



Workshop Synopsis

Addressing the global challenges of multimorbidity – lessons from South Africa

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The Academy of Medical Sciences

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Key messages

A two-day multimorbidity workshop of key stakeholders from South Africa and the UK was jointly organised by the Academy of Medical Sciences and the Academy of Science of South Africa on 2 and 3 March 2016. Workshop participants considered the problem of multimorbidities in both countries, and asked how we can achieve a more coherent and consistent approach to defining, researching, and addressing this issue. Some of the key messages from the workshop included:

- Multimorbidity is a growing global health challenge that affects a large proportion of the world's population. However, as multimorbidity is a complex issue, it has proven difficult to agree on a single definition, as the definition may differ depending on the context e.g. within a research setting or a clinical setting.
- Multimorbidity is growing in prevalence as a result of both an epidemiological shift and a demographic shift.
- Multimorbidity is more common in the elderly so it will be a particular burden in low- and middle-income countries (LMICs) such as South Africa as life expectancy continues to rise.
- Multimorbidity is often associated with socioeconomic status, with those from poorer socioeconomic backgrounds more at risk of developing multiple diseases.
- The current single-disease model is outdated and unhelpful when dealing with the increasing burden of multimorbidity.
- Policymakers worldwide need to better address health inequalities and support the complex service needs of a growing multimorbid population.
- There is a gap between the knowledge of and the ability to address the high mortality from chronic conditions in South Africa, and there are difficulties in the implementation of integrated disease care.
- Mental health is central to the management of multimorbidity and should not continue to be ignored.
- Health systems should be developed so that, in addition to providing adequate treatment and management, they are better able to diagnose multimorbidity, assess its severity and monitor it.
- The patient perspective is vital and any research recommendations must reflect patient priorities.



Introduction

Throughout the world, as life expectancy increases, the population incidence of non-communicable diseases (NCDs) is also increasing. In addition, communicable diseases continue to affect millions of people every year. All of these factors together mean that multimorbidity has become, and will increasingly be, an international health challenge.

However, currently there is no commonly used framework for defining or more widely understanding multimorbidity. Furthermore, most health related research is currently focused on the prevention and management of disorders in isolation. Consequently, it is difficult to compile a coherent body of research in this area or develop evidence-based strategies for use in healthcare systems.

In order to address the international challenge of multimorbidity, we must understand the problem better. Most of the evidence on multimorbidity, its prevalence and effects, comes from high-income countries (HICs). Less is known about multimorbidity in LMICs, particularly in Sub-Saharan Africa.

South Africa is a dynamic and complex country. It is a middle-income nation that has dedicated substantial resources to health and human capital investments. In addition, it has a progressive Constitution that guarantees the right to health care. National Health Insurance is the central means by which the Government aims to achieve universal coverage, under the principles of social solidarity and equity set out in the National Development Plan. However, despite improvements in life expectancy and progress being made against HIV/AIDS and tuberculosis, South Africa has an ageing population and approximately two in five deaths are now attributable to NCDs.¹ Multimorbidity therefore represents a growing concern in South Africa.

The main objective of this workshop was to consider the burden of multimorbidity in South Africa and the UK, and ask how we can achieve a more coherent and consistent approach to defining, researching, and addressing multimorbidity. The workshop brought together experts and evidence from South Africa, the UK and other countries on the prevalence, burden, and determinants of multimorbidity.

1. World Health Organization (2014). Non-Communicable Diseases (NCD) Country Profiles, 2014. http://www.who.int/nmh/countries/zaf_en.pdf?ua=1

The aims of the workshop were as follows:

- Identify gaps in our knowledge on the basis of the available evidence and identify the associated research priorities required to address them.
- Consider how health systems in both the UK and South Africa are currently dealing with multimorbidity, and in particular discuss the key challenges and the costs and financing issues associated with multimorbidity – particularly in light of efforts to achieve universal health care.
- Consider lessons that can be learned by each country from the other.
- Ask how we can achieve a more coherent and consistent approach to defining, researching, and addressing multimorbidity.

This workshop was funded by the UK Government's Global Challenges Research Fund² and was the first of six policy workshops co-organised by the Academy of Medical Sciences that aim to:

- Enable partners (primarily National Academies) in Official Development Assistance (ODA) eligible countries to consider how scientific evidence can help address key global health challenges.
- Build capacity in ODA countries for the provision of scientific advice.

Further information and reports from the programme of workshops can be found at www.acmedsci.ac.uk/GCRF

2. The Global Challenges Research Fund (GCRF) is a £1.5bn fund announced by the UK Government to support cutting-edge research that addresses the challenges faced by developing countries through:
 - Challenge-led disciplinary and interdisciplinary research.
 - Strengthening capacity for research and innovation within both the UK and developing countries.
 - Providing an agile response to emergencies where there is an urgent research need.

