

HIV co-morbidities and their impact on attendance frequency at HIV clinics in England & Wales

Findings from the Positive Voices Survey 2017 linked to national cohort data

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BACKGROUND

As people with HIV live longer due to effective treatment, increasing numbers may experience co-morbidity, impacting upon HIV service use, as well as quality of life. Using national cohort and patient survey data we examine the impact of co-morbidity on HIV service attendance patterns.

METHODS

Positive Voices is a cross-sectional survey of 4,424 people attending 73 HIV clinics in England & Wales, recruited Jan-Sept 2017 (51% response rate).

Survey responses were linked to clinical data on adults attending specialist HIV clinics in England in 2017. Overall, **3,861** individuals had clinical data available and were included in the analysis (Figure 1).

A multivariable regression controlling for age, gender, ethnicity, viral load suppression (≤ 200 copies/mL) and HIV risk group was used to assess the effects of co-morbidities on consultation frequency.

Clinical consultation cost (excluding ART) was estimated as £450 [1] and co-morbidity related additional visit costs were calculated based on this.

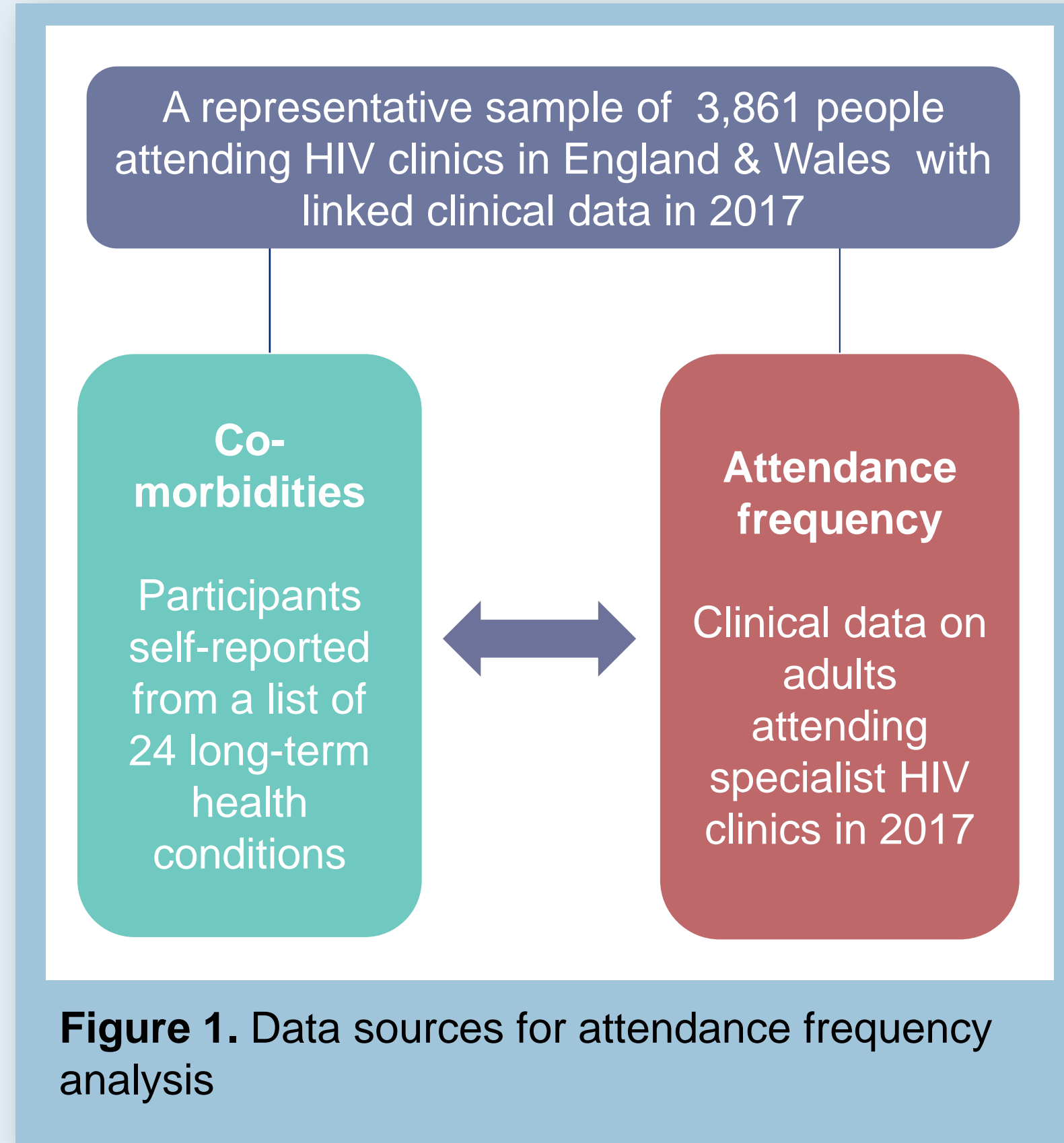
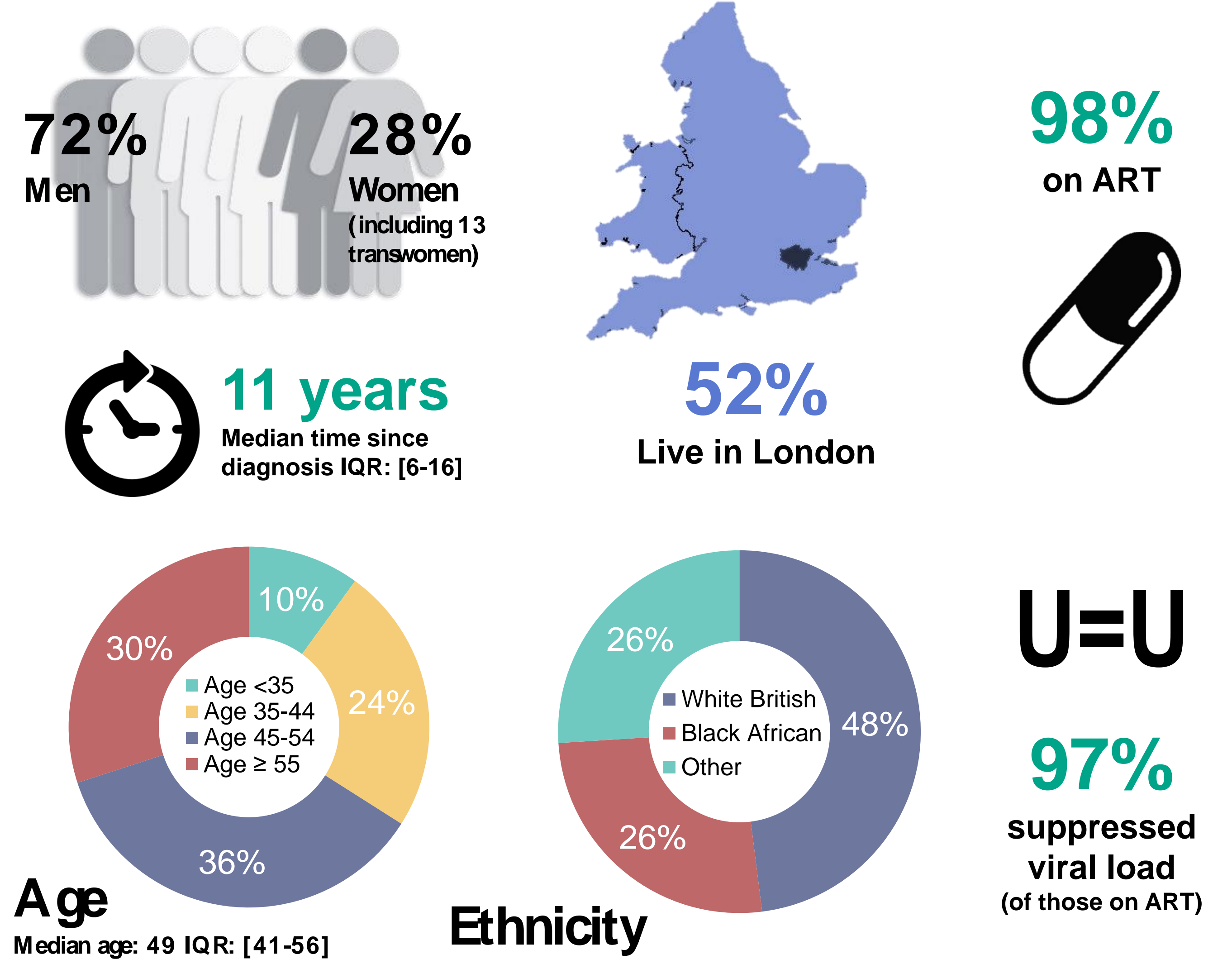


Figure 1. Data sources for attendance frequency analysis

PARTICIPANT CHARACTERISTICS (n=3,861)



RESULTS

Among 3,861 respondents with clinic data available, the total number of HIV clinic visits in 2017 was **12,602**.

