronic disease that is affected by weight need to be identified and a dialogue started. Then it's critical to look, together with the patient, at modifying lifestyle factors. A similar process is undertaken in those who have already developed a chronic illness, and with the proper information, motivation and support, health outcome gains are quite possible. Reference to Table 3 may prompt you to identify with the patient their key outcomes, and Table 4 provides a framework within which to approach weight management.

It is critical to appreciate with weight control that we are asking individuals to make changes in their habits and in their lives, and that these are often not at all easy to visualise and implement. Key principles in guiding the development of a strategy for weight control is to accentuate solutions not problems; to promote the positive benefits of healthy weight management; and to reflect no stigmatisation of patients who do seek help, but rather to reflect promotion of 'health at every size' [4]. Too many individuals express a wish to delay all lifestyle changes other than 'dieting' to achieve weight management because they are "too fat to exercise" yet it is apparent that physical activity in conjunction with healthy eating leads to long term weight loss and maintenance.

Consideration of our case studies

Firstly, let's consider Ms MD who lives with osteoarthritis. Her chronic condition – osteoarthritis – is estimated to affect the lives of 1.4 million Australians, with annual costs estimated to be approximately \$1.2 billion (<http://www.arthritisaustralia.com.au/surprise>). Osteoarthritis of the knee is strongly related to obesity, and even being overweight has been identified as preceding the development of the condition [11]. Weight reduction, especially loss of body fat, combined with increasing amounts of gentle physical activity have been established to lead to a reduction in pain and disability in osteoarthritis. So a review of Ms MDs lifestyle should applaud her generally healthy eating approach and her commitment to exercise but should consider her beverage intake and confirm that her personal trainer includes both cardiovascular and weight training in her exercise program. Adding regular walking, tai chi programs for arthritis or water aerobics may further assist with weight loss, mobility and pain management.

Mr JW poses more of a challenge, however his chronic disease states are also weight dependent. As a diabetic, he would benefit from a more even and regular spacing of his meals, and may also find the use of a food diary beneficial. A food diary records everything that he eats or drinks for a specific period of time and makes apparent those food choices that he is actually making. In addition, some gentle walking would be useful to increase his energy expenditure. As his health and fitness are reviewed, a referral to a dietitian or to a sports practitioner with experience with diabetic patients may well be considered necessary. Support and motivation can be engendered by patient education, goal setting, and problem solving strategies [2].

Mr JW will also benefit from some disease state management for his diabetes and at his subsequent appointments, pharmacists could address his understanding of blood glucose levels, blood glucose testing, the glycaemic index and load of foods and issues such as coping with sick days can be explored.

Is Chronic Disease Management YOUR USP?

So what is a USP? Well it is your unique selling point and it distinguishes what is different about your pharmacy. Or it may be conceptualised as what does your pharmacy do differently and presumably better than another pharmacy?

In this time of a chronic disease “epidemic” and an aging population, why not incorporate chronic disease state management in your pharmacy? It is very customer focussed, being based on relationship marketing principles.

The Fourth Community Pharmacy Agreement has provided substantial funds to pilot diabetes and asthma disease state management in community pharmacies (<http://www.health.gov.au/internet/wcms/publishing.nsf/Content/ppsac-pps>). To find out more information, including the remuneration that pharmacists will receive during the pilot diabetes program, please visit this site [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/C8914699C0CDAC18CA2572B9001F33FC/\\$File/qadp.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/C8914699C0CDAC18CA2572B9001F33FC/$File/qadp.pdf) . As pharmacists hopefully demonstrate their capacity to manage one or more chronic disease states, then it is likely that the range of services attracting payments will increase.

Summary

In Australia, we have an aging and increasingly overweight and obese population, and it is estimated that the costs to the community of treating diseases which could be delayed or avoided by weight control will at least quadruple by 2051 [6].

Without being intrusive or discourteous, pharmacists and their staff could assist their patients to avoid or delay weight-related chronic diseases and their complications by offering weight management in a chronic disease management framework but with a preventative approach. Leaflets or posters, for example in the waiting area may stimulate an approach from a patient, or inquiries as to diet may initiate a discussion in a counselling scenario. It’s crucial to appreciate that certain health protective behaviours such as weight control or smoking cessation fit into the framework and time frames of chronic disease management.