The GCRF is administered through delivery partners including the Research Councils and National Academies.

Understanding and defining multimorbidity

Multimorbidity is a growing global health challenge that affects a large proportion of the world's population. However, as multimorbidity is a complex issue, it has proven difficult to agree on a single definition, as the definition may differ depending on the context e.g. within a research setting or a clinical setting.

During this workshop participants identified that one way to combat this issue could be to develop a more restrictive definition of multimorbidity, to narrow the focus and reduce the complexity associated with very broad definitions.

In the UK, most studies (and the recent National Institute for Health and Care Excellence (NICE) clinical management guidelines³) define multimorbidity as two or more long-term health conditions within an individual. Typically such research, and the NICE guidelines, consider multimorbidity to include:

- Physical and mental health conditions
- Ongoing conditions such as learning disability
- Symptom complexes such as frailty or chronic pain
- Sensory impairment such as sight or hearing loss
- Alcohol and substance misuse

Despite acknowledging the challenges arising from variable definitions, the workshop participants agreed that multimorbidity is a global phenomenon that is associated with various burdens, including a decrease in quality of life and an increase in mortality, health care utilisation, hospital admissions and duration of stay. In the UK, multimorbidity is the norm in the elderly population and is also increasingly seen in people of a younger age, especially those of lower socioeconomic status.⁴

3. National Institute for Health and Care Excellence (2016). Multimorbidity: Clinical Assessment and Management. <https://www.nice.org.uk/guidance/ng56/resources/multimorbidity-clinical-assessment-and-management-1837516654789>
4. Salisbury C, et al. (2011). Epidemiology and Impact of Multimorbidity in Primary Care: A Retrospective Cohort Study. *British Journal of General Practice* 61(582), e12-21. <https://www.ncbi.nlm.nih.gov/pubmed/21401985>

Proposed research topic one: Sugar tax legislation

South Africa is one of several countries across the world that is introducing a tax on sugary soft drinks. The Government has proposed a 20% tax on these drinks that will be levied from 1 April 2017 with the aim of addressing obesity and the increased risk for lifestyle-related diseases such as type 2 diabetes, heart disease, and stroke.

Workshop delegates recognised that the introduction of the sugar tax in South Africa creates a timely opportunity to collect baseline data before its introduction which would allow for an analysis of the impact of this legislation on targeting the premorbidity population. They considered that as part of this wider analysis, it would also be important to monitor the impact of the tax on, for example, different socioeconomic groups, and look to investigate whether the tax would differentially reduce multimorbidity across these cohorts. The health data would need to be collected pre and post, in cohorts, aiming towards long-term data.

In South Africa, there is an evident gap between the knowledge of and the ability to address the high mortality from chronic conditions, and there are difficulties in the implementation of integrated disease care. Currently, chronic disease management, including mental health, has a strong single disease focus based on guidelines devised from trials that typically exclude multimorbid patients. It was agreed that this will need to change in order to realise improvements in outcomes for patients with multiple conditions.

It was widely agreed that policymakers at a global level need to address health inequalities and support the complex service needs of a growing multimorbid population. In addition, much more is required in terms of developing the evidence base, the effective integration of health and social care services through adopting a holistic approach, and research to assess the gaps in community resources for providing services to multimorbid patients.



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Burden, risk factors, and consequences

Burden

Multimorbidity is the norm across the globe and is continuing to increase – most people have multiple long-term conditions. The World Health Organization (WHO) World Health Survey (WHS) study which focused on LMICs, ‘Multimorbidity and the inequalities of global ageing: a cross-sectional study of 28 countries using the WHS’, reported the mean world standard prevalence for multimorbidity in LMICs was 7.8%, so even in LMICs the prevalence of multimorbidity was quite high.⁵ This increase in multimorbidity is a result of both an epidemiological shift (i.e. an increased burden of NCDs from infectious diseases) and a demographic shift (i.e. a shift to an older population).

It was agreed amongst participants that the current single-disease model is outdated and unhelpful when dealing with the increasing burden of multimorbidity. Multimorbidity can also either be concordant (the component diseases are causally linked somehow) or discordant (the component diseases have more unpredictably occurred together) which means more research into both is needed.

Workshop participants highlighted that gaps in the evidence on the burden of multimorbidity in South Africa and globally still exist. They agreed that it is necessary to identify the burden arising from multimorbidity, the evidence gap, and the routes to intervene. Participants also agreed that it is important to consider how best to apply existing knowledge to improve healthcare outcomes and whether multimorbidity affects the response to interventions, the life-course approach and a healthcare delivery system that focuses on quality of life.

In terms of infectious diseases, tuberculosis and HIV are the main causes of death in South Africa, meaning that – unlike in the UK – these diseases are a common component of multimorbidity. Nonetheless, the extent to which such infections truly contribute to multimorbidity is not well known as it was noted that when screening for these infectious diseases occurs, patients are not asked if they have other diseases at the same time. Therefore, multimorbidity is generally not picked up as part of the current surveillance programmes, which also do not provide a sense of the extent to which NCDs are emerging in the HIV setting.

