7th & 8th March 2025

Academic General Practice Ireland, ASM

"Renewing Vision"

3C Moderated Posters: Variety is everything (b)

Chair: Dr Diarmuid Quinlan

Irish College of GPs

AGPI Academic General Practice Ireland

QUEEN'S UNIVERSITY BELFAST

"I want them to know what a polar bear is!": A randomised controlled trial of the effect of a nature – based intervention on Eco-anxiety and Climate Engagement in TY students

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Introduction

We are experiencing a climate and biodiversity crisis unprecedented in the history of mankind. This study addresses climate capability and eco-anxiety among young people by testing a nature-based intervention which connects participants with nature and combines climate education with hands-on climate action.

Eco anxiety is both a personal and collective emotional response, influenced by perceived threats to the environment, uncertain futures, and inadequate systemic responses. (Clayton 2020) Climate Capability is the degree to which individuals have the skills, understanding, and motivation to make behavioural changes that will reduce their individual contribution to climate change; and appreciate the need for collective action and governance to limit the magnitude of climate change and mitigate its effects (Horry 2023).

The relationship between eco-anxiety and climate capability is a complex one. While it has been shown that eco-anxiety can enhance pro-environmental behaviours in some subjects, in others it can induce eco-paralysis, thus leading individuals to avoid any form of engagement in actions against climate change (Innocenti 2023). Therefore it seems that some level of anxiety is important to spur people into action in order that they might become more climate capable so rather than having an inverse relationship a more complex relationship appears to occur between eco-anxiety and climate capability.

No previous randomised controlled trials of interventions to effect eco-anxiety and climate capability in teenagers have been undertaken.

The aim of our study was to design and test the effect of a nature-based intervention on eco-anxiety and climate capability among TY students.

Methodology

Sample and Setting

We invited all TY students in the Ursuline secondary school in Thurles, Co Tipperary to take part. After parental signing of informed consent, baseline data was collected on the primary outcomes using the online survey tool. Qualtrics XM and only then were participants were assigned randomly to control and intervention groups.

Outcomes

The primary outcomes were the change in climate capability measured using the Climate Capability Scale and the change in eco anxiety measured using the Hogg eco anxiety scale between baseline and follow-up

Intervention and Control Groups

The intervention group over the following four weeks received weekly AI-generated online messages consisting of climate education and motivation to climate action. At the end of the four weeks the intervention group undertook a supervised half day field trip which we led in Castleconnell, Co Limerick on the River Shannon. This trip consisted of Shinrin Yoku forest bathing to connect participants with nature, climate education and then river restoration and tree planting as a form of climate action. The control group received their usual educational curriculum during the study period.

Qualitative data collection

In addition, all participants (intervention and control) were invited to take part in online focus group interviews using Teams regarding their experience of the study . The five stages of the Framework Process were followed in the examination of the qualitative data which included familiarization, indexing, charting, mapping and interpretation .

Trial registration and Ethical approval

The trial was registered with ISRCTN on 26/10/24 (No: 46298). Ethical approval was granted on 4/11/24 from the EHS Ethics committee at University of Limerick (No: 2024_10_08_EHS).

Statistical Analysis

Mean difference between control and intervention groups was compared using independent samples t-test and Pearson correlation was used to examine the relationship between change in climate capability and change in eco-anxiety in participants between baseline and follow-up. All statistical analyses was performed using the software package SPSS version 28.01.0.

Results

Recruitment and Baseline Characteristics of Trial Participants

A total of 116 TY students were invited to participate. Of these 30 (26%) were excluded, due to not being available due to other commitments (Figure 1). Therefore, 86 were eligible and randomised, all were female and aged either 15 or 16 years of age. There were no significant differences between control and intervention groups at baseline for climate capability scores or eco-anxiety scores. The flow chart in Figure 1 represents the movement of participants through the stages of the trial. Of the 86 participants randomised, 83 (97%) completed follow-up.

