The changing prevalence of multicomorbid patients in the US: Highlighting the need for holistic management

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KEY TAKEAWAYS

Growth in the number of US adults with CKM morbidities significantly outpaced general population growth

In 2023, of US adults,

- **59%** had at least **one** CKM morbidity,
- **28%** had at least **two**,
- **15%** had **three** or more

The proportion of individuals with **4 or more** comorbidities has increased by **85.9%** from 2006 to 2023

CONCLUSIONS

The typical patient profile is older with a higher body mass and more complex health conditions, which collectively increase the risk of complications, increase healthcare expenditure and challenge treatment delivery

This highlights the importance of integrated management strategies and the opportunity for multi-indication treatments to improve outcomes and reverse current trends

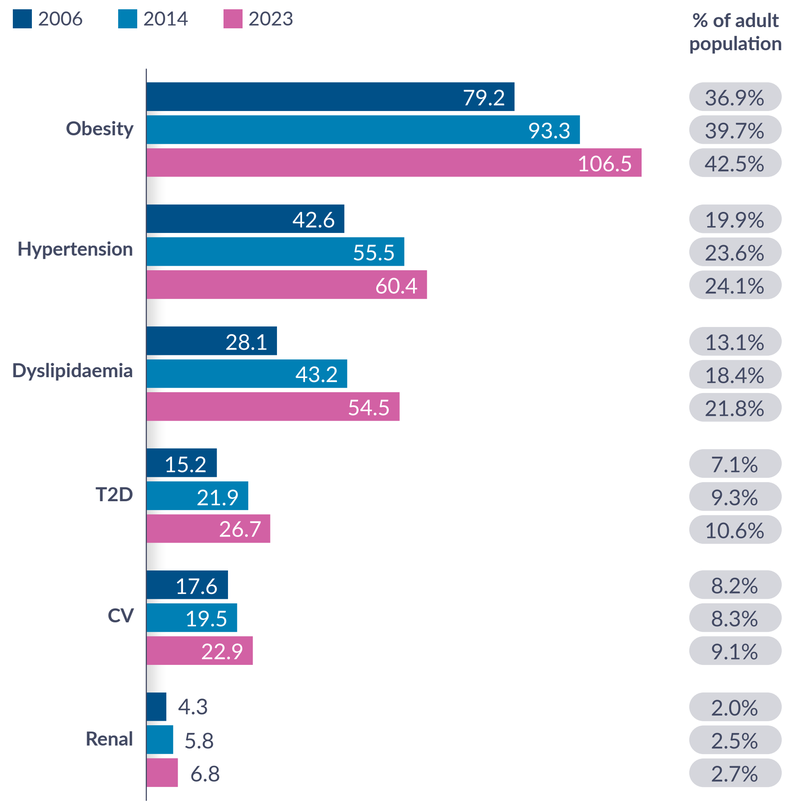
INTRODUCTION

- Cardiovascular-kidney-metabolic (CKM) syndrome is a complex interrelationship between obesity, cardiovascular disease (CVD), chronic kidney disease and other comorbidities like hypertension. The incidence and prevalence of the core components of the CKM syndrome are commonly reported, but the prevalence of specific combinations of conditions is less well understood
- We previously quantified the prevalence of each combination of CKM diseases in US adults in 2023 and found significant multicomorbidity[1]
- Here we extend this work to quantify CKM syndrome in US adults between 2006 and 2023, assessing the trajectory of multicomorbidity
- We then discuss the potential role of interventions with broader-reaching effects, such as SGLT2i and GLP-1 RAs, in improving this trajectory

METHODS

- We extracted all individuals from the National Health and Nutrition Examination Survey (NHANES) data for the survey years 2006–2023[2], totalling 97,683 unique participants
- We extracted adults (N = 59,989) with one or more of the following CKM morbidities:
  - Obesity
  - Hypertension
  - Type 2 diabetes (T2D)
  - Dyslipidemia
  - Poor kidney health
  - Cardiovascular disease (CVD), consisting of any of chronic heart failure, congestive heart disease, angina, myocardial infarction, stroke)
- Where uncertainties existed within the survey, proxy questions were used to approximate prevalence levels
- We extrapolated the data to estimate the total US adult population living with one or more CKM conditions for each survey year. We estimated the population-level prevalence of each of 64 unique combinations of conditions for each survey year using the survey weightings for each unique participant

Figure 1. Total prevalence (millions) of primary diagnoses, US adults regardless of additional comorbidities, 2006-2023



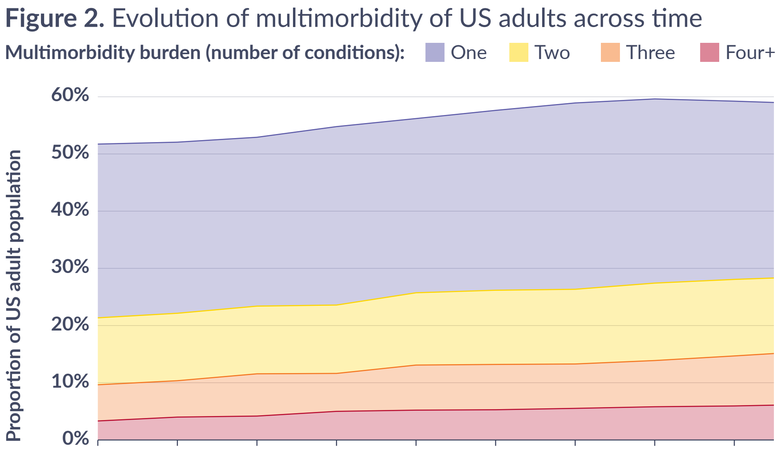
OBJECTIVES

- Describe the changing prevalence of single and multiple CKM comorbidities in the US adult population using contemporary population-level data

