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Commentary

Minimising multimorbidity clustering across the lifespan

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While populations around the globe are living longer, so too have the number of years living in poor health [1]. Indeed, the burden of chronic health problems has steadily increased over previous decades, which are not exclusive to old age [2]. In consequence, there will be more individuals who can expect to live longer with multiple conditions, otherwise known as multimorbidity [3]. Against this background, there has been increasing interest in understanding non-random patterns, or clusters, of multimorbidity to understand the expression of chronic conditions in adulthood [4].

In *The Lancet Regional Health – Europe*, Alessandra Bisquera and colleagues characterised multimorbidity clustering of chronic health conditions across the adult lifespan [5]. Here, they included 32 chronic health conditions, which were analysed from assembling 826,936 patient electronic health records (mean age 40 years old; 52% female) from 2005 to 2020 across 41 urban general practices in London. From patient record data, the authors used a statistical method, called multiple correspondence analysis, to reveal unique clusters of multimorbidity.

In this cohort, 41% (n = 339,044) had at least one chronic health problem and 21% (n = 174,881) had multimorbidity. Females (23%) were more likely than men (20%) to have multimorbidity. The number of chronic conditions increased with age, where people aged 80 years or older had a median 5 chronic conditions versus those who were 18–39 years old (median 2 conditions). The prevalence of multimorbidity increased from 15·5% in the 2005–2010 study sample versus 25·2% which supports previous data that the burden of disease and poor health is increasing in more recent years [2]. The increase in multimorbidity prevalence shown here poses major challenges for health care and policy planning.

In addition to demonstrating a rise in multimorbidity rates, the study by Bisquera et al. offer insights into commonly occurring multimorbidity clusters [5]. It is noteworthy that these clusters have remained stable during the 15-year study period. Five unique clusters of multimorbidity across 20/32 chronic conditions were identified, where patients could fall into multiple disease clusters. The younger age groups (18–39 and 40–59 years old) were characterised by multimorbidity clustering centred around 1) depression and anxiety, 2) chronic liver disease and viral hepatitis, and 3) substance abuse and alcohol dependency. The older age groups (60–79, 80+ years old) were burdened by a greater number of chronic conditions of ageing, which included cardiovascular and cerebrovascular conditions, chronic kidney disease, dementia, and osteoporosis; or osteoarthritis, cancer, chronic pain, hypertension, and diabetes.

How can multimorbidity clusters be addressed when the study by Bisquera et al. have shown that they remained stable for more than a decade [5]? Unfortunately, this could mean that current health care and policy efforts need adjustment. Many chronic conditions present as single conditions before manifesting into predictable multimorbidity patterns [6]. Indeed, it would be useful to follow patient trajectories that were consequential of multimorbidity and to identify subsequent clustering of conditions to inform policy and health care strategies which aim to minimise the time individuals spend in poor health. Uncovering whether patients move among clusters, especially for the younger and middle-aged multimorbid groups who may be more susceptible to diseases of old age, is needed. So too would it be helpful to understand the lethality of the multimorbidity clusters identified in this study. The implementation of algorithms which harness patient health records electronic health records to identify probable (un)healthy trajectories at the regional and individual level may be insightful to alert health authorities and the health care team towards earlier intervention before individuals cascade into multimorbidity clusters [7].

From a regional health planning perspective, it is worth examining the extent to which current policies address social inequalities can be expected to mitigate chronic health conditions across the lifespan, which are known to increase multimorbidity risk even in high income countries like England studied here [8]. Identification of regions with socially vulnerable groups may enable a more targeted approach to minimise the number of modifiable risk factors identified by the World Health Organization 25 × 25 risk factors that increase non-communicable disease risk (excess alcohol consumption, physical inactivity, smoking, high blood pressure, diabetes, and obesity) which are more prominent in low socioeconomic areas [9]. The implementation of such a targeted approach is a major challenge but carrying on as usual is not the answer for overwhelmed health care systems who will be expected to respond to growing rates of multimorbidity.

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Author Contributions

D Scott Kehler is the sole author and contributed to all aspects of this comment.

Declaration of Interests

Dr. Kehler has nothing to disclose.

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