Outcome data

The mean scores and sub-scores (mean difference, standard deviations and p values) at baseline and follow up for control and intervention groups are shown in table 1 below. There was evidence of a significant intervention effect (p<0.01); with an increase in mean climate capability score of 8.2 (95% Confidence Interval 4.9 – 11.5) and an increase in eco-anxiety score of 7.2 (5% Confidence Interval 3.7-10.7) favouring the intervention. In addition, there was a statistically significant correlation between change in climate capability and change in eco-anxiety (Pearson correlation 0.485, P< 0.01)

Figure 1. Participant flow through recruitment and follow up

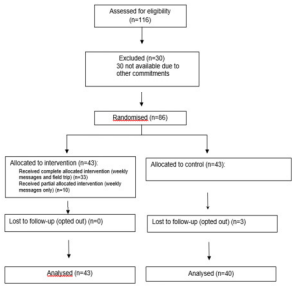


Table 1. Mean baseline and follow-up and mean difference for primary outcomes in control and intervention groups.

Primary Outcomes	n	Baseline Mean (SD)	n	Follow-up Mean (SD)	Mean difference (SD)	p
Eco-anxiety (EA) Score						
Control Group	43	6.67 (5.07)	40	5.00 (5.95)	-1.73 (5.07)	p < 0.001
Intervention Group	43	7.74 (6.49)	43	13.36 (9.25)	+5.51 (10.14)	
EA Affective Sub-score						
Control Group	43	6.67 (5.07)	40	5.00 (5.95)	-0.53 (1.68)	p = 0.001
Intervention Group	43	7.74 (6.49)	43	13.36 (9.25)	+1.35 (3.43)	
EA Rumination Sub-score						
Control Group	43	6.67 (5.07)	40	5.00 (5.95)	-1.73 (5.07)	p < 0.001
Intervention Group	43	7.74 (6.49)	43	13.36 (9.25)	+5.51 (10.14)	
EA Behavioural Sub-score						
Control Group	43	6.67 (5.07)	40	5.00 (5.95)	-1.73 (5.07)	p = 0.001
Intervention Group	43	7.74 (6.49)	43	13.36 (9.25)	+5.51 (10.14)	
EA Personal Impact Sub-score						
Control Group	43	6.67 (5.07)	40	5.00 (5.95)	-1.73 (5.07)	p < 0.001
Intervention Group	43	7.74 (6.49)	43	13.36 (9.25)	+5.51 (10.14)	
Climate Capability Score						
Control Group	43	27.70 (7.99)	40	28.30 (7.78)	+0.50 (6.36)	p < 0.001
Intervention Group	43	28.42 (7.32)	43	37.09 (8.56)	+8.67 (8.56)	

Qualitative Data

After following the stages of framework analysis the themes that emerged from the data were classified into three major interrelated themes: powerlessness; responsibility; and capability and hope:

1) Powerlessness

There was a general sense of powerlessness in the face of the very big problem that is climate change and the ecological crisis:

"I feel like it's doing irreparable damage, and I don't have the power to fix it by myself." CR4

2) Responsibility

On the one hand there was a frustration that this problem now seemed to be the responsibility of the younger generation even though it was not caused by them:

"They have completely just destroyed the world and now it's up to us to fix it." IR1

However, the intervention group did seem to develop an awareness as a result of the study of what they could do to make a difference and the importance of doing something: "'I definitely worry for future generations because I want them to know what a polar bear is and I want them to know all the beautiful things that we've grown up knowing." IR1

3) Capability and hope

The most striking theme in the data emerged from the intervention group which was the change in their sense of capability and a renewed sense of hope as a result of the intervention experience: "There is definitely a chance that we can fix the world and make it what it was." IR3

Discussion and Conclusion

Main findings

In this novel trial of a nature climate education and action intervention in TY students, we found that there was evidence of a significant intervention effect (p<0.01) with an increase in mean climate capability score and an associated increase in eco-anxiety score favouring the intervention over the four-week period of the trial. This change was also seen in the qualitative data where the increase in eco-anxiety appeared to switch on a sense of climate capability in the Intervention group to counteract the powerlessness felt at the beginning of the study.

