

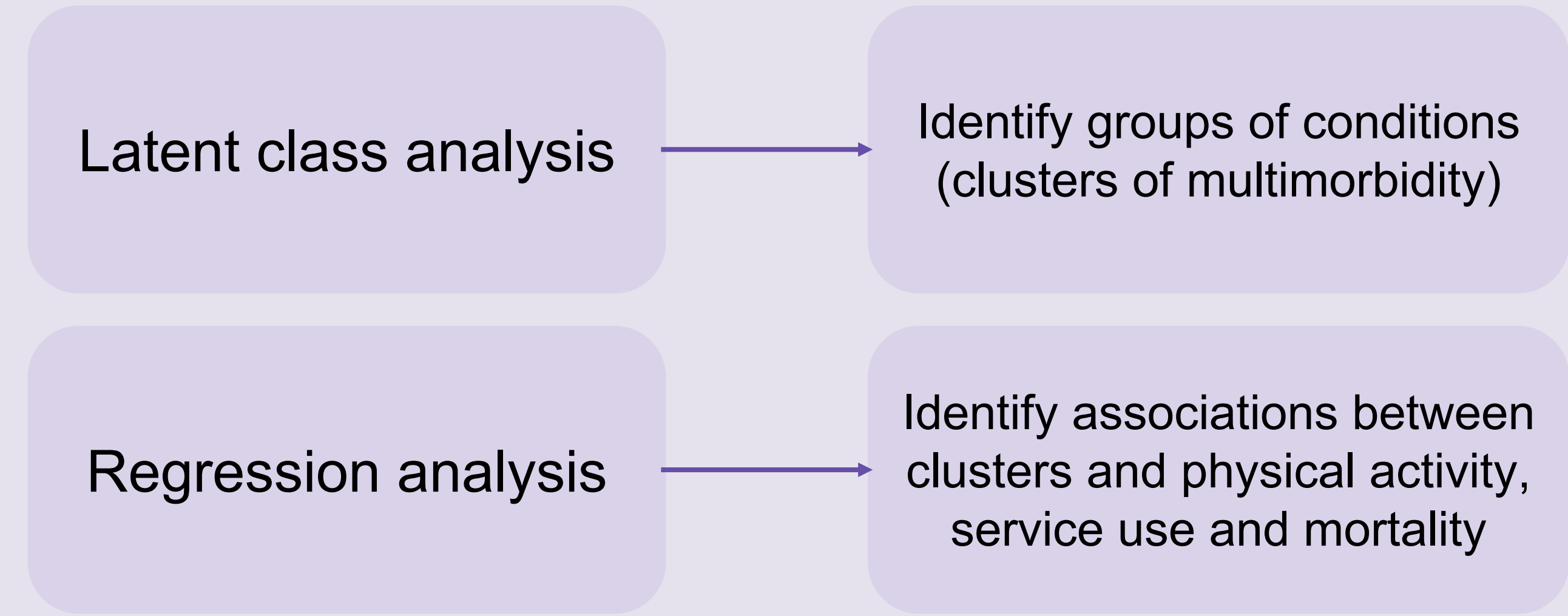
Multimorbidity patterns in women with PCOS and their relationship with physical activity

Background

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder of pre-menopausal women (1) and is associated with early multimorbidity (MM) (2). Although vital to the management of PCOS and its’ comorbidities (3), the impact of physical activity (PA) in the development of MM in PCOS patients has not been studied.

We aimed to identify the patterns of MM in PCOS patients in a large population and their association with PA levels, service use, and mortality.

Methods



R and Jamovi was used for all analyses (6-8). 199 conditions were included in the analysis. A Read code list was created for each condition by curating existing validated code sets (9, 10). The PA codelist was created by searching the CPRD GOLD code browser and filtering relevant results into the four General Practice Physical Activity Questionnaire (12) groups after discussion with a Sports Medicine specialist.

Results

PCOS patients are young, multimorbid and inactive

- Whole population statistics (mean (SD)):
- Age: 28.57 (8.38)
 - BMI: 28.26 (7.4)
 - Long term conditions (LTCs) per patient: 7.96 (5.43)
 - Physically active population: 33.54%

Only **2.09%** of the population were not multimorbid.

