JOURNAL OF MULTIMORBIDITY & COMORBIDITY

Editorial

Journal of Multimorbidity and Comorbidity
Volume 11: 1–3

DOI: 10.1177/2633556521993993
journals.sagepub.com/home/cob
SAGE

Comorbidity versus multimorbidity: Why it matters

Christopher Harrison[1], Martin Fortin[2], Marjan van den Akker[3,4,5], Frances Mair[6], Amaia Calderon-Larranaga[7], Fiona Boland[8], Emma Wallace[8], Bhautesh Jani[6] and Susan Smith[8]

The 'Journal of Comorbidity' is changing its name to the 'Journal of Multimorbidity and Comorbidity'. This may seem redundant, as many see 'comorbidity' and 'multimorbidity' as interchangeable terms. We believe it is important to highlight the distinction given the differences in how healthcare systems view patients with multiple chronic conditions (MCCs), and the important differences that arise in research and intervention development for these patients.

In 1970, Feinstein first coined the term 'comorbidity' to describe 'Any distinct additional entity that has existed or may occur during the clinical course of a patient who has the index disease under study'.[1] From 1976,[2,3] the term 'multimorbidity' was increasingly used by health researchers to describe patients with MCCs. Due to the growing ambiguity around the use of the terms comorbidity and multimorbidity, in 1996 van den Akker et al. suggested clear definitions for both terms.[4] They suggested that comorbidity be defined according to Feinstein's original definition and multimorbidity be defined as 'the co-occurrence of multiple chronic or acute diseases and medical conditions within one person'.[4] In 2010, Boyd and Fortin provided a simpler definition of multimorbidity: 'the co-existence of two or more chronic conditions, where one is not necessarily more central than the others'.[5]

Healthcare delivery

The distinction of whether a patient with MCCs has an index disease under study may seem inconsequential. However, it is important because it reflects the way different parts of the healthcare system view and interact with patients who have MCCs. The concept of comorbidity is more useful in secondary and tertiary care settings, which have traditionally been structured around diseases or body systems, while the concept of multimorbidity is more useful in a primary care or other generalist setting, which can easily change focus according to patients' priorities. For example, a patient with diagnosed chronic kidney disease, Type 2 Diabetes and hypertension, when seeing their nephrologist is considered by the specialist to have chronic kidney disease with comorbidities of Type 2 Diabetes and hypertension. When seeing their endocrinologist, they are considered to have Type 2 diabetes with comorbid chronic kidney disease and hypertension. However, a primary care physician or other generalist such as a geriatrician would view the patient as having multimorbidity as they provide holistic care that is not determined by the presence of any specific condition and focuses on the patient's presenting symptoms, preferences and priorities for their healthcare.

[1] Menzies Centre for Health Policy, Sydney School of Public Health, University of Sydney, Sydney, New South Wales, Australia
[2] Department of Family Medicine and Emergency Medicine, Universite de Sherbrooke, Sherbrooke, Quebec, Canada
[3] Institute of General Practice, Goethe University, Frankfurt, Germany
[4] Department of Family Medicine, School CAPHRI, Maastricht University, Maastricht, The Netherlands
[5] Academic Centre for General Practice, Department of Public Health and Primary Care, KU Leuven, Belgium
[6] General Practice and Primary Care, Institute of Health and Wellbeing, University of Glasgow, Glasgow, UK
[7] Aging Research Centre, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet and Stockholm University, Stockholm, Sweden
[8] HRB Centre for Primary Care Research, Department of General Practice, Royal College of Surgeons, Dublin, Ireland

Corresponding author:
Christopher Harrison, Menzies Centre for Health Policy, Sydney School of Public Health, University of Sydney, Sydney, New South Wales 2006, Australia.
Email: christopher.harrison@sydney.edu.au

The concept of comorbidity may be more useful for the development of biomedical knowledge (including pharmaceutical research). Most medications and treatments developed are targeted at treating a specific condition or groups of similar conditions, though even in disease targeted trial populations, patients with multimorbidity are generally underrepresented.[6] It can also be appropriate in clinical practice to focus on single conditions, when this is the patients' main priority or source of symptoms, for example, a patient with existing chronic conditions develops severe heart failure which, due to its seriousness, becomes the focus of care, while comorbidities may influence treatment decisions.[7,8]

While the concept of comorbidity may be useful to specialists and some biomedical research, its disease-centric focus helps cement many health care systems' single disease 'siloed' structure. This siloed structure may cause fragmented care for patients with MCCs as different parts of the health system view the condition they are treating as the primary condition. Multimorbidity is a more helpful way to view and assess patients with MCCs because its focus is on the patient as a whole, aligning with the concept of patient-centred care. The patient's experience and priorities, as well as their overall treatment burden, are the primary focus with no condition being prioritised over any other.

