Investigating the prevalence of nutritional abnormalities in patients pre and post-bariatric surgery

An Australian experience

Nazy Zarshenas
Prof. Linda Clare Tapsell, Dr. Elizabeth Phillipa Neale,
Prof. Marijka Batterham
A/Prof. Michael Leonard Talbot

Introduction

- Bariatric surgery is the most effective treatment for the condition of obesity
- Nutritional deficiencies are a known risk
- These may be under-reported, and some may lead to severe complications
- Limited studies in the Australian population

Aim

- This study aimed to identify:
  - Nutritional abnormalities – with specific attention to thiamine,
  - Weight loss,
  - Adherence to supplements,
  - The presence of gastrointestinal symptoms

in a cohort of bariatric surgical patients.

Method

- Analysis of the electronic medical records of patients attending a multidisciplinary private clinic
- August 2020 to August 2021
- Data on anthropometric measures, nutritional indices, adherence to supplements and gastrointestinal symptoms
- Time points: preoperatively, postoperatively at ≤ 6 months, 1 and 2 years or more

Statistical analysis

- Descriptive statistics:
  - Mean ± standard deviation for continuous variables
  - Percentages for categorical data - deficiency or compliance rates

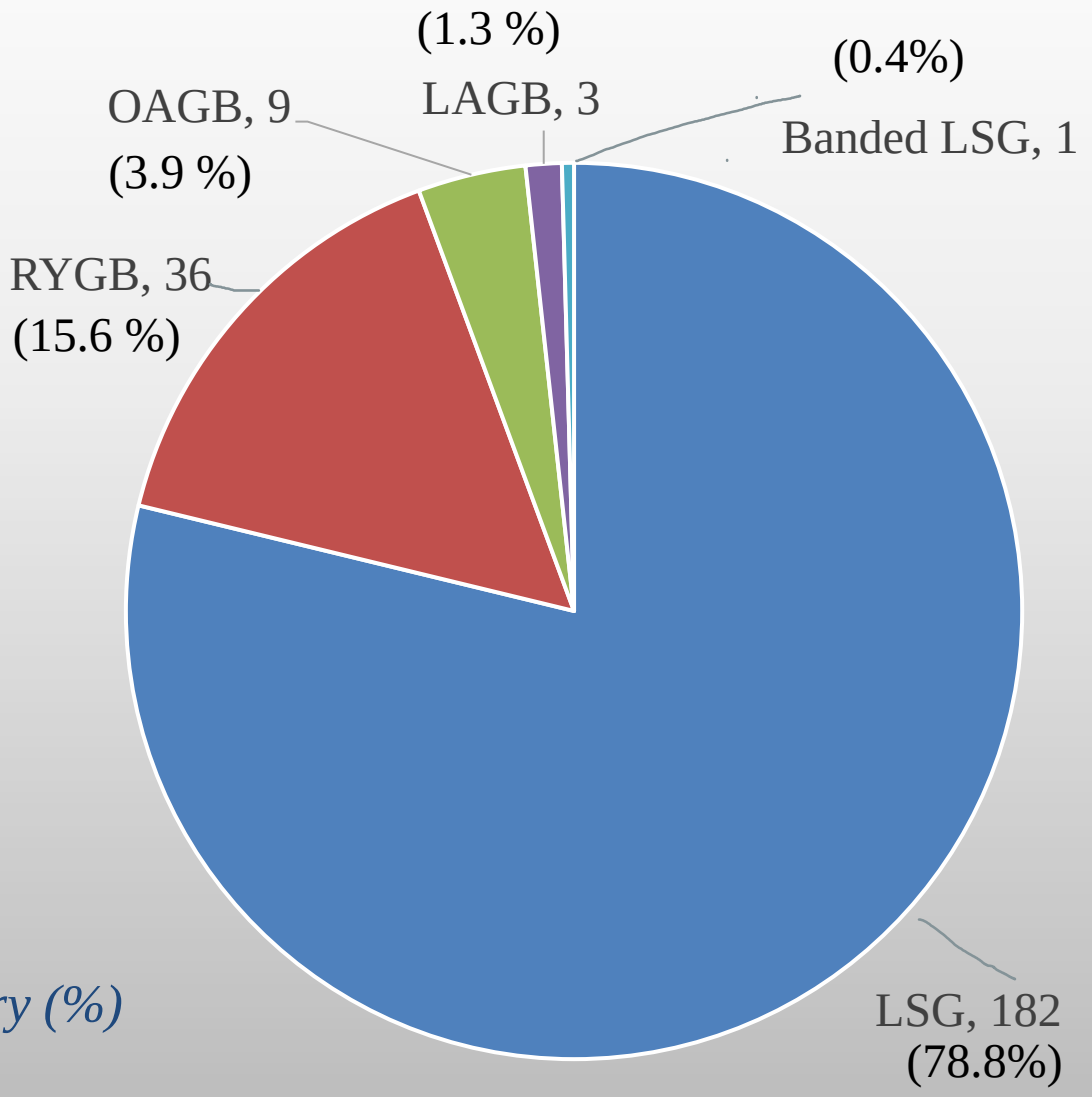
- Inferential analysis → IBM® Statistical Package for the Social Sciences® (SPSS®).

