

Multimorbidity: Making the Case for an End to Disease-Specific Rehabilitation

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Multimorbidity is a common global problem, seen with increasing prevalence among middle-aged Canadians compared with older adults.¹ Patients presenting with multimorbidity account for 78% of primary care consultations.² The burden of multimorbidity is expected to increase further because more than half of those with multimorbidity are aged 65 years or younger.³ Compared with people with one chronic condition, people with multimorbidity have a greater risk of functional decline,⁴ premature death, and admission to hospital with an increased length of stay.^{5,6}

It is important to distinguish between comorbidity and multimorbidity, and the difference goes beyond semantics. In fact, in 2018 these two terms became separate Medical Subject Headings.⁷ The commonality between the two terms is the occurrence of more than one chronic condition in the same person. The difference is whether one condition holds priority or importance.⁸ *Co-morbidity* is defined as “the combined effects of additional conditions in reference to an index disease.”^{8(p. 143)} For example, in a pulmonary rehabilitation setting, the index condition is a lung disease such as chronic obstructive pulmonary disease, but the patient may also have diabetes, hypertension, and osteoarthritis. In contrast, *multimorbidity* is defined as “the co-occurrence of multiple chronic conditions within the same individual,”^{8(p. 143)} and no single condition holds priority.

Assessing multimorbidity is complex and requires using a multidimensional model to consider the physiological, functional, social, environmental, and personal factors that contribute to the multiple health problems.⁹ The *International Classification of Functioning, Disability and Health* framework is one model that can guide the assessment and treatment of individuals with multimorbidity.¹⁰ Unfortunately, however, there is a lack of clinical

guidelines that actively take into account the challenges of multimorbidity in the clinical setting. A review of 10 common clinical practice guidelines (CPGs) revealed that only a few adequately addressed issues related to elderly patients with multimorbidity.¹¹ Most CPGs focus on an index disease rather than on the patient. Using multiple disease guidelines is also not appropriate for people with multimorbidity because there are potential interactions among drugs, multiple conflicting treatments, and increased burden for the patient.¹² Thus, current CPGs are inadequate for guiding treatment decisions in individuals with multimorbidity.

Exercise is one approach that can combat the effects of sedentary behaviour and multimorbidity, a condition that requires the expertise of an interdisciplinary team. Exercise improves cardiovascular health, balance, muscle strength and endurance, energy expenditure, and insulin resistance, and it may reduce tumour growth.¹³ In addition, it can effect numerous improvements in mental health (anxiety and depression) and health-related quality of life.^{14,15} Clinicians have used exercise to treat a variety of chronic conditions, and CPGs include it for different chronic conditions such as osteoarthritis, cardiac and pulmonary disorders, and depression.^{16–19} The effectiveness of exercise in treating 26 discrete conditions and preventing 35 chronic conditions suggests its potential value in preventing and improving the detrimental effects of multimorbidity.^{13,20}

Although using exercise to treat multimorbidity is not yet standard clinical practice, evidence suggests that this is warranted when a multi-modal, multidisciplinary team-based approach is used.²¹ More sedentary behaviour is associated with an increase in the number of chronic conditions, and more than 50% of this association is explained by disability and limited mobility.²²

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Physiotherapy Canada 2020; 72(1); 1–3; doi:10.3138/ptc-72-1-gee

Moreover, the anti-inflammatory effects of exercises are well known, and because so many chronic conditions are associated with systematic inflammation (cardiovascular disease, diabetes, cancer), implementing effective exercise prescriptions for this subgroup may result in wide-ranging benefits.²³

Understanding the comprehensive benefits of exercise is an important first step, one that rehabilitation professionals know well. However, to effectively implement an “exercise is medicine” regime to manage multimorbidity, a change to the current model of disease-specific rehabilitation is needed. Such a change is challenging because little is known about how to effectively treat multimorbidity.²⁴ A 2016 Cochrane review found that among a mix of interventions reviewed, those that target populations with specific combinations of conditions and address specific problems such as functional difficulties may be more effective.²⁴

This research then suggests that shifting toward a rehabilitation model, which is focused on enhancing activity levels and improving functional limitations using a common exercise approach, and shifting away from one siloed by diagnosis, which focuses only on disease-specific outcomes, is a future direction for rehabilitation professionals. In addition to rehabilitation interventions that focus on exercise and physical activity, those that include education and a strong therapeutic alliance are known to enhance the effects of treatment.²⁵ At a systems level, if rehabilitation professionals are able to address multimorbidity, thus improving overall health, instead of focusing on one disease at a time, they may be able to reduce the burden of ineffective treatments for multimorbidity. Patients will benefit from a reduced burden of multiple health care provider visits and from being empowered by being able to manage their own care, as highly recommended by the World Health Organization.²⁶

Exercise programmes can be developed on the basis of patients’ impairments, and implementation can be scalable using aerobic (varying type, frequency, intensity, duration) and strength (large muscle groups, varying repetitions and forms of resistance) parameters. A recent systematic review of exercises for 26 separate conditions has summarized exercises by type, intensity, and frequency, thus enabling therapists to identify common exercises across conditions.²⁷ Safety and appropriate pre-screening are required and are a priority when facing unique challenges in patients with multimorbidity.

A consistent message to patients with chronic conditions about exercise is needed: (1) exercise is the key to maximizing health and function; (2) it is the rule, not the exception, and can be achieved safely; and (3) some is good, more is better.²⁸ Instead of system- or disease-specific rehabilitation, multimorbidity rehabilitation may be more appropriate, using a modified structure that accommodates all conditions and that can be used in all

rehabilitation settings.²⁹ Studies establishing the safety and feasibility of multimorbidity rehabilitation compared with a disease-specific rehabilitation programme in people with multimorbidity are emerging.²⁹ Larger trials are now warranted to establish effectiveness.

Given the rising prevalence of multimorbidity, particularly among middle-aged people; the associated health care burden; and the current challenges facing effective treatment, it is imperative that physiotherapists receive the appropriate training in assessing multimorbidity and providing considerations for treatment. Physiotherapists are specialists in rehabilitation and exercise and are therefore well placed to be leaders in changing the model of care to address this significant health care problem; this change will benefit patients, practitioners, and the system overall.

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