The emergence of "lifestyle medicine" as a structured approach for management of chronic disease

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ABSTRACT

- Chronic diseases with a lifestyle-based aetiology currently make up a significant proportion of primary care consultations, but management often falls between the demands of public and clinical health.
- A modified clinical approach, based around the concept of "lifestyle medicine", helps fill the gap by adding behavioural, motivational and environmental skills to conventional medical practice.
- When used in a multidisciplinary setting, lifestyle medicine offers potential cost and effectiveness benefits, which are beginning to be realised.

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Around 60%–70% of all primary health care visits in developed countries are for lifestyle-based (and therefore preventable) diseases.[1] Although lip service is often paid to prevention,[2] governments of all persuasions have largely neglected the funding of real preventive action. Hence, while not giving up on Geoffrey Rose's epidemiological dictum that small changes in large populations are likely to be more effective than large changes in small numbers,[3] it is evident that a change is needed in the management of modern chronic diseases. This new approach needs to bridge the gap between public health, with its preventive and population-based aims, and the treatment and patient-centred focus of clinical practice. The advent of a modified clinical discipline — "lifestyle medicine" — offers a way to bridge this gap.

What is lifestyle medicine?

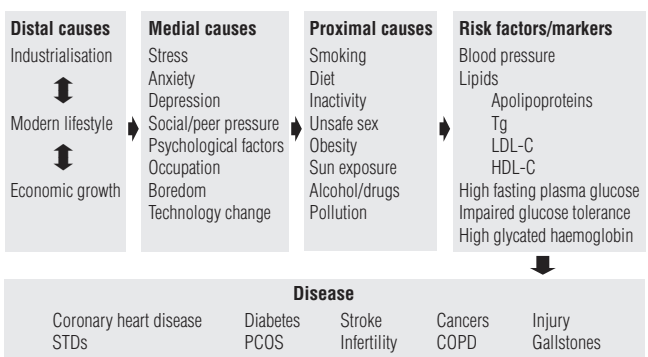
We have defined lifestyle medicine as "the application of environmental, behavioural, medical and motivational principles to the management of lifestyle-related health problems in a clinical setting".[4] The discipline involves the therapeutic use of lifestyle interventions predominantly in the management of chronic disease.

Lifestyle medicine is not meant to be an alternative to conventional clinical practice, but rather a means to address the health challenges posed by changes to lifestyle in the past three to four decades.

First developed in the United States,[5] lifestyle medicine is taught in specialist postgraduate medical training courses in at least three US universities (Harvard, University of Florida and Loma Linda). There are currently several specialist lifestyle medicine associations and a journal, the *American Journal of Lifestyle Medicine*.

The adoption of the Enhanced Primary Care (EPC) system in Australia,[6] which allows Medicare benefits for 13 allied health disciplines involved in the management of chronic disease, as well as enhanced benefits for general practitioners, provides a wider scope for lifestyle medicine than in the US. Although it is not without drawbacks,[7] the EPC system is evolving into an effective means of dealing with chronic diseases that do not easily remit under conventional pharmaco-medical management and that are the by-product of societal changes including improved standard of living and economic circumstances.

1 A hierarchy of causes of chronic disease[4]*



Tg = triglycerides. LDL-C = low-density lipoprotein cholesterol. HDL-C = high-density lipoprotein cholesterol. STD = sexually transmitted disease. PCOS = polycystic ovary syndrome. COPD = chronic obstructive pulmonary disease.

* From Egger et al. *Lifestyle medicine*. Sydney: McGraw-Hill Australia, 2008: 16. ◆

Defining real causality

Lifestyle medicine, like clinical practice, employs deductive reasoning but draws on a wider range of causal factors than is usually considered in a traditional clinical setting. Box 1, for example, shows that chronic diseases have risk factors and markers, which are often the focus of clinical intervention. However, these factors and markers have causes that can be "proximal", "medial" and "distal" to the disease. Pharmaco-medical treatments for chronic, lifestyle-related disease — while necessary and important — should not be accepted as a complete solution to the problem.

A more comprehensive approach to the management of chronic disease would consider not only risk factors, but also a range of antecedent factors from all levels of causality. Treatment would ultimately employ a combination of clinical and public-health interventions, which may not always seem intuitive. For example, population rates of obesity could be reduced by not only implementing personal weight-loss programs at the clinical level, but also highlighting the environmental effects of burning fossil-fuel instead of personal energy for transport.[8]

Several large-scale prospective studies have now shown the benefits of lifestyle change in preventing progression from prediabetes to type 2 diabetes,[9-11] with effects lasting for up to 20 years.[10] Cost-effectiveness has also been demonstrated.[12]

Processes in lifestyle medicine

Lifestyle medicine, with its concentration on several levels of causality in disease, differs in orientation to conventional clinical practice (Box 2). In particular, there is a requirement for the