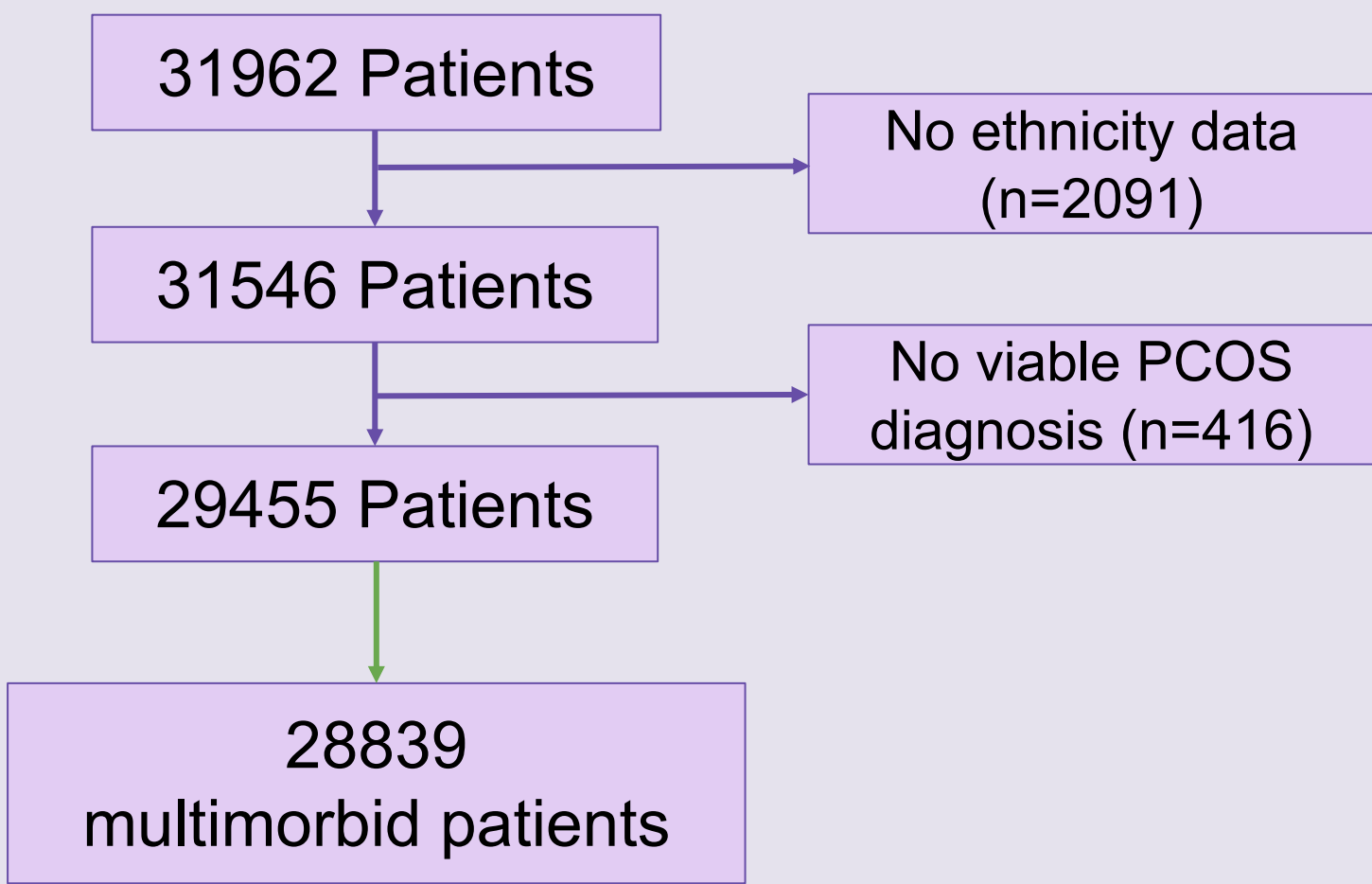


Figure 2. Population flow chart with reasons for exclusion.