Pharmacists do, of course, have a role to play in chronic disease self-management by ensuring that patients have a basic understanding of their condition, their medications (including not only dose, form and frequency but also storage and administration), sources of support such as patient support groups, and most importantly the fundamental diet and lifestyle changes that may be required.

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Table 1. Case study of Mr JW and Ms MD

| Mr JW | Ms MD |
|--|---|
| <p>Mr JW is a 57 year old male with type II diabetes mellitus and hypertension. He weighs 100kg and is 165 cm tall. His HbA1c readings are consistently in the range of 7-9. He undertakes no formal exercise program and eats frozen meals purchased from the supermarket, often misses breakfast and frequently “just grabs something” for lunch. He is often tired, “catches everything going around” and has very dry skin on his lower legs.</p> | <p>Ms MD is a 57 year old female with osteoarthritis affecting her right knee. She weighs 90kg and stands 175cm tall. She regularly eats breakfast, eats fruit and a salad sandwich for lunch, and cooks a meal for dinner. However she loves hot chocolate in the cooler weather and regularly consumes two large serves daily. She does go to the gym twice a week and meets with a personal trainer for a new program once a month. In the cold weather, her arthritis is giving her a lot of pain.</p> |

Table 2. Body Mass Index and risk of co-morbidities

| BMI | Classification | Risk of co-morbidities |
|----------------------|-----------------------|-------------------------------|
| | | |
| <18.50 | Underweight | Low |
| | | |
| 18.50 - 24.99 | Normal range | Average |
| | | |
| >25.00 | Overweight: | Varies |
| | | |
| 25.00 - 29.99 | Pre-obese | Increased |
| | | |
| 30.00 - 34.99 | Obese class 1 | Moderate |
| | | |
| 35.00 - 39.99 | Obese class 2 | Severe |
| | | |
| >40.00 | Obese class 3 | Very severe |

Source: <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pubhlth-strateg-hlthwt-obesity.htm#defining>

Table 3. Goals for weight management

| Goals to suit chronic disease management and weight control |
|--|
| 1. Optimal health for patient |
| 2 Reduction of disease risk or risk of complications. |
| 3. Long term weight control |
| 4. Attain and maintain optimal nutritional status |
| |

Table 4. Weight management in a chronic disease management framework

| Intervention | Rationale |
|---|--|
| <p>Introduction to chronic disease management and the services and support offered by your pharmacy. Identify personal experiences; perceptions and goals for management of weight Make the next appointment – usually the following week</p> | <p>Many individuals do not consciously link their weight to being risk factors for chronic diseases, or to worsening the morbidity and mortality experiences of existing chronic diseases.</p> |
| <p>Start with calculation of BMI or record waist circumference and discuss the risk factors applicable Investigate patient’s perceptions and beliefs about weight Suggest keeping a food and beverage diary till the next visit– Referral if required, for example if dietary choices or exercise present any concerns Discuss the role of pedometers as evidence of opportunistic exercise. Irrespective of referral, make the next appointment.</p> | <p>It’s important that patients actually see overweight/obesity as relevant to themselves. Many patients when asked to guess their weight, will seriously under-estimate – they may also over-estimate their height so actually measuring or calculating enables them to realise that they are at risk. The diary and pedometer make salient to the patient just how little exercise they do get and just how much they do eat OR how energy dense the small amount of food they do eat actually is.</p> |
| <p>Measure waist circumference or calculate BMI. If relevant to a risk factor or disease state, measure and record blood pressure Review the food diary and pedometer steps for each day. Discussion and identification for strategies for change that are appropriate for this patient – referral if required to psychologist. Irrespective of referral, make the next appointment</p> | <p>Change is often difficult to cope with and manage, and understanding the process and addressing likely “roadblocks” can assist patients to form realistic and achievable goals Regular contact provides motivation</p> |
| <p>Measure waist circumference or calculate BMI. If relevant to a risk factor or disease state measure and record blood pressure Discuss with the patient their experiences with other health practitioners to whom you may have referred them. Refer to GP for health assessment if not already regularly attending. Make the next appointment (MNA)</p> | <p>Regular contact provides motivation. Discussion of other health practitioner’s recommendations makes those recommendations salient once more to the patient, and enables pharmacists to discover any erroneous beliefs held by the patient.</p> |
| <p>Measure waist circumference or calculate BMI If relevant to a risk factor or disease state measure and record blood pressure Discussion of role, function and specific requirements of the body for specific nutrients and for exercise. If appropriate refer to a gym that offers programs for not only weight loss but other chronic disease states as your patient may need to be guided in his/her choices by the limitations of a co-morbid disease state. MNA</p> | <p>Regular contact continues to maintain motivation, and allows the patient a dedicated and private time to ask questions. It also sequentially introduces new innovations or health practitioners whilst keeping the on-going contact with the pharmacist the patient knows and trusts. The patient is also developing self efficacy – the recognition that there are solutions to weight management, AND they are capable of adopting those relevant to themselves</p> |
| <p>Measure waist circumference or calculate BMI If relevant to a risk factor or disease state measure and record blood pressure Identification of any adherence issues and referral to other member of the patient care team as relevant MNA</p> | <p>There are many causes of non-adherence to lifestyle recommendations and simple strategies can often assist patients e.g. change in the time exercise is planned; shopping after not before a meal and so forth</p> |
| <p>Measure waist circumference or calculate BMI If relevant to a risk factor or disease state measure and record blood pressure Verify self-management outcomes, using qualitative (how individual feels and is coping) and quantitative measures (e.g. waist circumference or BMI. Support and reinforce, or refer as required if targets are not being achieved</p> | <p>Continuity of care concept guides this stage with key factors: ready access; interactions with other healthcare providers; communication and personal responsibility</p> |