2 Differences between conventional and lifestyle medicine approaches[4]*

Conventional medicine	Lifestyle medicine
Treats individual risk factors	Treats lifestyle causes
Patient is often a passive recipient of care	Patient is an active partner in care
Patient is not required to make big changes	Patient is required to make big changes
Treatment is often short term	Treatment is almost always long-term
Responsibility falls mostly on the clinician	Responsibility falls mostly on the patient
Medication is often the "end" treatment	Medication may be needed but as an adjunct to lifestyle change
Emphasis is on diagnosis and prescription	Emphasis is on motivation and compliance
Goal is disease management	Goal is primary/secondary/tertiary disease prevention
Little consideration of environment	Consideration of environment
Side effects are balanced by the benefits	Side effects are seen as part of the outcome
Referral to other medical specialties	Referral (also) to allied health professionals
Doctor generally operates independently on a one-to-one basis	Doctor is coordinator of a team of health professionals

* From Egger et al. *Lifestyle medicine*. Sydney: McGraw-Hill Australia, 2008: 4. ◆

patient to be more active in his or her own care. Because of the often large behavioural and emotional "cost" and commitment required to make lifestyle changes, a deeper understanding of motivational principles is needed, and the coordinating physician could use the expertise of allied health disciplines (Box 3). Yet there is little in the medical literature or at medical conferences to assist clinicians in understanding practical approaches to motivate patients. Funding for research programs remains heavily weighted in favour of pharmacological solutions. Motivational interviewing[13] is a relatively rare example of a non-pharmacological technique that is commonly used in clinical practice.

Medication, in the lifestyle-medicine paradigm, is seen more as an adjunct than an end treatment in care, and side effects are recognised as part of the outcome. Erectile dysfunction from antidepressant medication in middle-aged men, for example, can potentially exacerbate depression. Hence this effect should be weighed against the possible benefits of a lifestyle-change option such as exercise, for which a strong evidence base in managing depression exists.[14]

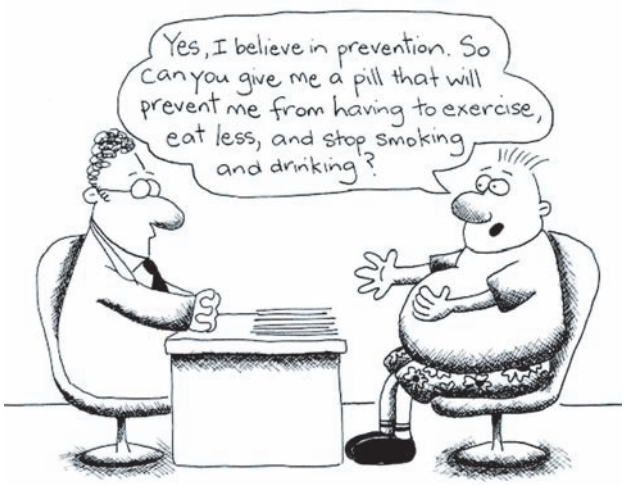
Many lifestyle behaviours that cause chronic disease seem to be closely linked in vicious cycles, and an underlying cause may be the low-grade systemic inflammation now identified as being associated with lifestyle-related diseases.[15] Inadequate sleep, for example, can lead to fatigue; fatigue to inactivity; inactivity to poor nutrition or overeating; and all of these factors can exacerbate obesity and depression, leading to metabolic syndrome, type 2 diabetes, sexual dysfunction and mood problems, and potential heart disease. Medication can help manage many of these problems, but, as discussed earlier, may also cause counterproductive side effects such as weight gain, exercise-induced myopathy,[16] and sexual dysfunction. All of these — the predisposing factors, cause, disease and treatment — make up the practice of lifestyle medicine, which, in an ideal world, would be supported by effective and sustained public health efforts.

Exercise and nutrition are the penicillin of lifestyle medicine; psychology the "syringe" through which these are delivered, currently in conjunction with specialists in each area.

In contrast to population and environmental interventions, lifestyle medicine focuses on individuals (and in some cases small groups), where interventions are typically administered in a primary care setting. Just as in any specialty area, there is a body of knowledge and skills that needs to be mastered, all of which are unlikely to exist in one practitioner. The involvement of different disciplines ensures a greater availability of these skills within a practising team.

The ambit of lifestyle medicine includes the management of obesity, sleep, mood states (anxiety, depression), addictions, sexual behaviour, skin health, oral and auditory health, pain, iatrogenic illness, and many types of injury. Typically, each of these conditions requires the input of a specialist discipline (eg, a dietitian, an exercise physiologist, a psychologist). However, a new generation of graduates from multidisciplinary allied-health vocational programs now being offered at several universities will change this in the future. The availability of non-medical specialties reduces the involvement required of general practitioners, who often lack the time to personally provide these services to their patients.

3 Lifestyle medicine requires patients to be more active in their own care[4]*



* From Egger et al. *Lifestyle medicine*. Sydney: McGraw-Hill Australia, 2008: 6. ◆

Future developments

A non-profit Australian Lifestyle Medicine Association (ALMA), with a charter to service all disciplines accredited under the EPC system, was inaugurated in 2008.

Evidence to date suggests significant cost benefits of lifestyle medicine,[12] but long-term prospective assessment is required. Meanwhile, lifestyle-related chronic diseases are unlikely to decrease in the near future. Hence, the prospects for a discipline of lifestyle medicine indeed appear healthy.

Competing interests

Garry Egger coordinates and Andrew Binns has contributed to a postgraduate Master of Clinical Science (Lifestyle-Medicine) program through Southern Cross University. Andrew Binns is the president of ALMA and Garry Egger is an ALMA committee member.

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