Three Main Clusters of MM were found

	Cluster 1: Healthy	Cluster 2: Mental Health Multimorbidity	Cluster 3: Severe Multimorbidity
Population Statistics			
% of total multimorbid population	17476 (60.60%)	9543 (33.09%)	1820 (6.31%)
Age, BMI, LTCs (mean (SD))	27.4 (7.4), 26.8 (6.59), 5.18 (2.03)	29.3 (8.65), 29.9 (7.81), 11.1 (2.95)	36.9 (10.8), 33.2 (8.45), 20.8 (9.27)
Physically active population (%)	36.71	30.96	20.81
Most Prevalent Three Conditions % value shows prevalence of condition in the cluster	Dermatitis (27.34%) Depression (26.53%) Obesity (24.31%)	Depression (73.35%) Anxiety (55.69%) Obesity (46.27%)	Depression (78.97%) Painful Conditions (71.69%) Obesity (69.82%)
Associations between cluster and physical activity, service use and mortality	Lowest mortality and service use	Increased prescriptions (IRR 2.58)	Increased 3-year mortality (OR 7.53) and hospitalisation (OR 8.97)

Data Source

The Clinical Practice Research Datalink (CPRD) is formed of real-world health data from 60 million UK patients (4). It includes demographic, referral, test and consultation information, and can be linked to secondary care, mortality and socio-economic data.

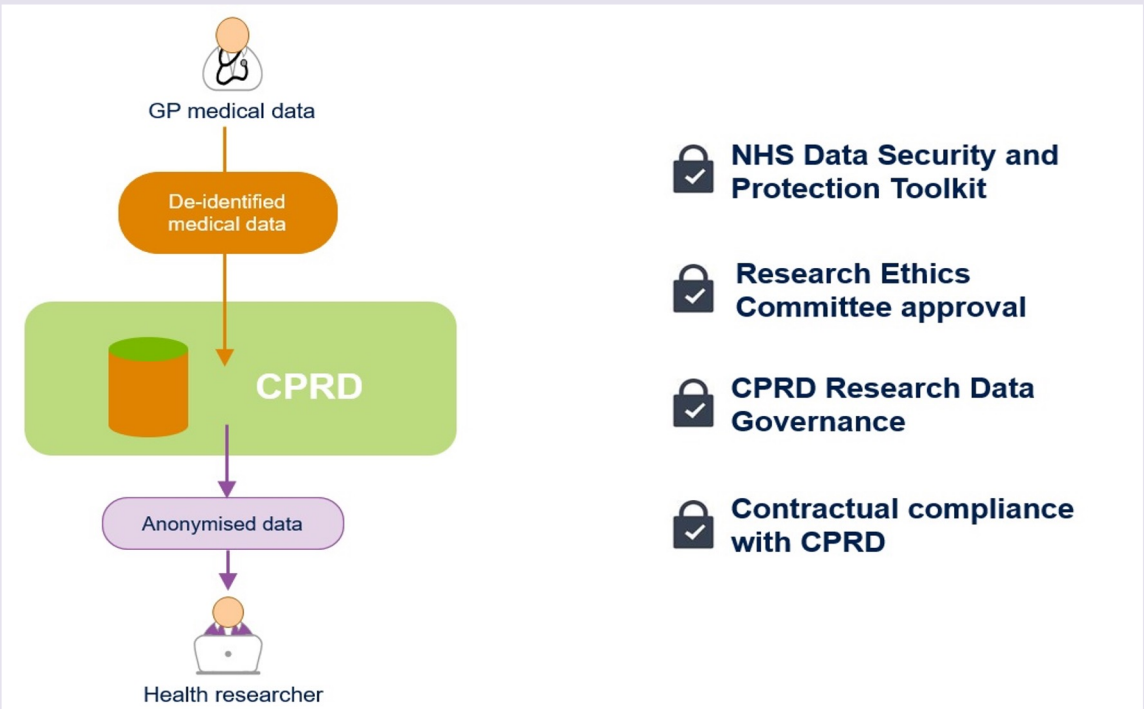


Figure 1. General practices (GP) share anonymised patient data to Clinical Practice Research Datalink (CPRD), who then share requested data with the researcher (5)

Discussion and Conclusion

This is the first reported study to identify MM patterns in PCOS patients and their association with physical activity (PA), service use, and mortality. 98% of patients in this large, young sample of women with PCOS were multimorbid, with the average patient having 8 long term conditions. As this population ages, the polypharmacy and high service use already affecting these women will be exacerbated. Despite PA being an effective preventative and maintenance management for the conditions seen in the three MM groups in this study, adequate activity levels are lacking in this population. **Promotion of PA must be prioritised in every contact this high-risk population has with the healthcare service to prevent future MM.**

References

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