It seems that a certain amount of eco-anxiety is a good thing as it is means it is more likely someone will engage in, and act for, the betterment of our planet. This study seems to confirm this as we saw a significant increase in climate capability associated with the rise in eco-anxiety seen among the intervention group and this rise in eco-anxiety did not result in eco-paralysis in this age group. The relationship between eco-anxiety, climate capability and positive environmental behaviour is important, especially because engaging in positive environmental behaviour may prove to be an effective strategy for coping with eco-anxiety

Recommodations

The results of the current study would suggest that interventions which reconnect and engage young people with the environment and the issues around climate change may lead to increased eco-anxiety levels but may also trigger a larger increase in climate capability.

Departments of Education who are responsible for developing school curricula should consider including climate education and engagement in the education of young people if we are to ensure that we have enough climate capable citizens of the future. This trial represents an important step forward in the challenging issue of understanding peoples knowledge of, and motivation to help save our environment and our planet. Further research is required to elucidate clearly the relationship between climate capability and eco-anxiety in this and other age groups.

Patients *should not* all be treated the same: a Scoping Review of General Practice training in Cultural Models.

Why is this Important?

Doctors training to become GPs are increasingly working in cross cultural consultations. Disparities in access to GP care and the quality of healthcare provided has been well documented. Cultural models (CMs) have developed as frameworks to equip medical professionals towards a more culturally appropriate healthcare system and reduce gaps in health care.

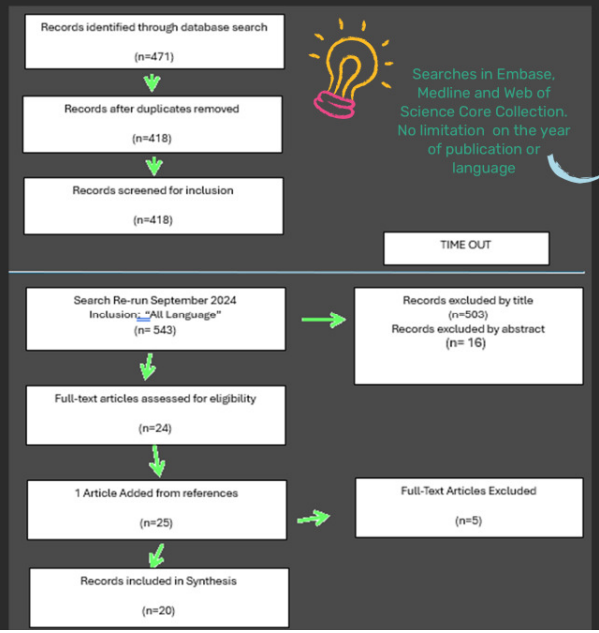
Aim

Scoping Review to map the use of cultural models within GP training internationally.

What Cultural Models?

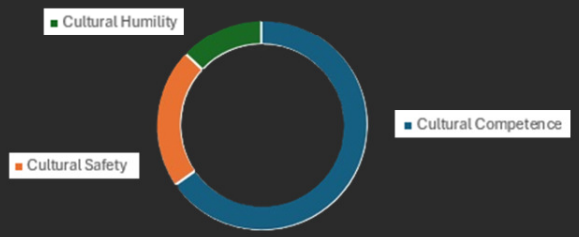
- Cultural Competence
- Cultural Safety
- Cultural Humility
- Transcultural Care...find out more here...

Methods



Results

- 20 Peer-Reviewed articles, published 2008-2024.
- Australia (n=10), USA (n=6), Sweden (n=2) Canada (n=1) Amsterdam (n=1).

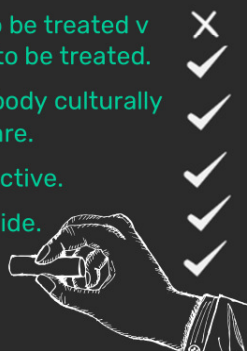


Themes

- Value of CMs.
- Barriers to CMs.
- CMs- the patient perspective and consultation.
- Informal learning on CMs.
- CMs and Cultural Mentors.

Key Learning Points

- Treat others the way you wish to be treated v treat others the way THEY wish to be treated.
- Person-centred care should embody culturally safe and culturally competent care.
- CMs prioritise the patient perspective.
- Wide disparity on use CM worldwide.
- Use of cultural mentors.



