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CRITICAL ESSAY

Self-management of chronic conditions: the legacy of Sir William Osler

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INTRODUCTION

Chronic diseases, particularly cardiovascular disease (CVD), cancer, type 2 diabetes, and chronic respiratory disease, account for over 50% of all deaths throughout the world.[1] In 2002, CVD resulted in 17 million deaths, mainly from ischaemic heart disease and stroke, followed by cancer (7 million deaths), chronic obstructive pulmonary disease (4 million), and diabetes (1 million).[2,3] Epidemiology transitions in both rich and poor countries will only escalate these rates. With expanding urbanization, poor countries are inheriting the problems of the rich, including diets rich in calories and fats, sedentary behaviour, increasing exposure to urban stresses, and the harmful consequences of tobacco, alcohol, drug use, accidents, suicide, and violence. Poor countries are also coping with the double burden of a multiplying prevalence of chronic illness and the continuing weight of endemic infectious diseases. Rich countries are undergoing a different epidemiology transition with similar implications: the proportion of the population over the age of 60 years — with the highest prevalence of chronic disease — is increasing rapidly, and is projected to reach at least a third of the population in all currently developed countries over the next 50 years.[2] As a result, the global prevalence of all leading chronic diseases is increasing at an enormous rate, although the majority of new cases are occurring in developing countries.[3]

Morbidity associated with chronic diseases is thus a growing problem. Life expectancies of people with chronic illnesses have increased in developed countries and are increasing in developing countries, but so have the costs of medical care for chronic diseases. The development of effective treatments for infectious and acute illnesses, including HIV/AIDS and some forms of cancer, has turned some acute illnesses into chronic diseases that require lifetime self-management. The increasing prevalence of chronic disease and the increasing costs of healthcare create a huge array of expenses that will overwhelm the finite medical and personal resources of any given country. Any way in which the burden of chronic diseases — which usually persist for the remainder of the life of an individual — can be reduced is of value. Self-management, whereby individuals, in collaboration with healthcare professionals, assume greater responsibility for healthcare decisions, is one promising approach to improving outcomes and reducing healthcare costs associated with chronic diseases.

SELF-MANAGEMENT

Individuals with chronic illness inevitably bear responsibility for the management of their illness, including responsibility for

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executing complex medication regimens that may include acute (as needed) and daily (maintenance) medications, lifestyle changes that often involve modifying a number of difficult-to-change behaviours (e.g., diet and exercise), monitoring symptoms, and taking different actions depending on self-monitoring results. The last of these includes assuming responsibility for managing the effects of chronic disease on emotions, family, work, social relationships, and finances. Self-management refers to the involvement of individuals in the management of their chronic illness, and is more specifically defined as 'the individual's ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition'[4] (p. 179).

Self-management differs from the narrower concept of adherence in that self-management places greater emphasis on the patient's active role in decision-making, both inside and outside the consultation room. Self-management also addresses the wider spectrum of physical, emotional and psychosocial problems associated with chronic disease. Self-management is also dissimilar from disease management. Disease management, at its best, encourages healthcare professionals to use empirically validated decision algorithms and clinical interventions to standardize care for chronic diseases, while self-management emphasizes the patients' involvement in defining what problems will be addressed and what solutions will be considered by healthcare professionals. At its worst, disease management restricts care by shifting resources from healthcare providers to commercial providers of disease management programmes.[5]

As illustrated in the Figure, effective management of chronic disorders requires that patients: (1) possess the motivation, confidence and skills necessary to manage their condition; (2) are effective problem-solvers, capable of self-monitoring and adjusting self-management behaviours in response to objective (e.g. blood glucose) and subjective (e.g. symptoms) information about their condition; and (3) can successfully adapt self-management strategies to the constraints imposed by the unique social (e.g. competing time demands of single motherhood, disruption of social systems produced by divorce) and environmental (e.g. stressful workplace, lack of access to safe exercise facilities) factors that comprise the context of their daily life.[6] The healthcare system, the physician–patient relationship and the structure of physician–patient consultation need to reinforce one another in achieving these essential tasks of chronic disease management. Self-management is thus is associated with particular types of decisionmaking and physician–patient relationship.[5,7–10]

