Victoria Higgins,[1] Mark Duman,[2] Andrea Leith,[1] Sophie Barlow,[1] James Pike,[1]
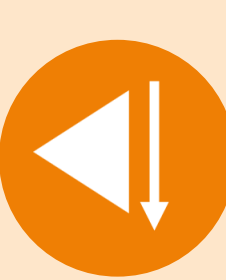[1] Adelphi Real World, Bollington, UK; [2]MD Healthcare, Salford, United Kingdom

Adelphi | ADELPHI REAL WORLD | Leadership in Real World Evidence

Background and Objective

> Obesity is a complex, chronic condition requiring sustained lifestyle changes, and often pharmacological and/or surgical interventions.

> Despite the availability of effective treatments, adherence to lifestyle changes and treatment regimens remains a key determinant of real-world outcomes.[1]

> Yet in real-world settings, treatment success hinges not just on clinical efficacy, but on the lived experiences of people navigating these lifestyles and therapies.[2]

> Adherence is shaped by factors such as affordability, perceived effectiveness, and tolerability.[2]

> Understanding what drives or disrupts adherence from the patient perspective is essential to design interventions that truly meet their needs.[3]

> This analysis aimed to identify drivers of adherence in people living with obesity (PLwO) in a real-world clinical practice setting.

Methodology

Source: Adelphi Real World Obesity Disease Specific Programme (DSP)™

Cross-sectional survey of physicians and PLwO

Conducted in Europe, the United States and Australia from **Oct 2023 – Apr 2024**

The DSP methodology has been described, validated and demonstrated to be representative and consistent over time.[4-7]

Physicians completed questionnaires for eight consecutively consulting PLwO. The same PLwO were invited to complete a voluntary questionnaire, independent from their physician/healthcare practitioners.

	👤 Physicians	👤 People Living with Obesity
Inclusion criteria	• Primary care physician; internist; diabetologist; endocrinologist; cardiologist or obstetrician/ gynaecologist (*differed by region*). • Responsible for management of ≥10 PLwO/month.	• Current/previous BMI ≥30 or BMI ≥27 with >1 weight related comorbidity • At time of data capture: > On a weight management programme > Not on a clinical trial for obesity
Information provided	• Body mass index (BMI), sociodemographics, comorbidities, obesity duration and number of obesity medicines for PLwO.	• Lifestyle behaviours, medication experiences, information sources • Adherence using the 11-item **AD**elphi **A**dherence **Q**uestionnaire© (**ADAQ**; where 0=adherent, 4=non adherent)[8-10]