Lisa Collins (a), Helen Reid (b), Hinemoa Elder (c), Grainne Kearney (b)
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The General Practice Academic Research Training Scheme

Improving Asthma Management and Environmental Impact in an Academic General Practice in Ireland: A Quality Improvement Initiative

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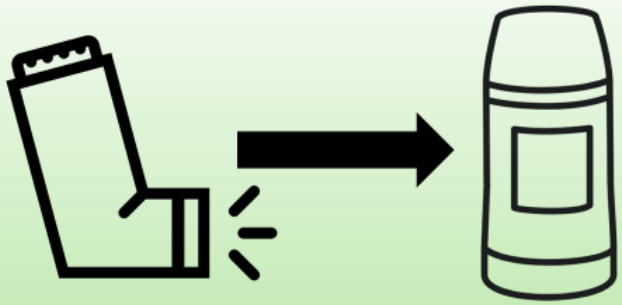
2. Salutem GP Clinic, Ovens, Ireland
3. Department of General Practice, University College Cork, Ireland
4. Irish Doctors for the Environment

Introduction

Asthma management has evolved significantly, with the 2024 Global Initiative for Asthma (GINA) guidelines recommending inhaled corticosteroid-formoterol (ICS-formoterol) over salbutamol relievers for individuals over 12 years of age. Additionally, pressurized metered dose inhalers (pMDIs), commonly used for asthma, contribute significantly to carbon emissions. Despite evidence of better outcomes with ICS-formoterol, many patients continue to use suboptimal regimens, presenting an opportunity for both clinical and environmental improvement.

Aims

This study aimed to improve adherence to the 2024 GINA guidelines within a family medicine practice by ***optimizing asthma therapy***. A secondary aim was to ***reduce the carbon footprint*** by promoting alternatives to pMDIs.



Decrease CO_2-equivalent emissions by 92g per actuation (that's like driving a petrol car 1 km!)

By changing the prescriptions of 28 patients, we estimate a reduction 1007 kgCO2e per year (that's about 1 transatlantic flight in economy class)

Methods

An EMR review identified patients aged 12 and above with asthma on suboptimal therapy. Eligible patients (n=53) were contacted via SMS or phone, informing them of the potential benefits of switching to ICS-formoterol and the environmental advantages of pMDI alternatives. Those who consented underwent therapy modification. Descriptive statistics were used to analyze changes in prescription patterns and estimate carbon emission reductions.

Results

Of 53 patients contacted, 28 consented to therapy changes, 23 did not respond, and 2 declined. Compliance with GINA guidelines increased from 59.1% to 79.6%. The proportion of pMDI prescriptions dropped from 33.5% to 18.6%, resulting in an estimated annual reduction of 1007 kgCO2e emissions

Conclusio

This initiative successfully optimized asthma management and reduced the environmental impact of inhaler prescriptions in a family medicine practice. The results highlight the dual potential of quality improvement initiatives in enhancing patient care and promoting environmental stewardship. Future studies should explore scaling such interventions to broader healthcare settings.

Enhancing Safety Measures for SGLT2 Inhibitors in Primary Care: An Audit of Current Practices and Interventions

Dr Sinead Woulfe, Dr Sorcha Boland, Dr Trish Horgan

Broadlane Family Practice, Blackpool, Cork

Introduction

The utilisation of SGLT2 inhibitors has risen substantially due to expanded evidence-based indications for patients with diabetes, renal failure, and heart failure. Many prescriptions are increasingly initiated in secondary care, posing challenges for safety monitoring in primary care. SGLT2 inhibitors carry known risks, including a 1/1000 incidence of normoglycemic ketoacidosis.

Aim

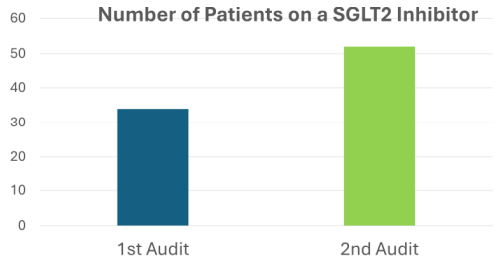
To assess safety measures associated with SGLT2 inhibitors in primary care and identify areas for improvement.