5. Afshar S, et al. (2015). Multimorbidity and the inequalities of Global Ageing: A Cross-Sectional Study of 28 Countries Using the World Health Surveys. *BioMed Central (BMC) Public Health* 15, 776. <http://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-015-2008-7>

Risk factors

The workshop participants heard presentations and discussed evidence and research gaps around various risk factors for multimorbidity in South Africa and the UK.

Proposed research topic two: Psycho-social factors as determinants of multimorbidity

There are a number of disadvantaged and vulnerable populations that are considered particularly at risk of multimorbidity in South Africa and where there is an increased burden, especially amongst internal migrant populations. Exposure of recent migrant returnees to the set of determinants that heightens risk is reflected in their NCD or HIV mortality. This helps to understand the amplification of burden that occurs in migration.

However, there is a lack of evidence-based medicine and guidelines for managing multimorbidity in these populations, meaning they may therefore represent a distinct area for further research to focus on preventive interventions and access to appropriate care.

With this in mind, migrant populations present an opportunity to look at which factors affect their health and what the determinants, prevalence, and outcomes of multimorbidity might be for them. This could focus on the adverse effect on migrants' health due to multimorbidity in relation to HIV (because of the extent of migration within South Africa) and the possibility of identifying reversible risk factors that could reduce the adverse consequences of migration in the HIV infected population. It is known that people with HIV have increased multimorbidity that affects their health and as this is worse in migrant populations, this research could therefore quantify this detriment to migrants and identify reversible risk factors.

Ageing

Although an increase in life expectancy is being seen in all countries, the increase of older adults in LMICs, including South Africa, will remain significantly higher than in most HICs for many decades. As multimorbidity is more common in the elderly, it will be a particular burden in LMICs such as South Africa as this increase continues. However, workshop participants also noted that despite multimorbidity being most common in the elderly, and its impact in this population being more substantial, it is also increasingly being seen in younger cohorts meaning it is important to consider approaches to multimorbidity that are relevant across the life course.

Socioeconomic

The prevalence of multimorbidity is often associated with socioeconomic status, with those from poorer socioeconomic backgrounds more at risk of developing multiple diseases.⁶ More specifically, workshop participants discussed data from the UK which found that individuals in poorer economic areas develop multimorbidity on average 10 to 15 years earlier than those in higher economic areas.⁷ They therefore recognised that it is important to note that different people have different exposures and different vulnerabilities, and acknowledged that this will influence how best to prevent and manage multimorbidity.

Education

Workshop participants discussed how a low level of education and/or health literacy creates additional difficulties for patients with more than one disease to manage. It is therefore important to take a multisectoral approach to addressing risk factors and management in South Africa.

Mental health

Poor mental health is very common in individuals with multimorbidity in South Africa and other countries. The association with physical illness is however bidirectional, meaning in some cases the physical illness will cause poor mental health, but also that mental health illness can result in comorbid physical conditions. There was widespread agreement that mental health is therefore central to the management of multimorbidity and should not continue to be ignored.

6. Afshar S, et al. (2015). Multimorbidity and the Inequalities of Global Ageing: A Cross-Sectional Study of 28 Countries Using the World Health Surveys. *BMC Public Health* 15, 776. <http://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-015-2008-7>
7. Barnett K, et al. (2012). Epidemiology of Multimorbidity and Implications for Health Care, Research, and Medical Education: A Cross-Sectional Study. *The Lancet* 380(9836), 37-43. <https://www.ncbi.nlm.nih.gov/pubmed/22579043>

Current research

Although some risk factors are known, there are no longitudinal or cohort studies in South Africa, association studies have also supported the notion that known risk factors only account for some of the incidence of multimorbidity. Therefore, while we may know a lot about determinants, there is still a lot left to learn.

Nonetheless, it was noted by some participants that enough is known about determinants to be able to progress research on interventions; although this should be done in parallel with other research to better understand risk factors.

Consequences

Workshop participants agreed that the consequences of multimorbidity were wide-ranging in terms of impact. The large and growing burden of NCDs in LMICs, particularly when coupled with limitations in resources and competing public health priorities, points to the need to understand the burden of multimorbidity. However, studies investigating the prevalence and determinants of multimorbidity have primarily focused on HICs resulting in evidence and research gaps that may be specifically relevant to LMICs.

In addition to research gaps, the workshop also highlighted that polypharmacy is often a consequence of multimorbidity, and is increasingly associated with poor adherence and poorer clinical outcomes. Participants agreed that better coordination and support through informed planning of healthcare systems is required.