Median attendances in 2017: **3 [2-4]**
Attendances were highly skewed (Figure 2).

71% self-reported ≥ 1 co-morbidity
33% reported ≥ 3 conditions (Figure 3).

Respondents in the highest decile of HIV consultations:

- Attended a median of 7 [IQR: 6-9] (range 6-27) times in a year;
- Accounted for 25% of all HIV consultations.

The most common conditions were: (Figure 4)

- **Depression (31%),**
- **High cholesterol (27%),**
- **Anxiety (24%),**
- **High blood pressure (21%)**
- **Sleep disorder/insomnia (14%)**

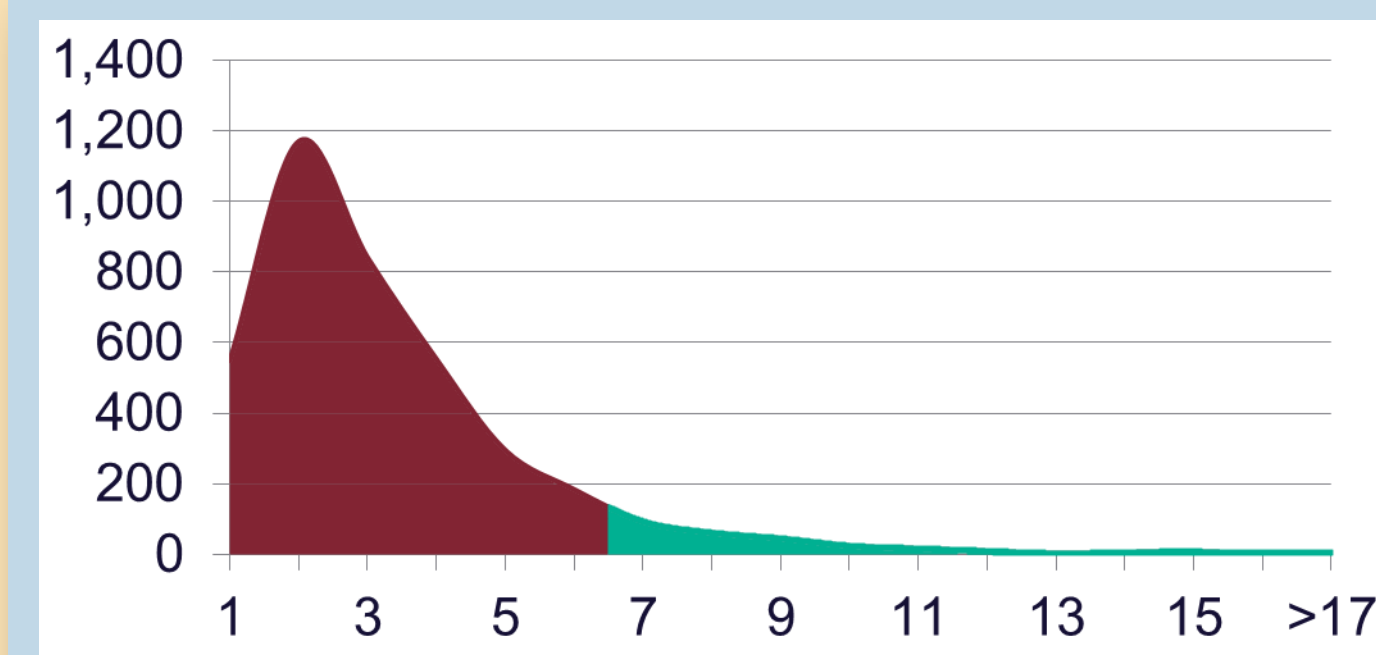


Figure 2. Distribution of annual attendances, highest decile of attendances shown in green