Comorbidity versus multimorbidity in research

The distinction between comorbidity and multimorbidity is also important in research design, especially when it comes to patient sampling. In many studies, patients are selected as study participants based on whether they have a specific diagnosed condition, with their comorbidities being recorded. While it is true that the patients with comorbidity in these studies also have multimorbidity, one of the common errors for secondary analyses of these data sets is to assume that these patients with MCCs are representative of all patients with multimorbidity. This is clearly not the case as the sample would not include multimorbid patients who do not have the index condition. The representativeness of the sample is further skewed because certain types of conditions are likely to cluster (as some conditions may share the same risk factors or underlying physiologic mechanism), meaning that not only will the index condition be over represented in the sample, but so will conditions that often co-occur with the index condition. Sampling and consideration of adequate sample size is particularly important when studying the genesis and shared pathways among concurrent diseases. Unlike the study of comorbidity, which has dominated most of the aetiological research so far, a focus on multimorbidity enables the exploration of potentially causal associations among all coexisting conditions at once. This can identify common patterns and susceptibility to clusters of co-occurring diseases, whether these are genetic, biologic, and/or linked to the physical or social environment

Developing interventions

One of the main challenges for health systems and researchers is the development and evaluation of interventions to improve outcomes for patients with MCCs. Here again the distinction between comorbidity and multimorbidity is critical. Interventions designed for comorbidity can specifically target the comorbid conditions and examine disease-specific outcomes, whereas, interventions for multimorbidity must have a more generic focus and outcomes can be challenging to identify.[9] A recently developed core outcome set provides some guidance in this area.[10] The clear reporting of the conditions included in definitions used for both comorbidity and multimorbidity is also important to facilitate a consideration of generalisability of interventions to other patient groups and settings.

Journal of Multimorbidity and Comorbidity

The name comorbidity was initially chosen for the journal for its simplicity, comorbidity's importance for treatment of specific conditions and acknowledgement of comorbidity's historical pre-eminence as a construct.[11] The addition of multimorbidity to the journal's name changes none of this, but it does acknowledge that this journal is the natural home for multimorbidity research. Having both concepts highlighted in the journal's name emphasises that they are distinct concepts in research design, intervention development and healthcare delivery. Our journal is committed to publishing high quality research on both comorbidity and multimorbidity. We look forward to reporting the growing evidence that addresses critical questions that will aid our understanding of both comorbidity and multimorbidity and improve health outcomes for those millions living with MCCs.

ORCID iDs

Christopher Harrison https://orcid.org/0000-0002-8769-6877
Martin Fortin https://orcid.org/0000-0002-9874-3771
Marjan van den Akker https://orcid.org/0000-0002-1022-8637
Frances Mair https://orcid.org/0000-0001-9780-1135
Amaia Calderon-Larranaga https://orcid.org/0000-0001-9064-9222

References

1. Feinstein AR. The pre-therapeutic classification of co-morbidity in chronic disease. *J Chronic Dis* 1970; 23: 455–468.
2. Brandlmeier P.Multimorbidity among elderly patients in an urban general practice. *ZFA (Stuttgart)* 1976; 52: 1269–1275.

3. Franke H, Gall L and Chowanetz W. The so-called aging heart in 50- to 100-year-old subjects. *Z Kardiol* 1976; 65: 945–963.
4. van den Akker M, Buntinx F and Knottnerus JA. Comorbidity or multimorbidity. *Eur J Gen Pract* 1996; 2: 65–70.
5. Boyd CM and Fortin M. Future of multimorbidity research: how should understanding of multimorbidity inform health system design? *Public Health Rev* 2010; 32: 451–474.
6. Hanlon P, Hannigan L, Rodriguez-Perez J, et al. Representation of people with comorbidity and multimorbidity in clinical trials of novel drug therapies: an individual-level participant data analysis. *BMC Med* 2019; 17: 201.
7. Boyd CM, Darer J, Boult C, et al. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA* 2005; 294: 716–724.
8. Fortin M, Soubhi H, Hudon C, et al. Multimorbidity's many challenges. *BMJ* 2007; 334: 1016–1017.
9. Smith SM, Wallace E, O'Dowd T, et al. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. *Cochrane Database Syst Rev* 2016; 3: CD006560.
10. Smith SM, Wallace E, Salisbury C, et al. A core outcome set for multimorbidity research (COSmm). *Ann Fam Med* 2018; 16: 132–138.
11. Valderas JM, Mercer SW and Fortin M. Research on patients with multiple health conditions: different constructs, different views, one voice. *J Comorb* 2011; 1: 1–3.