SHARED DECISION AND TREATMENT MODELS

Charles *et al.*[11] labelled three theoretical decision-making and treatment models as the paternalistic, the shared, and the informed. The informed model postulates that information transfer is the key contribution of the doctor to the decision-making process. Deliberation and decision-making are the prerogative of the patient. The adoption of this model is, in part, a reaction against the paternalistic model described below. The informed model has contributed to a crisis in confidence in US healthcare. David Mechanic, a leading medical sociologist, recently proclaimed, 'People want to feel a part of their health care. But they don't want to be abandoned to making decisions all on their own. When a doctor says, "Here are your options," without offering expert help and judgment, that is a form of abandonment'[12] (p. 16). Fortunately, for physicians and patients alike, some doctors are adopting a shared decision-making model in which physicians and patients work together to select treatment.[13]

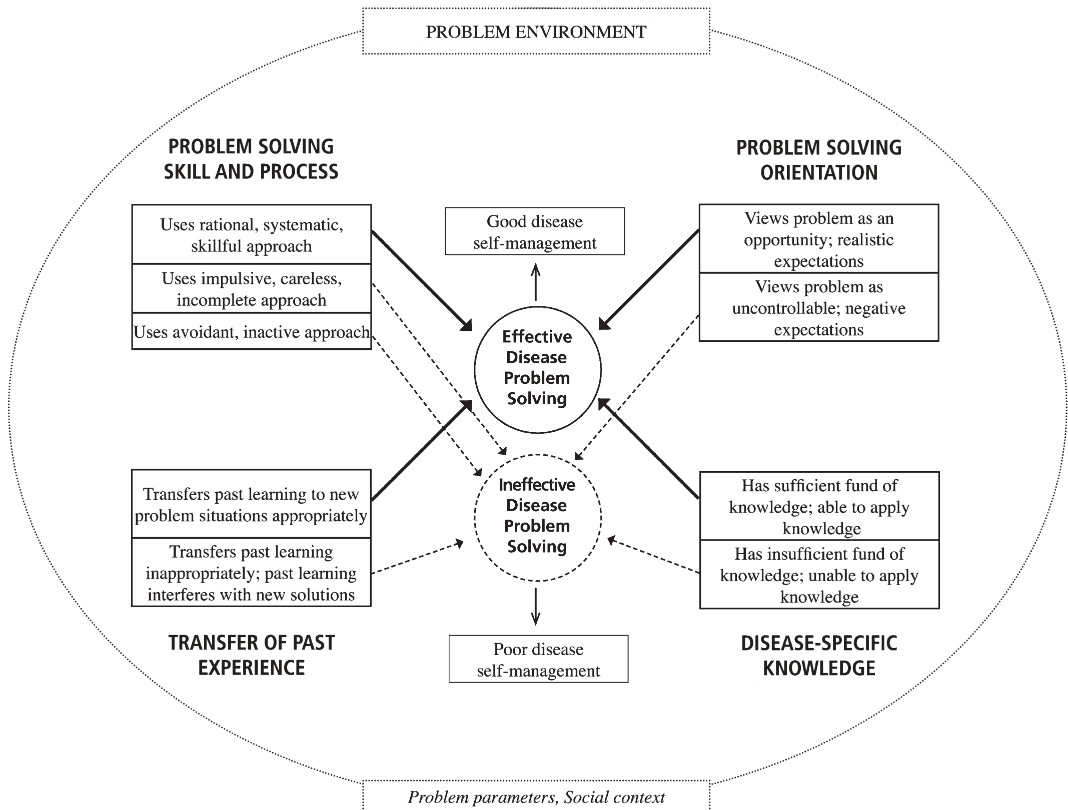

FIG. Expectancies, knowledge and problem-solving skills required for effective self-management of chronic disease. Adapted from Hills-Biggs.[6]

Paternalistic Model: the Legacy of William Osler

The characteristics of this model are well known. In its purest form, Charles *et al.*[11] suggest, the patient passively agrees to the doctor's choice of treatment. The assumption is that the doctor can make the best medical decision, which is assumed to be the best overall decision for the patient, and requires only relevant medical information to do this. Involving the patient in technical medical decisions for which they lack expertise would unnecessarily burden the patient and possibly compromise the medical care that they receive. The paternalistic approach, the most widely used model of medical decision-making, became entrenched in the healthcare system during the twentieth century, in part because of the immense influence of Sir William Osler.