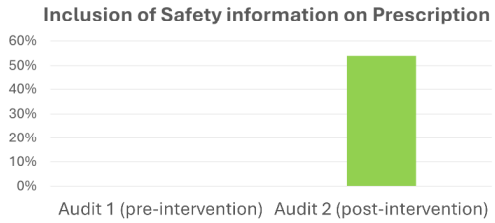
Methods

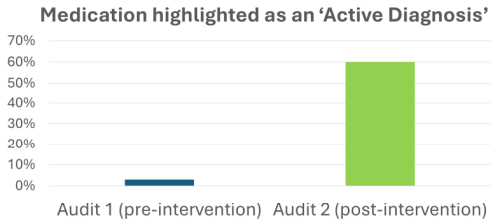
An audit of clinical notes was conducted for all patients on SGLT2 inhibitors in a GP practice in Cork, Ireland, in April 2024. Data collected included initiation date and indication, whether the medication was highlighted as an "active diagnosis," inclusion of safety information as free text on prescriptions, patient awareness of 'sick day rules', and renal function checks within six months. Interventions were introduced, including marking SGLT2 inhibitors as an "active diagnosis" and adding free text safety information to prescriptions. A repeat audit was conducted in December 2024

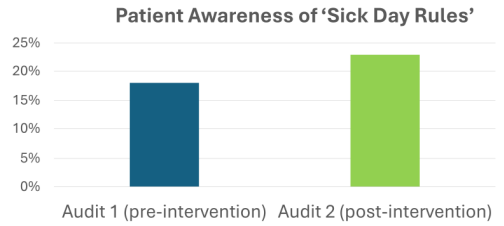
Results

The initial audit identified 34 patients on SGLT2 inhibitors. None of the prescriptions contained safety information. One chart (3%) highlighted the SGLT2 inhibitor as an "active diagnosis," and six (18%) documented awareness of 'sick day rules'. By the second audit, the number of patients increased to 52, reflecting wider secondary care initiation. Post-intervention, over half of the prescriptions included safety information (28/52, 54%), 60% (31/52) highlighted the medication as an "active diagnosis," and 12 charts (23%) documented awareness of ' sick day rules'.









Conclusion

This audit demonstrates the growing responsibility of primary care in managing patients initiated on SGLT2 inhibitors in secondary care. Interventions significantly improved safety documentation, but further efforts are required to ensure comprehensive patient education and safety.

"What Cycling injuries could you see as a General Practitioner in primary care?"

A systematic review and meta-analysis of cycling injuries and illnesses across all cycling disciplines

Thomas Fallon [1,2]; Debbie Palmer [2,3], Xavier Bigard [3]; Neil Heron [1,6]

[1] Centre for Public Health, Queen's University Belfast, Northern Ireland. [2] Edinburgh Sports Medicine Research Network & UK Collaborating Centre on Injury and Illness Prevention in Sport (UKCCIIS), Institute for Sport, PE and Health Sciences, University of Edinburgh.[3] Sport Injury Prevention Research Centre, University of Calgary.[4] Union Cycliste Internatione, Aigle, Switzerland.[5] Scottish Institute of Sport, Stirling, FK9 5PH. [6] School of Medicine, Keele University.

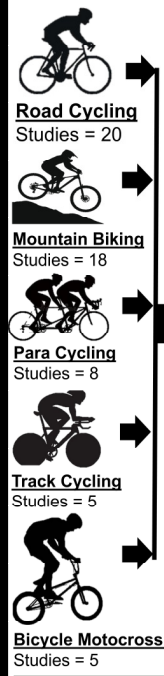
Introduction

- Competitive cycling consists of ten broad cycling disciplines, which break down into 40 sub-disciplines, all of which are governed by the World Body for Cycling, the Union Cycliste Internationale (UCI) [1,2]
- The UCI acknowledges the lack of epidemiological research within its Agenda 2030 and aims to "promote and support research in cycling epidemiology and medicine, especially for the benefit of lesser-known disciplines". [1,3]
- This systematic review and meta-analysis will provide a comprehensive synthesis of existing research on cycling-related injuries and illnesses across all competitive cycling disciplines, offering insights into what a General Practitioner may encounter in primary care.