Objectives

- 1. Interpret measures of obesity such as BMI and WC**
- 2. List possible contributing factors to the development of overweight and obesity**
- 3. Describe treatment goals for overweight and obese persons**
- 4. Describe appropriate forms of dietary intervention and exercise treatment**

MCQs

Multiple choice questions – correct in bold

1. Which of the following provide the best answer to this question, “Why do patients need to adopt self management of their weight control?”
 - a) They are the people who choose the food and put it in their mouths so no one else can do it for them
 - b) No one health practitioner can possibly manage all the issues in weight control so patients need to direct their own care
 - c) There are currently no cures for diabetes and they often need continuous medication usage which takes up their visits to the medical practitioner so the rest falls to them – they ‘fall through the cracks’ in the system
 - d) **Many of the activities which contribute to better weight control and health outcomes are activities that need to be undertaken by the patient – such changes to diet and activity levels**

2. Which of the following best describes patients’ issues with weight control?
 - a) That most of the issues relevant to weight management are out of their personal control
 - b) **Recognising that they have an issue that needs resolution; sometimes a lack of knowledge; and often a lack of self-efficacy**
 - c) That weight control like any other disease needs a doctor’s prescription and an appropriate but expensive medicine
 - d) Frustration; repeated warnings about their health; yet all their “big-boned” relatives were the same so its genetic and nothing can be done

3. Which of the following best describes pharmacist activities which might assist self management in a patient who is overweight?
 - a) Scheduling an initial meeting and providing the patient with a contact schedule; food diary, pedometer and leaflets and fact cards on weight management
 - b) Checking every meeting on their waist circumference or BMI and consistently scheduling the next meeting
 - c) **Discuss their feeling about their weight; identifying modifiable behaviours; identifying their need for information and resources; providing information such as relevant Self-Care fact cards and referrals to relevant healthcare professionals, maintain regular contact; record progress**
 - d) Listening sympathetically each time as they discuss their feeling about their weight and their barriers to better dietary choices and exercise; measuring waist circumference or calculating BMI

4. Which of the following provide the best answer to this question, “Why do Australians, as a group, need to adopt weight control?”
- a) We are becoming greater consumers of junk food and will end up almost as bad as the USA if we don't
 - b) If they did not, the health care budget would explode
 - c) **Currently, overweight or obesity affects approximately 52% of Australian women and 67% of Australian men, and recent reports predict that Australians will have the greatest prevalence of overweight and obesity in the world within a decade**
 - d) There are currently no other strategies to prevent chronic diseases
5. Which of the following best describes those conditions for which overweight/obesity serve as risk factors?
- a) **Hypertension, cardiovascular disease and non-insulin-dependent diabetes; dyslipidaemia, stroke, gall bladder disease, osteoarthritis, sleep apnoea, asthma, and cancers of the breast, prostate and colon**
 - b) Cirrhosis of the liver; reflux oesophagitis; influenza; sore throat
 - c) Pain; hypertension; inflammatory bowel disease; headaches
 - d) Pain; cirrhosis of the liver; bulimia; anaemia; osteoarthritis of the hands