Osler has been characterized as the 'quintessential physician of our time because of his literary legacy, scientific and clinical accomplishments, educational contributions, and influence on intra-professional accomplishments'[14] (p. xxxii). The publication in 1892 of his *magnum opus*, *The Principles and Practice of Medicine*, framed the practice of medicine at the beginning and throughout the twentieth century through 16 later editions of the book.[14,15] Osler's influence on succeeding generations is as a role model, characterized as 'the Oslerian tradition', a virtuous approach to life and medicine as modelled by Osler. It continues to serve as a standard of excellence and a model for the evolution of the medical profession and its practitioners. The contributions of Osler are enormous in the context of the twentieth century. His books focus on infectious

diseases because early death from infectious disease posed the primary health threat.[15,16] That fact that life expectancy at birth in the USA was 47.3 years in 1900 attests to the seriousness of this threat, while the life expectancy of 77.3 years in 2002 indicates the successful response to it.[17] Chronic diseases were assumed to actually be infectious diseases and thus of significance, or not infectious diseases and thus not a serious public health problem. Osler thus viewed arthritis as infectious disease, and asthma, diabetes and other chronic diseases as due to nervous influences. This cavalier attitude towards chronic disease is reflected in the assumption that most chronic diseases were neurotic problems rather than 'real' disease, and in quips such as 'the asthmatic pants into old age'. Osler's comments are justifiably credited as attaching a stigma to asthma and other chronic diseases that hindered medical research on chronic disease and lingers today in some patients, their families, and health professionals.[18] Osler, like his medical colleagues, underestimated the morbidity associated with chronic illness. This is understandable, given the lack of epidemiological data for chronic illness, at least until effective treatments emerged for different types of chronic illness.[15]

Today, Osler's teachings have been distilled into quotes, tags and aphorisms that provide guidance for the physician's life.[14,19] His remarks could be prescient: the comment that 'medicine is a science of uncertainty and an act of probability' remains true despite great technological advances.[14] Rarely were Osler's remarks aimed at patients or the general public; rather, they were directed primarily at physicians and, secondarily, at the medical personnel who assisted physicians. Unfortunately, Osler's often-paradoxical beliefs about patients continue to haunt efforts to manage chronic diseases. We highlight this aspect of Osler's legacy by discussing his influence in two inextricably related areas: medical education, and the role of physicians in managing chronic illness.

Medical education

As a long-term teacher in Canada, the USA, and the UK, as well one of four physicians recruited to establish the Johns Hopkins University Medical School, Osler had considerable influence on the medical curriculum of the twentieth century. The founders of the new medical school also conceived and founded the academic health science centre in the USA, a trend shortly followed by European and UK universities. The high standards set by such facilities and the steady evolution of the scientific basis of medical care stimulated growing public trust in medicine.[20]

Osler brought a carefully thought-out approach to teaching by introducing the 'natural method' of teaching medicine. The approach involved taking students out of lecture halls and amphitheatres and into hospital wards, not as observers but to be hands-on healthcare providers, learning medicine by treating patients.[14,19] He expounded the idea that 'The student begins with the patient, continues with the patient, and ends his studies with the patient, using books and lectures as tools, as means to an end. The student starts, in fact, as a practitioner, as an observer of the disordered machines, with the structure and orderly functions of which he is perfectly familiar … For the junior student in medicine and surgery it is a safe rule to have no teaching without a patient for a text, and the best teaching is taught by the patient himself'[21] (p. 238). This observation demonstrates Osler's paradoxical perception of patients. On the one hand, he advocated that physicians care for each patient individually and empathize with their suffering. On the other hand, patients were viewed primarily as disordered machines; it was the disordered machine that provided the text for teaching students to become physicians. In fact, it was not the patient but the disease that Osler thought should be the teacher.[14]