Statistical analysis

A linear elastic net regression with 10-fold cross-validation was used to determine which PLwO characteristics were predictive of ADAQ. P-values were derived through bootstrapping with 1000 iterations.
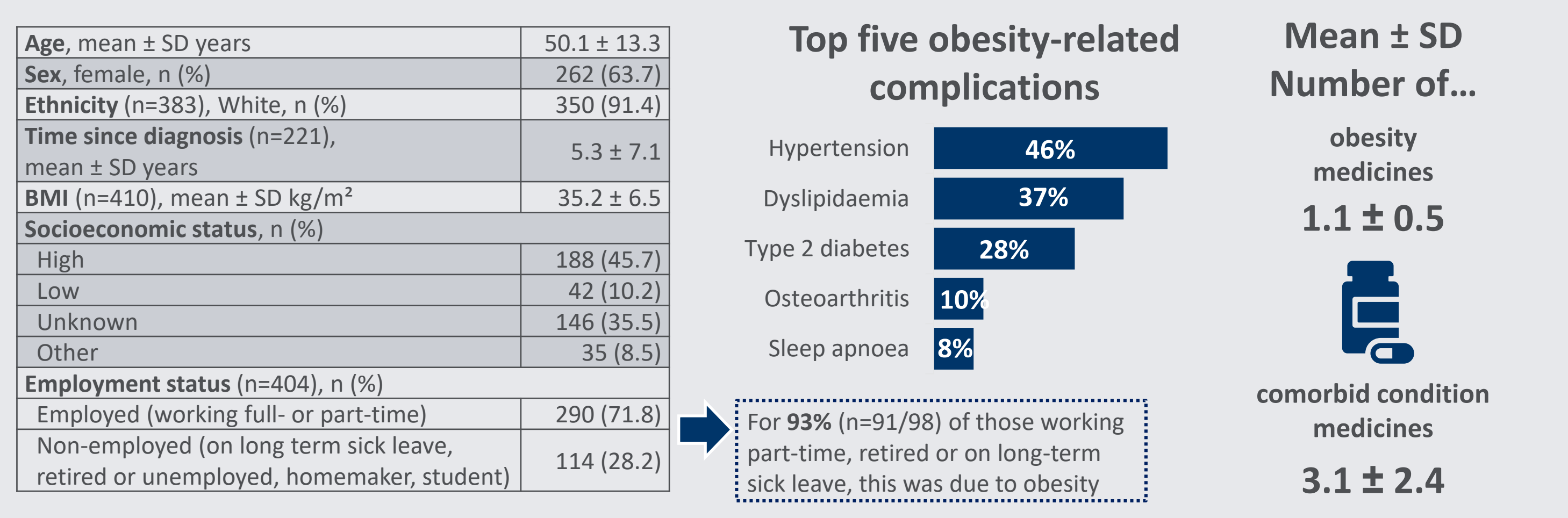
† **PLwO characteristics input into the model (including 318 variables across 8 themes):**
1. <u>Demographics</u>: Age, employment, smoking and socioeconomic status, rural/urban living, consultation preference
2. <u>Access/Out of Pocket</u>: health insurance status, monthly income spent on obesity
3. <u>Quality of life</u>: health-related quality of life, sleep evaluation
4. <u>Support</u>: comfort talking to family/friends about weight, information sources used
5. <u>Lifestyle</u>: Level of change to i) lifestyle, and ii) lifestyle changes recommended by physician
6. <u>PLwO feelings</u>: Feelings towards i) diet/exercise programme, ii) how well weight management plan was explained, iii) how well understanding how to lose weight, iv) happiness with weight, v) embarrassment about weight in public, vi) if others made PLwO feel shame in public, vii) putting weight on in future, viii) tasks important to do to help manage weight loss, ix) tasks which are most difficult to do when losing weight, and x) if have enough information about how to manage weight
7. <u>Weight loss history</u>: phenotype, aetiology, number of weight loss attempts, whether weight loss attempts are periodical or all the time, paths to access/support used, current weight loss methods used, reasons for stopping weight loss attempt in past, and what PLwO are hoping for/has happened when lose/lost weight
8. <u>Weight loss medicine</u>: telemedicine prescribing, reasons for taking prescribed medication, reasons for stopping prescribed medication
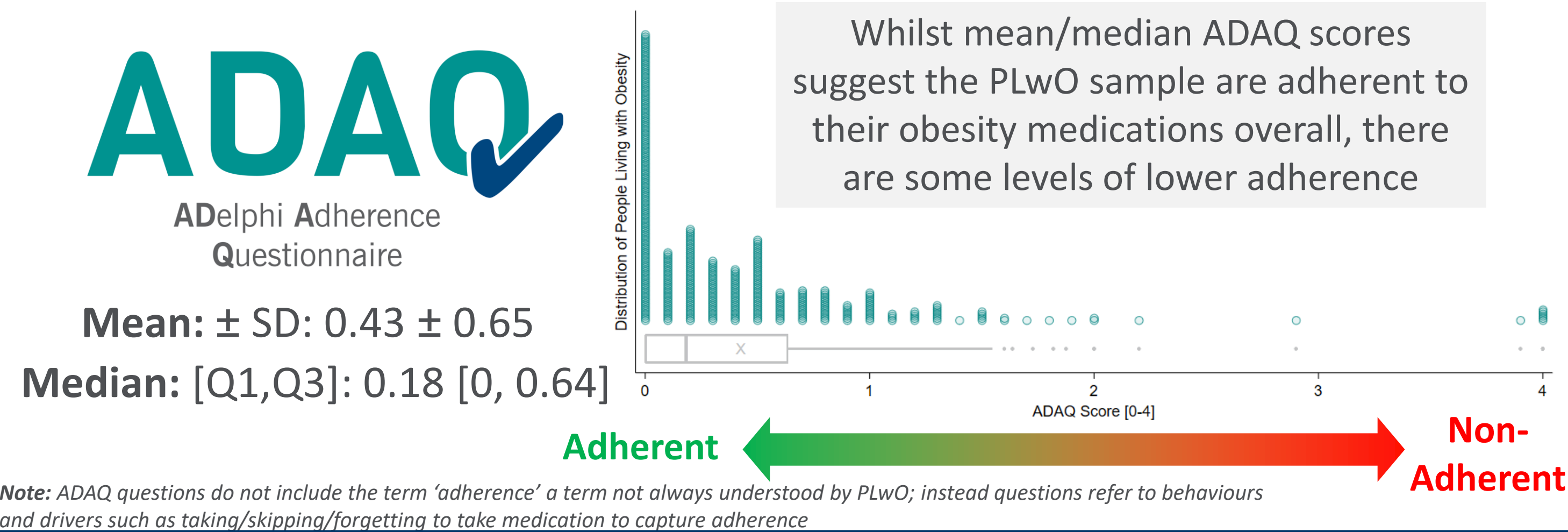
Results

