

# Comorbidity medications are dispensed to more people receiving antiretroviral therapy compared with the general population in Australia

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## Background

People with HIV are living longer and developing more ageing-related medical comorbidities<sup>1,2</sup>.

Compared to people without HIV, people with HIV develop more comorbidities<sup>3-5</sup>.

In 2017, 40% of people with HIV in Australia were aged 50 or older<sup>6</sup>.

Australia's National HIV Strategy has highlighted the importance of optimally managing medical comorbidities in Australia's ageing HIV population.

**AIM:** To determine whether people purchasing antiretroviral therapy (ART) have a higher burden of medical comorbidities than people not purchasing ART.

## Methods

A 10% longitudinal sample of PBS data was used<sup>7</sup>

- ART-purchasing cohort:
  - Purchased ART between Jan – Dec 2016
  - Alive at the end of 2016

- Non-ART purchasing “control” cohort:
  - Two patients matched on age group and gender to each ART-purchasing individual
  - Did not purchase ART during 2016

Comorbidity medication classes were determined using PBS coding categories:

- Anti-hypertensives
- Lipid-lowering medications
- Diabetes medications
- Anti-neoplastic medications
- Medications for osteoporosis or low bone mineral density (excluding vitamins and supplements)
- Mental health medications

Medications purchased within the same calendar year (2016) were included.

Unadjusted odds ratios for ART and non-ART patients with 95% confidence intervals were calculated.

## Results

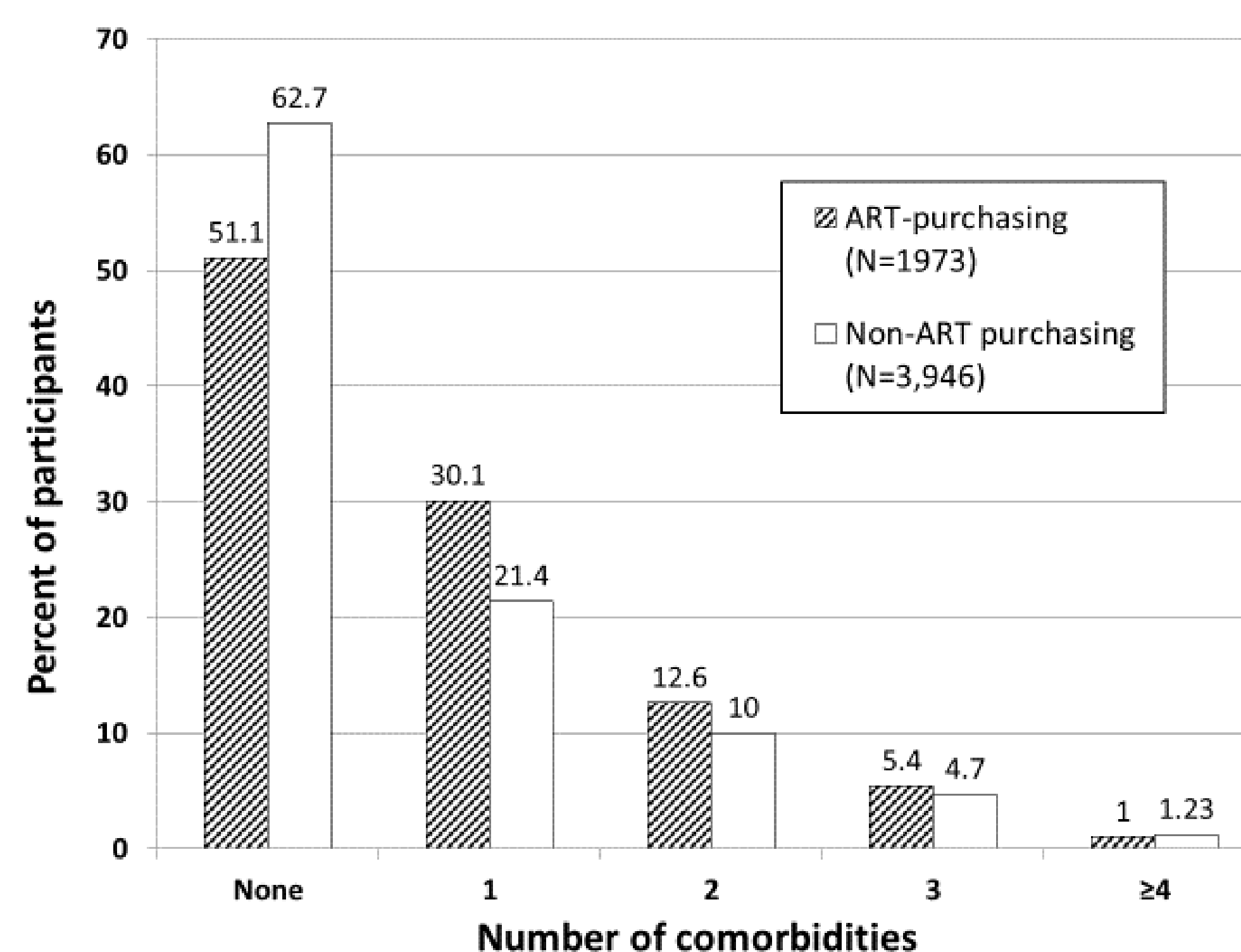
1,995 patients purchased ART in our 2016 sample