There is also a need to increase activities and expand measures to reduce the modifiable risk factors that are driving multimorbidity prevalence. More research is required to assess the gaps in the community resources for providing services that maintain quality of life in the face of declining health.

Health systems (organisation, delivery and financing), patient engagement, and data

Health systems

Increased support for multimorbid patients will come from better coordination of health services and from informed planning of healthcare systems. For example in the UK, 85–90% of NHS activity is dealt with by GPs, who are therefore responsible for most chronic disease management. However, care services are fragmented; clinical care for physical and mental health illnesses is poorly integrated, as is health and social care. This should be addressed under the assumption that better integration will lead to improved patient care and outcomes.

It was widely agreed that multidisciplinary teams are required to address multimorbidity. These should include doctors and various allied health professionals, including those in community care. There may also be a place to more widely include non-medical expertise in such teams. For example, the role of family and friends as caregivers; the impact on their wellbeing should also be better recognised and explored.

In addition, there should be greater access to generalist training. In particular, health systems should be developed so that, as well as providing adequate treatment and management, they are also better able to diagnose multimorbidity, assess its severity and monitor it.

Proposed research topic three: Combined care for people who have multimorbidities

There is a specific need and a unique opportunity for further research on combined care for patients who have infectious and chronic non-infectious conditions, and for such research to drive a more integrated programme that would improve the care of each individual condition. In addition, there is a case for treating multimorbidities together and not individually, particularly in terms of the pharmacology associated with treating each disease, the interactions of the drugs and the compounding effects.

With this in mind, participants agreed that it is important to consider clinical pathways through the life course and that how best to utilise the life-course approach is a fundamentally important question to explore further. For example, an initial presentation to sexual reproductive health services as a means to beginning longer-term life-course care for women was a specific area that could be considered. Future research could be formulated around high-risk pregnancies in women with a history of gestational diabetes and those who have had severe stressors during pregnancy (as hypertension was a coexistent factor in almost all cases). In addition, the integration of care afterwards should be looked at from the point of view of multimorbidity with the combination of infectious and non-infectious factors.

Patient engagement

Unlike in many HICs, patients in South Africa often use alternative medicines and practices before engaging with primary care. NCD care is highly ritualised in South Africa, and is made up of two elements of clinical rituals. The first is a formal, policy-driven element of care and the second is an informal ritual, seemingly separate from the clinical work of the team.⁸ It was acknowledged that these will be difficult to change.

The patient perspective is vital – patient priorities must influence any research recommendations. More effort needs to be made to involve patients and better understand what engagement they find valuable, as not all patients want to take part in shared decision-making.

It was noted that the recent NICE guidelines in the UK are the only guidelines explicitly developed for patients with multimorbidity, and that in other countries like South Africa, doctors are left to rely on their discretion when treating patients.

There are many examples of interventions that improve care, but do not save healthcare providers money. Self-management, for example, can improve health outcomes but relies strongly on high levels of health literacy and often does not save money. Workshop participants therefore suggested it may be extremely difficult to achieve both improved care and low costs.

Data

Health information systems in South Africa need to be strengthened. In particular, it is essential to focus on the data when addressing the question of whether care should be managed differently in the presence of multimorbidity. Therefore, a better exchange of high quality data should be promoted in South Africa. This could be in the form of integrated data or more simply of encouraging and supporting easier data sharing.

8. Lewin S & Green J (2009). Ritual and the Organisation of Care in Primary Care Clinics in Cape Town, South Africa. *Social Science & Medicine*. 68(8),1464-71.<https://www.ncbi.nlm.nih.gov/pubmed/19278764>

Proposed research topic four: The role of the patient (how the patient can be better involved in the management process)

There is an opportunity for further research into health-seeking behaviour including into the perceptions and desire for shared decision-making and self-management. It is important to better understand the wishes of patients before identifying the barriers which might limit the introduction and utility of strategies to improve patient engagement in their care.

Although this is already being done in the Comorbidity of AIDS/HIV Affective Disorder and Long-Term Health/Programme for Improving Mental Health Care (COBALT/PRIME) trials, there is scope to look further at patients as 'users of health care' so they can be better empowered. This could be an observational (rather than interventional) study that considers the preferences of patients with multimorbidity. Interventions should not be developed without taking into account the views of the multimorbid population.

Next steps

The workshop facilitated some thought provoking discussions which led to a number of tangible next steps to tackle the issue of multimorbidity in South Africa. The proposed research topics in this report are examples of the research gaps on multimorbidity that could be addressed in South Africa in the immediate future. The discussions from this workshop will also feed into the Academy of Medical Sciences' multimorbidity working group and provide in-depth evidence on multimorbidity in LMICs. The Academy will be hosting a further workshop focusing on multimorbidity in the BRICS countries (Brazil, Russia, India, China and South Africa) and looking at whether lessons could be learned between countries in how to tackle this global challenge.



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