> A total of 201 physicians reported on 411 PLwO whom had a corresponding self-completed questionnaire.

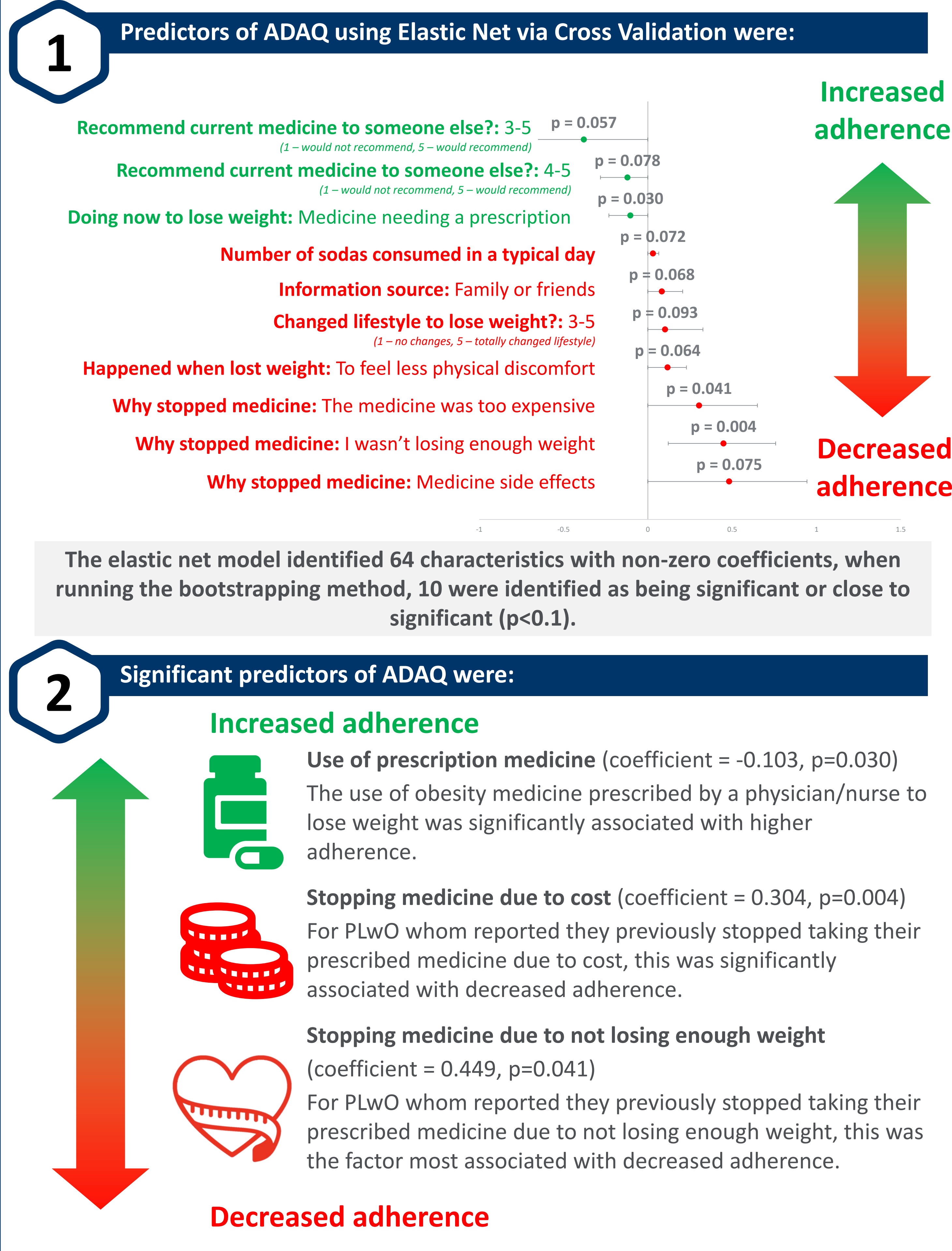### Figure 1. Sociodemographics and Clinical Characteristics of PLwO at data capture, n=411