Methods & Results

Design: Systematic epidemiological review and meta-analysis.
Data sources: PubMed (Medline), Embase, and SPORTDiscus were searched in January 2024.
Eligibility criteria: Studies with the primary focus on injuries and/or illness in ay competitive cycling discipline between 1946 & January 2024
PROSPERO registration number: CRD42024502703

1. Search: 409 Studies Identified- 263 Duplicates Removed
2. Screened: 165 Studies Screened
3. Review: 56 Studies Made full text review
4. Included: 44 Studies Included
5. 4 Studies Represented More than One Discipline



Road Cycling
Studies = 20

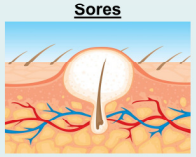
Mountain Biking
Studes = 18

Para Cycling
Studies = 8

Track Cycling
Studies = 5

Bicycle Motocross
Studies = 5

Skin Lesions & Saddle Sores

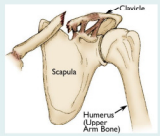


Prevalence:
Skin lacerations and abrasions, including saddle sores, are common, particularly among long-distance cyclists.

Clinical Consideration:
Advise on prevention strategies for skin injuries (e.g., appropriate clothing, skin protection, and good hygiene).

For cyclists with saddle sores, providing treatment and education on proper care and preventive measures (e.g., clothing and saddle adjustments) is essential.

Bone Fractures



Prevalence:
Bone fractures, especially in road cycling, are a common injury, linked to falls and high-impact crashes.

Clinical Consideration:
Be proactive in diagnosing and treating fractures, ensuring proper healing through referrals to orthopaedics or physiotherapy when needed.

GPs should also be aware of the risk of Relative Energy Deficiency in Sport (REDs) among cyclists, which could predispose them to fractures.

The LEAM and LEAF questionnaire can be used for RED-S screening to help identify athletes at risk

Concussion

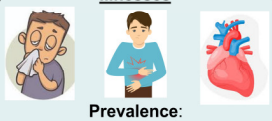
Prevalence:
Concussion remains underdiagnosed across various cycling disciplines.

Clinical Consideration:
GPs should be familiar with concussion protocols and guidelines, ensuring cyclists are appropriately managed after an incident.

They should also educate cyclists on concussion symptoms and recovery timelines.

The UCI concussion education video, concussion pocket cards, and the SCAT6 assessment are useful tools for educating, diagnosing and managing concussions in cycling.

Illnesses



Prevalence:
Gastrointestinal and respiratory illnesses, are common across disciplines.

Clinical Consideration:
Advice on illness prevention, such as proper hydration, food hygiene, and avoiding environmental triggers (e.g., polluted air or muddy trails). Consider incorporating Vitamin C, zinc, and a probiotic into your routine to support immune health.

Cardiovascular
Prevalence:
Higher rates of cardiovascular illness have been noted, particularly in recreational road cycling.

Clinical Consideration:
Consider routine cardiovascular screening for cyclists, particularly in those participating in high-intensity events or long-duration races with a family Hx of CVD.

Key Take Homes

- **Common Cycling Injuries** – Saddle sores, abrasions, and skin lesions are frequent, with clavicle fractures being the most common upper limb injury.
- **Concussions** Are Underdiagnosed – Head injuries, including concussions, often go unrecognised, emphasizing the need for better awareness and protocols.
- **Cardiac Health Awareness** – There is a notable rate of cardiac illness in cycling, highlighting the importance of awareness and the benefits of screening, particularly for those with a family history.
- **GPs' Role in Prevention & Management** – General Practitioners should focus on injury prevention, early diagnosis, and tailored care, including concussion protocols and sport-specific medical guidance.

Reference List

[1] Union Cycliste Internationale. Agenda 2030, https://assets.ctfassets.net/761l7gh5x5an/6RrOHtU0QlyN80MDJ7vJm3/cf54c913960a66a71baaac379ef12b88/2022_UCI_AGENDA2030_web_EN.pdf
[2] Clarsen B, Pluim BM, Moreno-Pérez V, et al. Methods for epidemiological studies in competitive cycling: An extension of the IOC consensus statement on methods for recording and reporting of epidemiological data on injury and illness in sport 2020. *Br J Sports Med* 2021; 55: 1262–1269.
[3] Bahr R, Clarsen B, Derman W, et al. International Olympic Committee consensus statement: methods for recording and reporting of epidemiological data on injury and illness in sport 2020 (including STROBE Extension for Sport Injury and Illness Surveillance (STROBE-SIIS)). *Br J Sports Med* 2020; 54: 372–389.