RESULTS

- In the US, between 2006 and 2023, the adult population grew by 16.8% (from 214m to 250m), the average age increased from 45.6 to 47.8 years, and the average adult BMI increased from 28.4 to 29.5
- Over the same period, the prevalence of the core components of CKM syndrome and key comorbidities grew at significantly faster rates than population growth (Fig. 1) (obesity by 34.5%; hypertension by 41.7%; dyslipidaemia by 93.9%; T2D by 75.9%; CVD by 30.5%; and poor kidney health by 57.6%)
- Obesity was the most prevalent single condition across all survey years, increasing from 36.9% to 42.5% of US adults (Fig 1)
- The most prevalent combinations were obesity and hypertension, hypertension and dyslipidaemia, and obesity, hypertension and dyslipidaemia (Fig 3)
- The prevalence of multimorbidity is high and has increased substantially (Fig 4)
- The proportion of adults with at least one CKM comorbidity grew from 51.9% in 2006 to 59.2% by 2023; the proportion with at least two CKM comorbidities grew from 21.4% to 28.4% (Fig 2)

Figure 2. Evolution of multimorbidity of US adults across time

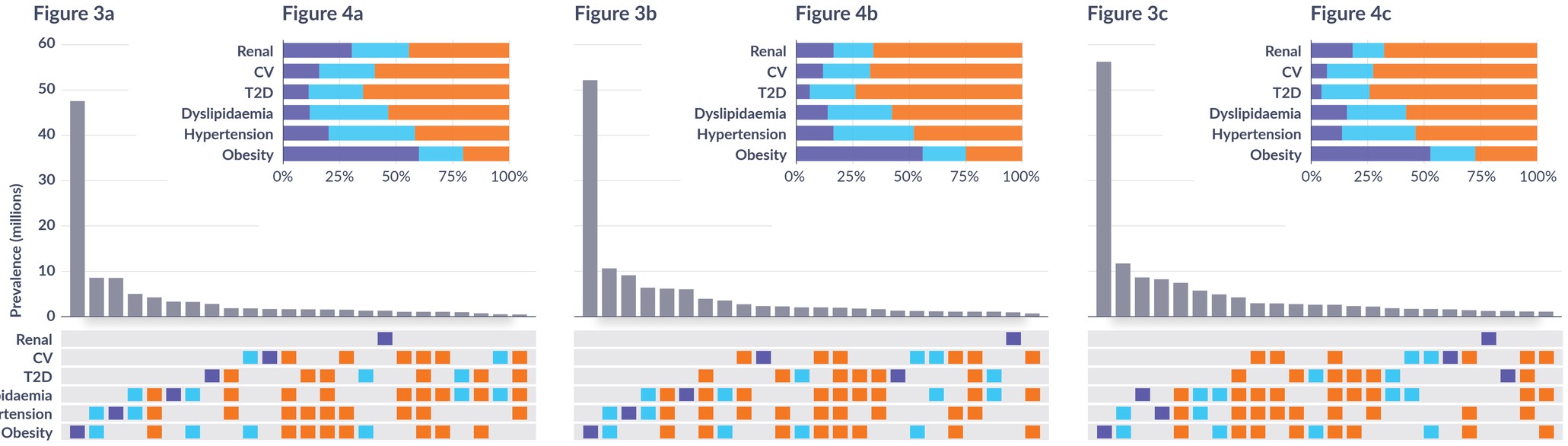


DISCUSSION

- The prevalence of CKM syndrome has grown from 2006 to 2023 and continues to grow. Multimorbidity continues to rise, with the proportion of US adults with 4 or more comorbidities increasing by 85.9% from 2006 to 2023 (3.27% to 6.09%)
- Patients with multimorbidity are challenging to treat and increase strain on healthcare systems, highlighting the need for the holistic treatment of CKM
- Treatments with broader CKM treatment effects, such as SGLT2is and GLP-1 RAs offer significant value in these patient populations - value that current single-indication value assessments would underrepresent
- This highlights the need for broader value assessments for these types of interventions to ensure that the value associated with treating a second (or third, or fourth) condition is captured in the perceived value of the therapy

Figure 3. Prevalence (millions) of YY most prevalent combinations of CKM-related comorbidities in US adults, for the year of **(a)** 2006, **(b)** 2014, **(c)** 2023

Figure 4. Proportions of patients with differing numbers of comorbidity for each primary diagnosis, for the year of **(a)** 2006, **(b)** 2014, **(c)** 2023



ABBREVIATIONS

BMI, body mass index; CKD, chronic kidney disease; CKM, cardiovascular-kidney-metabolic; CVD, cardiovascular disease; GLP-1 RA, glucagon-like peptide-1 receptor agonist; NHANES, National Health and Nutrition Examination Survey

REFERENCES

1. Padgett et al. ISPOR US. 2025, Poster EE189
2. Centers for Disease Control and Prevention; National Center for Health Statistics. National Health and Nutrition Examination Survey

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