Role of physicians

Osler often sounds virtuous and humble in describing the physician's calling. He

repeated the mantra that 'Yours is a higher and more sacred duty'[14] (p. 68). However, he deified physicians by placing them on a pedestal in total command of medical care.[19] Osler emphasized that, at all times, physicians must be in control of medical encounters with patients. He warned physicians never to listen to a patient's criticism of another doctor, even if the physician had reason to believe that the criticism was true. Better to ignore the patient, perhaps to his or her detriment, then to possibly slander a colleague. Osler was typically uninterested in the observations and comments of patients; he dismissed the patient with a careful written list of symptoms as neurasthenic.[14] Patient reports were deemed irrelevant because their subjectivity threatened to contaminate observations of 'a professional almost totally emancipated from the bondage of error and prejudice'[14] (p. 69). Osler articulated and actively promoted a paternalistic model of healthcare, in which patients accept professional authority without question and are healed by complying with the doctor's prescriptions.

There are contradictions between what Osler said and what he did. He proclaimed that medicine is distinguished by its singular beneficence, but readily accepted that some physicians practised their craft mainly for money. Osler himself was not immune to the sirens of wealth. As his biographer concluded, 'He had a delightful bedside manner and inspired warm feelings of hope and confidence, but he gave individual patients very little of his time. He charged high fees, came to be chauffeured around in a flashy car, and regretted that champagne did not agree with him. Osler saw no reason why the tables of those physicians who had paid their dues with years of hard work and service should not be laden with cakes and ale.'[21] (p. 500). Osler's views on the entitlement of physicians to earthly wealth persist today.

Although modern editions of *The Principles and Practice of Medicine* are more patient-centred than Osler's versions, there remains a clear distinction between physicians and patients. As Bliss summarized, 'By the end of the twentieth century, ideas of patient empowerment and autonomy in clinical practice, as well as patient-centeredness in academic medical education, had gone to lengths that would have astounded Osler. Indeed, sometimes the search for new Oslers in medicine seems to reflect a desire to return to the good old days when we automatically deferred to the physician's authority, looking to our doctors for salvation. "Only believe, and the healing begins"'[21] (p. 500).

Shared Model

Shared decision-making presumes that there are two experts in the consultation room: the doctor, who knows best about medicine, and the patient, who is the expert in their own capabilities and preferences, and in the social and environmental supports for and barriers to the effective self-management of their disease.[11] An essential characteristic of this model is its interactional nature, in that the doctor and patient share all stages of the decision-making process in real time. In its purest form, there is a two-way exchange of information, in which both patient and doctor reveal treatment preferences, and come to an agreement about treatment. This approach assumes 'that both the patient and the doctor have a legitimate investment to the treatment decision; hence, both declare treatment preferences and their rationale while trying to build a consensus on the appropriate treatment to implement'[11] (p. 781). A challenge for doctors in the time-constrained consultation is to create an environment in which the patient feels comfortable in expressing his or her treatment wishes and, consequently, incorporating them into the treatment. A challenge for patients, particularly patients intimidated in medical settings or unprepared to assume an active role in medical consultations, is to learn to speak up. Overwhelmed patients seem as hungry for these conversations as are doctors. Patients are proud to be independent-minded consumers, but they also value the guidance of a caring doctor.[13]