22 excluded (died during 2016); 1,973 patients matched to 3,946 controls

- Overall, 88% male; median age 49 years
- A greater proportion of ART-purchasing patients purchased medications for (**Table**):
  - Dyslipidemia
  - Osteoporosis or low bone mineral density
  - Mental Health (depression, anxiety, antipsychotics)
  - Fewer ART-purchasing patients purchased medications for diabetes
  - Significant only for oral hypoglycemics

Overall, these findings persisted when the analysis was restricted patients >55 years (**data not shown**).

A greater proportion of ART-purchasing patients had two or more comorbidities than non-ART purchasing patients (**Figure**).



**Figure.** Proportion of ART-purchasing and non-ART purchasing patients with comorbidities including: hypertension, diabetes, hyperlipidemia, mental health disorders (schizophrenia, bipolar, depression and anxiety), osteoporosis or low bone mineral density, and cancer.

**Table.** Co-prescription purchases among ART-purchasing and non-ART purchasing patients in 2016

Co-prescription Purchases	ART-purchasing N=1973 n (%)	Non-ART purchasing N=3946 n (%)	OR (95% CI)	p-value
<b>Anti-hypertensive</b>	383 (19.4)	798 (20.2)	0.95 (0.83 – 1.09)	0.46
<b>Lipid-lowering medication</b>	390 (19.8)	655 (16.6)	1.23 (1.08 – 1.42)	0.003
<b>Diabetes medication</b>	95 (4.8)	258 (6.5)	0.72 (0.57 – 0.92)	0.009
<b>Oral agents only</b>	63 (3.2)	169 (4.3)	0.74 (0.55 – 0.99)	0.042
<b>Insulin and oral agents</b>	21 (1.1)	55 (1.4)	0.76 (0.46 – 1.26)	0.29
<b>Anti-neoplastic medications</b>	17 (0.9)	35 (0.9)	0.97 (0.54 – 1.74)	0.92
<b>Osteoporosis or low bone mineral density medications</b>	29 (1.5)	32 (0.8)	1.82 (1.10 – 3.02)	0.020
<b>Mental health medications</b>	575 (29.1)	602 (15.3)	2.28 (2.01 – 2.60)	<0.0001
<b>Depression</b>	424 (21.4)	472 (12.0)	2.01 (1.74 – 2.30)	<0.0001
<b>Anxiety<sup>a</sup></b>	257 (13.0)	188 (4.8)	2.99 (2.46 – 3.64)	<0.0001
<b>Bipolar Disorder<sup>b</sup></b>	13 (0.7)	14 (0.4)	1.86 (0.87 – 3.97)	0.11
<b>Antipsychotics</b>	103 (5.2)	83 (2.1)	2.56 (1.91 – 3.44)	<0.0001

<sup>a</sup> Benzodiazapines only  
<sup>b</sup> Lithium only

## Conclusions

We identified significantly higher rates of co-prescription purchases for dyslipidaemia, bone disease and mental health, and lower rates for diabetes among ART-purchasing persons.

Dispensing data provide real-time mechanisms to understand trends in medication dispensing and may be used to characterize the burden of medical comorbidities in persons with HIV and prioritize strategies to reduce them.

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