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TFallon_Physio

Prevalence and demographic variation of chronic respiratory diseases (CRDs) in a large English primary care database

George Morris, Priya Sarkar, Jennifer Cooper, Shamil Haroon
Department of Applied Health Sciences, University of Birmingham

UNIVERSITY OF BIRMINGHAM

Background

- CRDs contribute significantly to morbidity and mortality in England.
- Growing recognition of overlaps between CRDs, particularly Asthma COPD Syndrome (ACOS).

Aims

- Estimate CRD prevalence & co-prevalence
- Examine sociodemographic variations
- Comparison with other epidemiological sources.

Objectives

1. **Ascertain** the **prevalence** of 5 CRDs in CPRD Aurum
2. **Stratify** each prevalence estimate by age, sex, ethnicity & socioeconomic deprivation.
3. Establish the **degree** of **overlap** in the prevalence of these CRDs.
4. Systematically **compare** CPRD prevalence estimates with **other epidemiological sources**: other EHRs, self-reported doctor diagnosed cases (surveys), and screening type studies.

Methods: Analysis

1. & 2. Crude prevalence calculated for each CRD. **Cross-tabulated** by sociodemographic factors.

Odds Ratios (ORs) from logistic regression adjusted for sociodemographic factors & other CRDs

3. Cross-tabulation to find CRD prevalence in other CRD subpopulations

4. CPRD age-matched **prevalence** plotted against. comparator sources. **Grouped by source type** across CRDs

Design

Cross-sectional (01/01/20)

14.3M records

Data extraction: Dexter

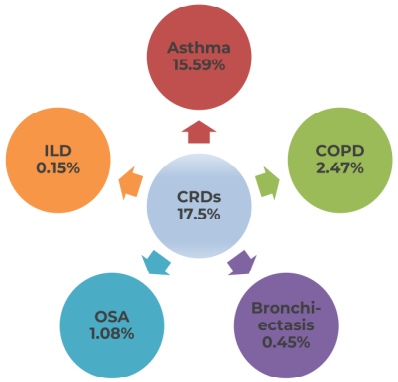
Data analysis: Stata 17 SE

Results

Table 1: Crude prevalence of CRDs in CPRD Aurum by sociodemographic characteristics.

	Asthma (ever)	Asthma (current)	COPD	Bronchiectasis	ILD	OSA
% of whole sample (n=14265404)	15.59%	7.52%	(2.47%)	(0.45%)	(0.15%)	(1.08%)
Age categories						
0 - 16 years	9.70%	5.30%	0.00%	0.03%	0.01%	0.54%
17 - 30 years	18.76%	4.86%	0.00%	0.05%	0.01%	0.31%
31 - 40 years	17.00%	5.38%	0.05%	0.08%	0.02%	0.56%
41 - 50 years	15.78%	7.49%	1.03%	0.18%	0.05%	1.23%
51 - 60 years	15.69%	9.03%	2.97%	0.38%	0.12%	1.99%
61 - 70 years	16.48%	11.24%	6.77%	1.00%	0.30%	2.32%
70+ years	17.87%	12.86%	10.49%	2.07%	0.81%	1.47%
Sex						
Male	15.18%	6.70%	2.47%	0.37%	0.17%	1.51%
Female	16.01%	8.37%	2.46%	0.52%	0.14%	0.64%
Ethnicity						
White	17.11%	8.61%	3.13%	0.54%	0.18%	1.22%
Asian	11.88%	6.24%	0.73%	0.26%	0.11%	0.80%
Black	11.63%	5.51%	0.75%	0.20%	0.08%	1.18%
Mixed ethnicities	6.89%	2.85%	0.40%	0.10%	0.03%	0.58%
Other ethnicities	14.08%	6.38%	0.65%	0.14%	0.05%	0.90%
IMD Quintile						
1 - Least deprived	15.55%	7.14%	1.75%	0.52%	0.16%	1.00%
2	15.49%	7.31%	2.17%	0.50%	0.16%	1.07%
3	15.30%	7.28%	2.38%	0.43%	0.15%	1.08%
4	15.13%	7.35%	2.60%	0.38%	0.14%	1.10%
5 - Most deprived	16.60%	8.50%	3.38%	0.42%	0.15%	1.21%
Smoking Status						
Non-smoker	15.74%	6.45%	0.44%	0.35%	0.10%	0.80%
Ex-smoker	20.65%	11.65%	4.75%	0.90%	0.33%	1.77%
Current smoker	18.81%	9.28%	5.13%	0.42%	0.16%	1.24%