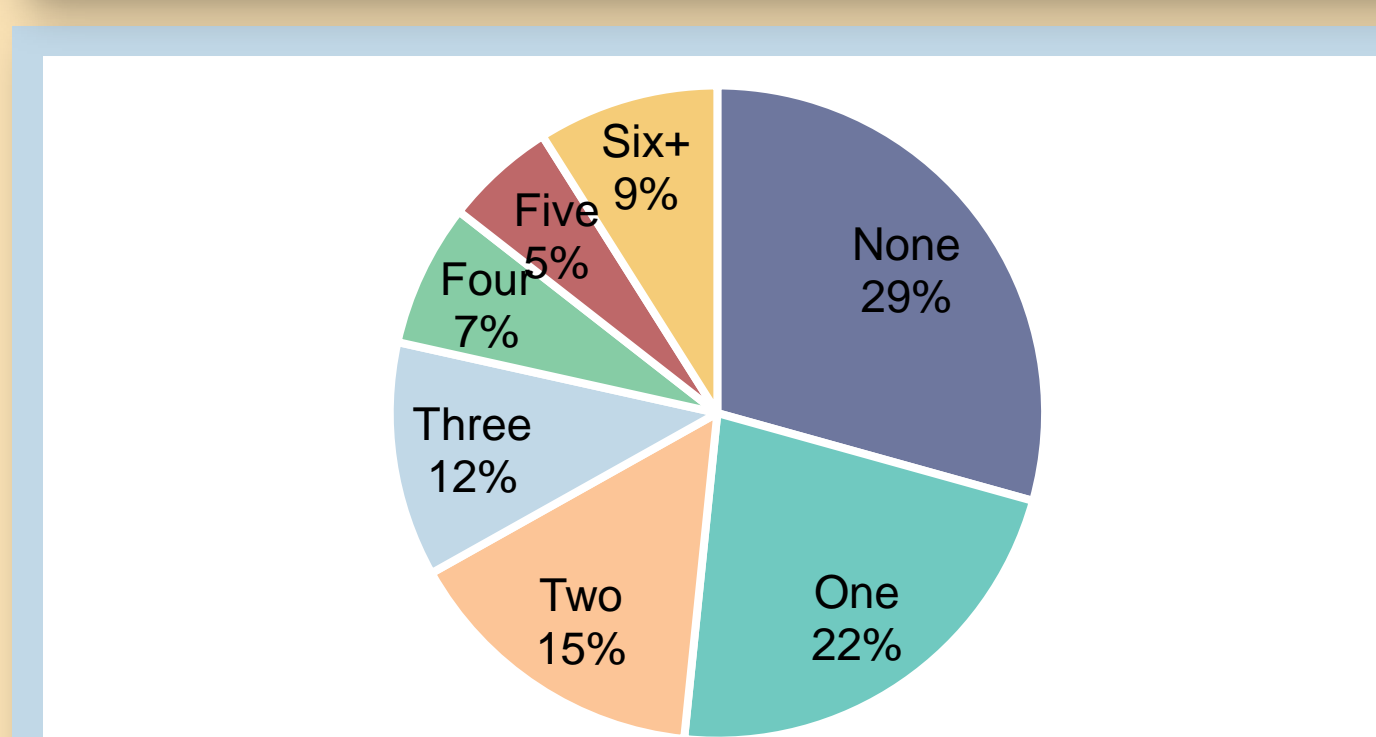
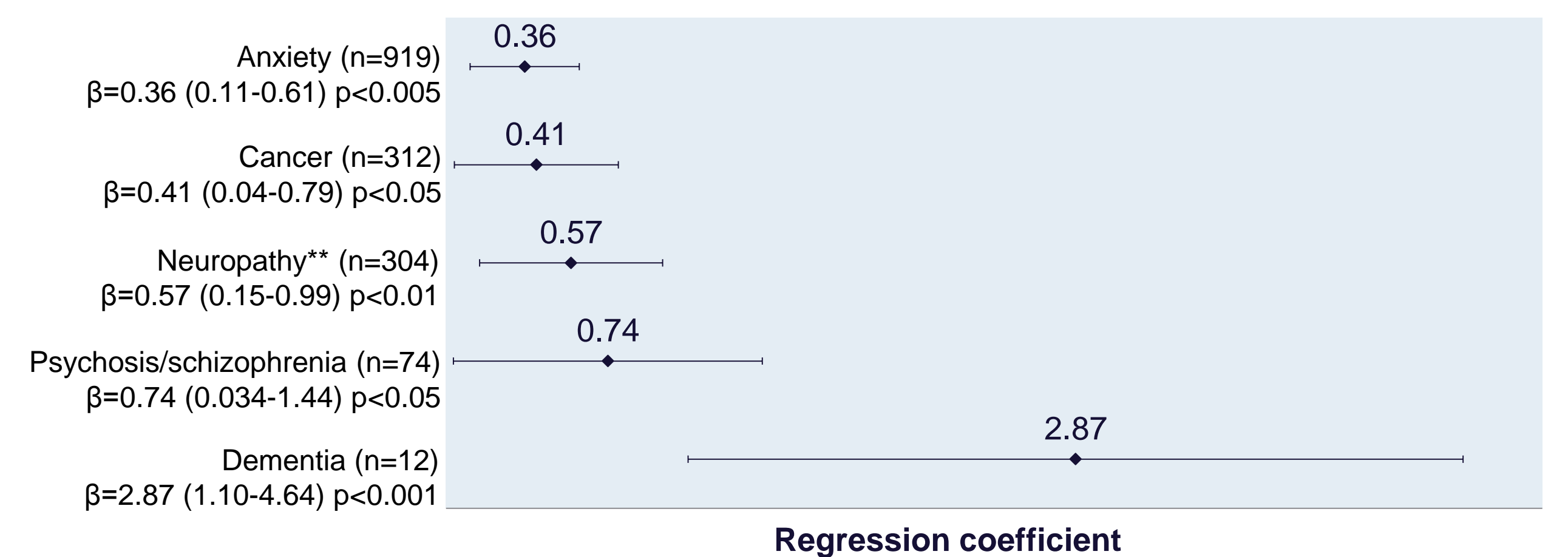