DISCUSSION

Chronic illnesses present the primary challenge for healthcare in the twenty-first century. The rapidly growing flood of individuals with chronic illnesses, coupled with soaring costs of healthcare for each individual, threaten to overwhelm the Oslerian model of care, which evolved to meet the early twentieth-century challenge of controlling infectious disease. The emerging societal financial burden can be seen in projected US health spending, which is expected to jump from 15.3% of gross national product in 2003 to 18.7% by 2014.[22] The rising human burden can be seen not only in the 100 million individuals in the USA with chronic illness, but even more so in the increasing percentage of the US population with multiple unaddressed chronic disease risk factors who are waiting to join the flood of chronic disease patients. The US Medicare programme, which is about to confront the retirement of the 'baby boom' generation, is the front line in this battle. When it was instituted in 1966, the primary orientation of Medicare was the treatment of acute, episodic illness. This aim changed over time, as life expectancy increased. Currently, 83% of Medicare beneficiaries have at least one chronic condition, with expenditures and the probability of an adverse outcome increasing with the diagnosis of each additional disease. Anderson highlighted the problem: 'Any policy maker who is considering the modernization of Medicare must recognize that the 23 percent of beneficiaries with five or more chronic conditions account for 68 percent of Medicare spending. In addition, the treatment of these beneficiaries is likely to remain a high-cost item until they die, since every year they see an average of 13 physicians and fill an average of 50 prescriptions'[23] (p. 305).

It is now widely recognized that the US healthcare system has failed to adapt to the primary medical challenge of the twenty-first century. Any coherent response to this challenge will not only demand system-level changes in how care is organized and in existing financial and professional incentives, but will also require changes in medical education and in the physician–patient relationship to reflect the very different role that the patient plays in managing acute *v.* chronic illness. Unfortunately, we cannot just wait for a twenty-first-century Osler to emerge and fundamentally reform healthcare in the way that Osler reformed nineteenth-century healthcare.

Effective medical management of chronic disorders is contingent on effective self-management, and thus requires not only drugs and information, but also the necessary elements for effective self-management enumerated above and illustrated in the Figure. The healthcare system, the physician–patient relationship and the structure of physician–patient consultation need to reinforce one another in achieving the essential task in chronic disease management: creating a knowledgeable and empowered health partner. (The very term 'patient' is so encrusted with the Oslerian tradition that it is inseparable from notions of the passive 'patient' role, compliance *v.* non-compliance, and other unhelpful concepts. The term 'health partner' better conveys the role that those afflicted by chronic diseases need to play in the management of their chronic illness and overall health.)

A healthcare partnership based on shared decision-making and planned medical consultations, in which the chronic disease patient is encouraged to collaborate with their physician–partner, as they must to manage their illness on a daily basis, will facilitate effective self-management. Conversely, a physician–patient relationship based exclusively on paternalistic or informed models of decision-making, in which the patient is a passive recipient of self-care information and instruction, is unlikely to encourage effective self-management. The type of relationship that health partners have with their physician and the way in which the medical consultation is structured provide a more powerful lesson

about chronic disease management than does the physician's words or self-care instructions. To borrow from Marshall McLuhan, the medium is the message.

A healthcare system that provides resources and support for physicians and allied healthcare professionals to adopt the new roles that are required when successful medical treatment is contingent on effective self-management is needed. Financial and professional incentives will need to be aligned so as to encourage physicians and other healthcare professionals to adopt new roles, rather than discouraging them from doing so. Pioneering self-management training programmes currently in use may be discontinued when they effectively reduce hospital admissions and shorten hospital stays, thereby reducing income to the local healthcare provider.[24] Medical education will also need to give as much weight to the theory, technique and practice of behaviour change as to the cardiovascular system or the practice of antibiotic drug therapy. An internship rotation in behavioural medicine needs to be as important as rotations in neurology or obstetrics. Medical education must move beyond 'disease as teacher', as espoused by the Osler model, to include health partners as teachers, who provide not only information about diagnostic signs and symptoms, but, equally important, diagnostic information about their readiness and needs as self-managers (including the variables illustrated in the Figure).

Kleinke[25] correctly notes that the term 'healthcare system' when applied to healthcare in the USA is an oxymoron. No systematic or unified system exists to encourage optimal healthcare, let alone to persuade people to take responsibility for their health and to encourage effective self-management of chronic illness. However, the chaos that is healthcare may force baby boom retirees with chronic illness to borrow a page from Osler, take control, and demand to be partners with their healthcare providers. It may also precipitate a financial crisis that generates the political will for change. In the meantime, there is much that healthcare providers and local healthcare systems can do to form healthcare partnerships with their clients and facilitate, rather than undermine, the effective self-management of chronic illness.

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