Figure 1: Crude prevalence of CRDs in CPRD Aurum

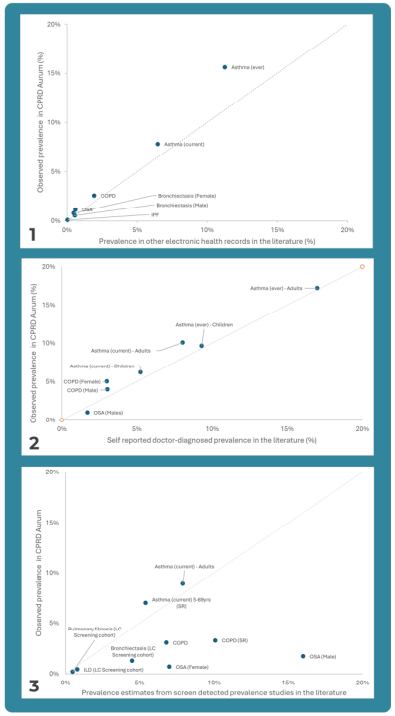


Results (contd.)

Table 2: Co-occurrence of CRDs in CPRD Aurum

	Asthma (Ever)	Asthma (Current)	COPD	Bronchiectasis	ILD	OSA
Asthma (Ever)			10.35%	1.52%	0.33%	1.88%
Asthma (Current)			19.11%	2.66%	0.51%	2.57%
COPD	65.35%	58.24%		0.07%	0.85%	3.79%
Bronchiectasis	53.02%	44.86%	37.13%		3.87%	3.92%
ILD	33.03%	25.02%	26.41%	11.25%		4.41%
OSA	27.11%	17.89%	8.66%	1.62%	0.63%	

Graphs 1-3: Comparisons to other sources



Results: Summary

- **CRD Prevalence: 17.5%** overall, highest for lifetime asthma.
- **Age:** Asthma peaks at 17–30 years; other CRDs **increase** with **age**.
- **Sex:** Asthma & bronchiectasis slightly **higher** in **females**; COPD, ILD, & OSA **higher** in **males** (**OSA** markedly so).
- **Ethnicity:** Highest CRD prevalence in **White** group, lowest in Mixed; Post-adjustment, asthma & COPD differences remained; **ILD** odds slightly **higher** in **Asians**.
- **Deprivation:** Most CRDs **increased** with **deprivation** (except bronchiectasis & ILD); trend persisted post-adjustment.
- **Smoking:** CRDs **more** common in **smokers**, especially COPD; ex-smokers had the highest prevalence.
- **Overlap:** Strong **asthma-COPD co-occurrence** (⅔ of COPD cases had asthma).
- **Comparison to Other Sources:** CPRD estimates slightly **higher** than **EHRs/self-reported surveys**; **screening** studies reported **higher prevalence** (especially OSA).

Conclusion

- CRDs are **common**,; significant **overlap**, especially with asthma.
- **Age**, **deprivation**, & **smoking increase CRD** risk.
- **Primary care EHRs align** with **other sources**, but **screening** studies suggest **underdiagnosis** (notably **OSA**).
- Sociodemographic differences may reflect true prevalence or **variations in diagnosis** & coding.

Future implications

- **Long-term studies** on **co-occurring CRD outcomes.**
- **Personalised healthcare** based on sociodemographic variations.
- More standardised diagnostic codes/improve EHR data -> more accurate prevalence estimates .