Figure 3. Burden of co-morbidity

Multivariable regression for consultation frequency

In multivariable regression controlling for age, gender, ethnicity, VL suppression and HIV risk group, there was a significant **positive association** between **consultation frequency** and the **number of co-morbidities** reported by a patient ($\beta=0.16$ (0.12-0.20), $p<0.001$) †.

Dementia was most strongly associated with consultation frequency, alongside psychosis/schizophrenia, neuropathy/peripheral neuropathy, cancer, and anxiety (Figure 5).



*including peripheral neuropathy
Results are given as regression coefficient (95% confidence interval boundaries) and P value.
† Regression coefficient (β) is the change in consultations for a given characteristic, after controlling for other factors i.e. coefficient of 0.36 means 0.36 additional consultations per year or 2.87 means 2.87 additional consultations per year

Figure 5. Results of multivariable regression model for consultation frequency adjusted for age, gender, ethnicity and HIV risk group

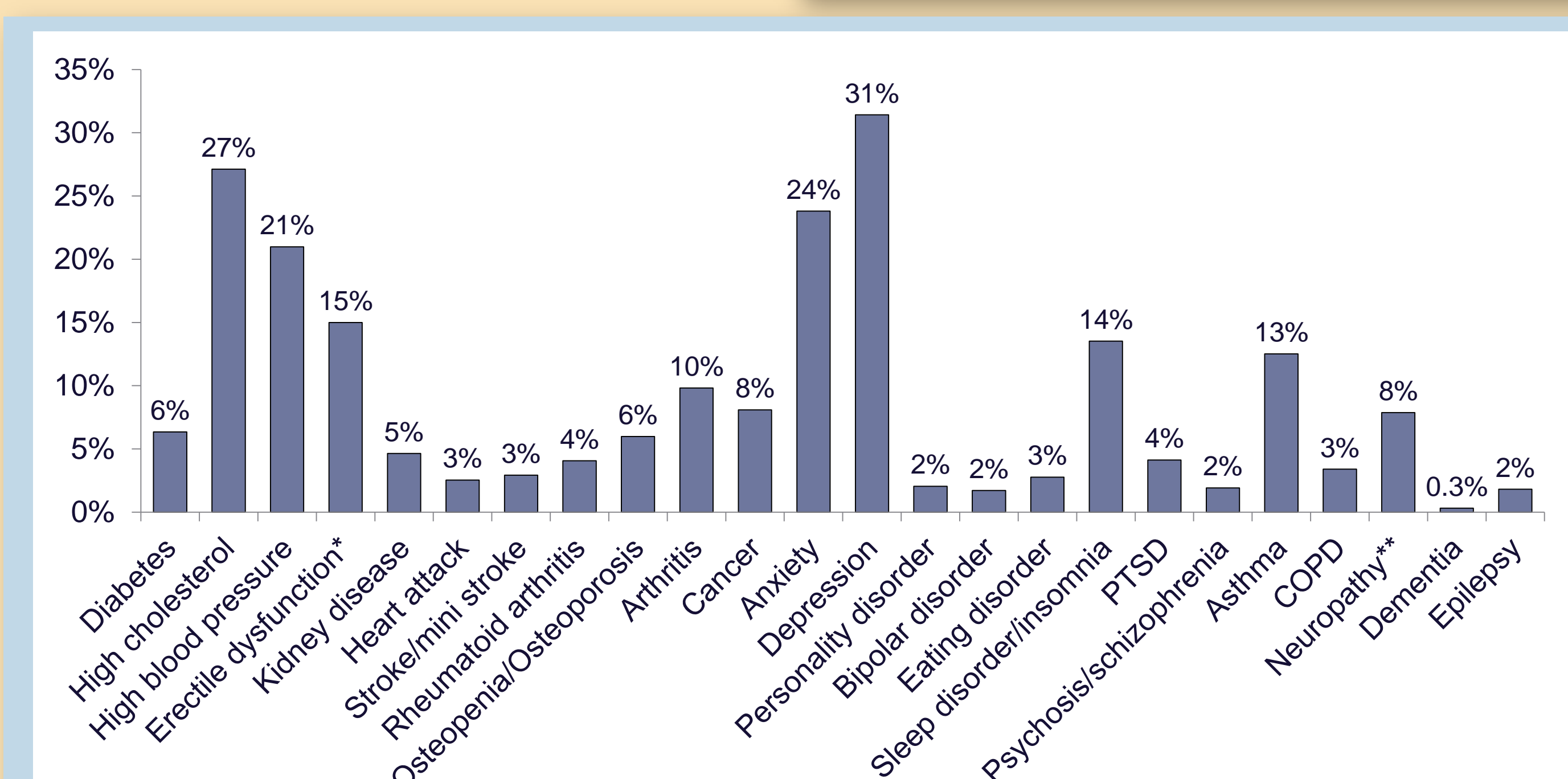
Additional HIV clinic attendance costs of co-morbidity

It was estimated 12,602 HIV clinic visits cost £5.67M per annum (12,602 visits at £450 per visit). The incremental cost per patient (per annum) of additional HIV clinic visits incurred due to presence of co-morbidities with significant effect was calculated using estimates from the multivariable regression model (Table 1)

Condition	Regression coefficient	Additional cost (per annum)	95% confidence interval	
			Lower	Upper
Anxiety	0.36	£162	£49	£274
Cancer	0.41	£185	£17	£354
Neuropathy*	0.57	£257	£69	£445
Psychosis/schizophrenia	0.74	£333	£15	£649
Dementia	2.87	£1292	£497	£2088

*including peripheral neuropathy

Table 1. Incremental costs of five co-morbidities associated with increased HIV clinic visits



*prevalence of erectile dysfunction among men **including peripheral neuropathy