Age, mean ± SD years	50.1 ± 13.3
Sex, female, n (%)	262 (63.7)
Ethnicity (n=383), White, n (%)	350 (91.4)
Time since diagnosis (n=221), mean ± SD years	5.3 ± 7.1
BMI (n=410), mean ± SD kg/m²	35.2 ± 6.5
Socioeconomic status, n (%)	
High	188 (45.7)
Low	42 (10.2)
Unknown	146 (35.5)
Other	35 (8.5)
Employment status (n=404), n (%)	
Employed (working full- or part-time)	290 (71.8)
Non-employed (on long term sick leave, retired or unemployed, homemaker, student)	114 (28.2)

For 93% (n=91/98) of those working part-time, retired or on long-term sick leave, this was due to obesity

Top five obesity-related complications

Hypertension	46%
Dyslipidaemia	37%
Type 2 diabetes	28%
Osteoarthritis	10%
Sleep apnoea	8%

Mean ± SD Number of…

obesity medicines **1.1 ± 0.5**

comorbid condition medicines **3.1 ± 2.4**

Bases for some analyses differ and, where applicable, are indicated
Abbreviations: BMI, body mass index; SD, standard deviation

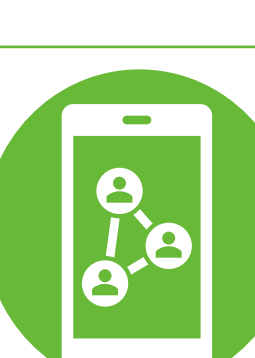### Figure 2. Overall ADAQ Score, n=411

ADAQ ✓
ADelphi **A**dherence **Q**uestionnaire

Whilst mean/median ADAQ scores suggest the PLwO sample are adherent to their obesity medications overall, there are some levels of lower adherence

Mean: ± SD: 0.43 ± 0.65
Median: [Q1,Q3]: 0.18 [0, 0.64]

Distribution of People Living with Obesity — ADAQ Score [0-4]