Figure 4. Prevalence of each condition among 3,861 respondents with clinic attendance data

LIMITATIONS

- These data, whilst covering a wide variety of complex health conditions, represent patient-reported conditions at any time within the past 10 years. It was not possible to determine recency or severity of each co-morbidity.
- Data are limited to respondents to the Positive Voices survey and people who were able to be linked to HIV specialist care attendance records. Whilst this survey was broadly representative of the population of people living with HIV, results may not be generalisable to the overall population.
- This analysis was not able to provide an insight into the time and resources spent on an individual patient, or resource utilisation outside of the HIV clinic, which may be greater for people with complex needs. These data items are not currently collected through the national HIV surveillance cohort dataset (HARS).

CONCLUSIONS

- In this engaged cohort of people living with HIV, almost three-quarters were diagnosed with a non-HIV co-morbidity.
- Our results show a significant association between co-morbidity burden and increased clinic attendance, with neurological and mental health conditions associated with the most extra HIV clinic attendances, alongside cancers.
- Monitoring the increasing burden of co-morbidities, and resulting financial and resource impact, is needed to plan the future of HIV services and the need for integrated health services.
- The definition of a "complex" patient [2] should continue to be refined to include information about attendance frequency, which may indicate presence of co-morbidities not currently collected through HARS.

ACKNOWLEDGEMENTS

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REFERENCES

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2. Kirwan PD et al. Assessing the clinical complexity of a national cohort of adults accessing HIV outpatient care. April 2017. HIV Medicine, 18 (Suppl. S1) 3-13