Adherent ← → Non-Adherent

Note: ADAQ questions do not include the term 'adherence' a term not always understood by PLwO; instead questions refer to behaviours and drivers such as taking/skipping/forgetting to take medication to capture adherence

Figure 3. Predictors of ADAQ using Elastic Net via Cross Validation

1 Predictors of ADAQ using Elastic Net via Cross Validation were:

Increased adherence

- Recommend current medicine to someone else?: 3-5 (1 – would not recommend, 5 – would recommend) — p = 0.057
- Recommend current medicine to someone else?: 4-5 (1 – would not recommend, 5 – would recommend) — p = 0.078
- Doing now to lose weight: Medicine needing a prescription — p = 0.030
- Number of sodas consumed in a typical day — p = 0.072
- Information source: Family or friends — p = 0.068
- Changed lifestyle to lose weight?: 3-5 (1 – no changes, 5 – totally changed lifestyle) — p = 0.093
- Happened when lost weight: To feel less physical discomfort — p = 0.064
- Why stopped medicine: The medicine was too expensive — p = 0.041
- Why stopped medicine: I wasn't losing enough weight — p = 0.004
- Why stopped medicine: Medicine side effects — p = 0.075

Decreased adherence

The elastic net model identified 64 characteristics with non-zero coefficients, when running the bootstrapping method, 10 were identified as being significant or close to significant (p<0.1).

2 Significant predictors of ADAQ were:

Increased adherence

Use of prescription medicine (coefficient = -0.103, p=0.030)
The use of obesity medicine prescribed by a physician/nurse to lose weight was significantly associated with higher adherence.

Stopping medicine due to cost (coefficient = 0.304, p=0.004)
For PLwO whom reported they previously stopped taking their prescribed medicine due to cost, this was significantly associated with decreased adherence.

Stopping medicine due to not losing enough weight (coefficient = 0.449, p=0.041)
For PLwO whom reported they previously stopped taking their prescribed medicine due to not losing enough weight, this was the factor most associated with decreased adherence.

Decreased adherence

Conclusions / Possible Patient-Centred Directions

Conclusions	Possible Patient-Centred Directions
➤ **Cost** and **feeling the medicine doesn't work** to aid weight loss were identified as key drivers of non-adherence in PLwO via linear elastic net regression.	➤ **Cost, insurance, and access** could be considered by physicians when making treatment decisions to support adherence through personalised planning. ➤ **Displaying cost on packaging** may help PLwO perceive value, potentially boosting motivation to continue treatment.
➤ **Prescription-based interventions** were associated with **improved adherence**.	➤ **Medication experiences**, including side effects, expectations and emotional responses, could be proactively discussed with PLwO to support engagement.
➤ While medication experiences were **key predictors of adherence, lifestyle behaviours and information sources showed limited influence**, with only marginal associations observed.	➤ **Success metrics** could extend beyond weight loss to include patient-reported outcomes such as **energy, mobility, and wellbeing**. ➤ **Co-designed, PLwO-led resources** may help bridge current information gaps by making content more **relevant, accessible and trusted**.
➤ **Systematic adherence assessment** in clinical practice may enable more tailored and effective interventions.	➤ **Routine monitoring via electronic health records, patient portals or apps** could help identify at-risk patients early and personalise support.

These findings underscore the need for **patient-centred, inclusive strategies** that reflect **real-world barriers and priorities in obesity care** to improve adherence.

Limitations

> While minimal inclusion criteria governed selection of participating physicians, participation was influenced by willingness to complete the survey. Patients may not be representative of the overall PLwO population.
> Recall bias, a common limitation of surveys, may have affected responses to questions. However, physicians had access to their PLwO medical records, reducing the risk of recall bias.
> Predictors identified represent associations and do not imply causal relationships.
> A linear regression model was used, however, the relationship between predictors and the outcome may not be linear

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