  - Linear mixed models → to compare baseline and follow-up data
  - Bonferroni post-hoc test → to pair-wise comparisons.
  - A *P* value < 0.05 was considered statistically significant.

Results - *Patients' characteristics*

Number of patients	231
Gender ratio Female/Male (%F/M)	176/55 (76.2/23.8)
Age - at the time of surgery (years) (Range)	47.0 ± 11.8 (18-73)
Body weight (kg ± SD) (Range)	122.1 ± 23.6 (74.4 – 220.0)
BMI (kg/m^2 ± SD) (Range)	43.4 ± 7.1 (31.0 – 66.5)
Excess weight (kg ± SD)	51.5 ± 19.8

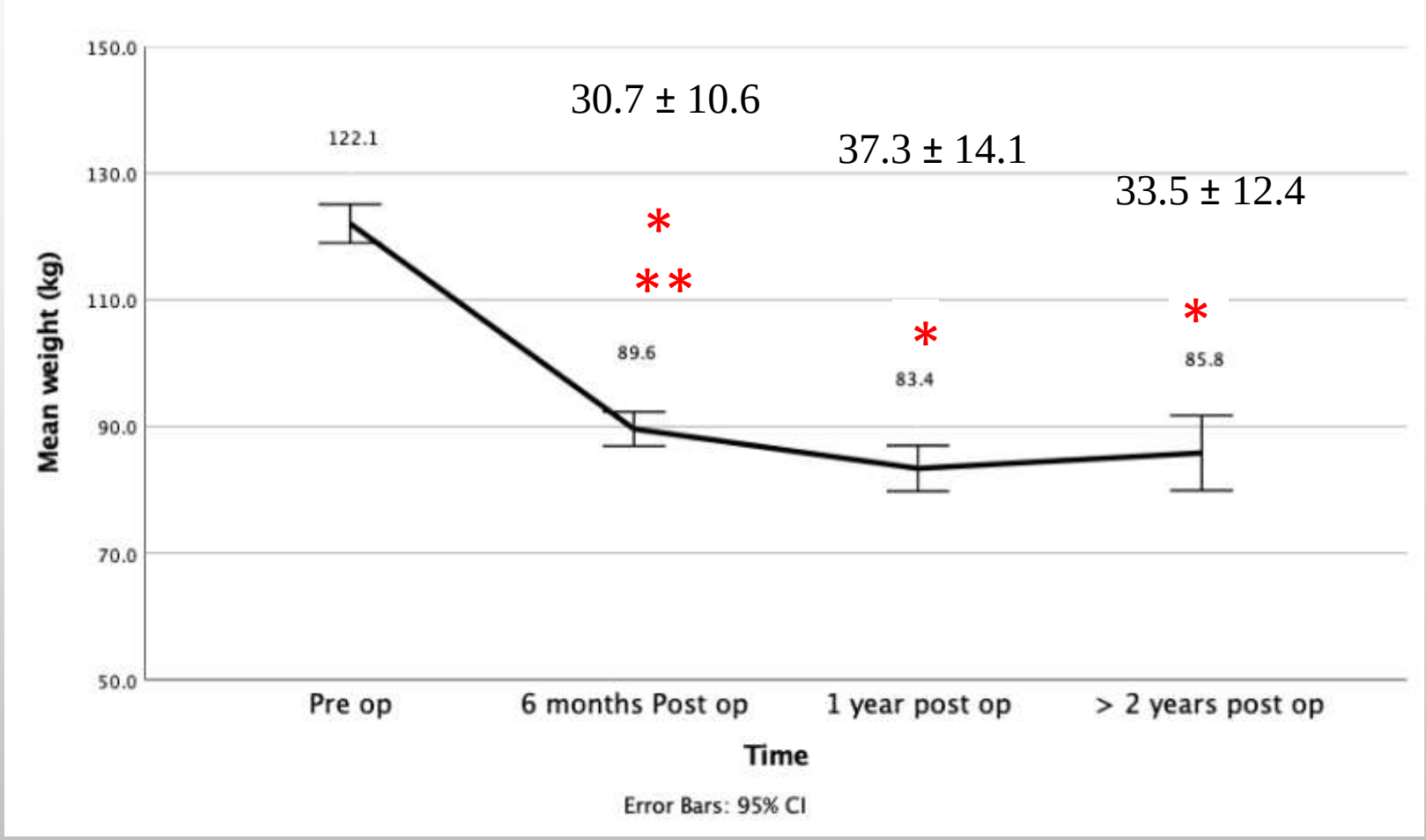
Procedures



Primary vs. revisional surgery (%)

185 / 46 (80 / 20)

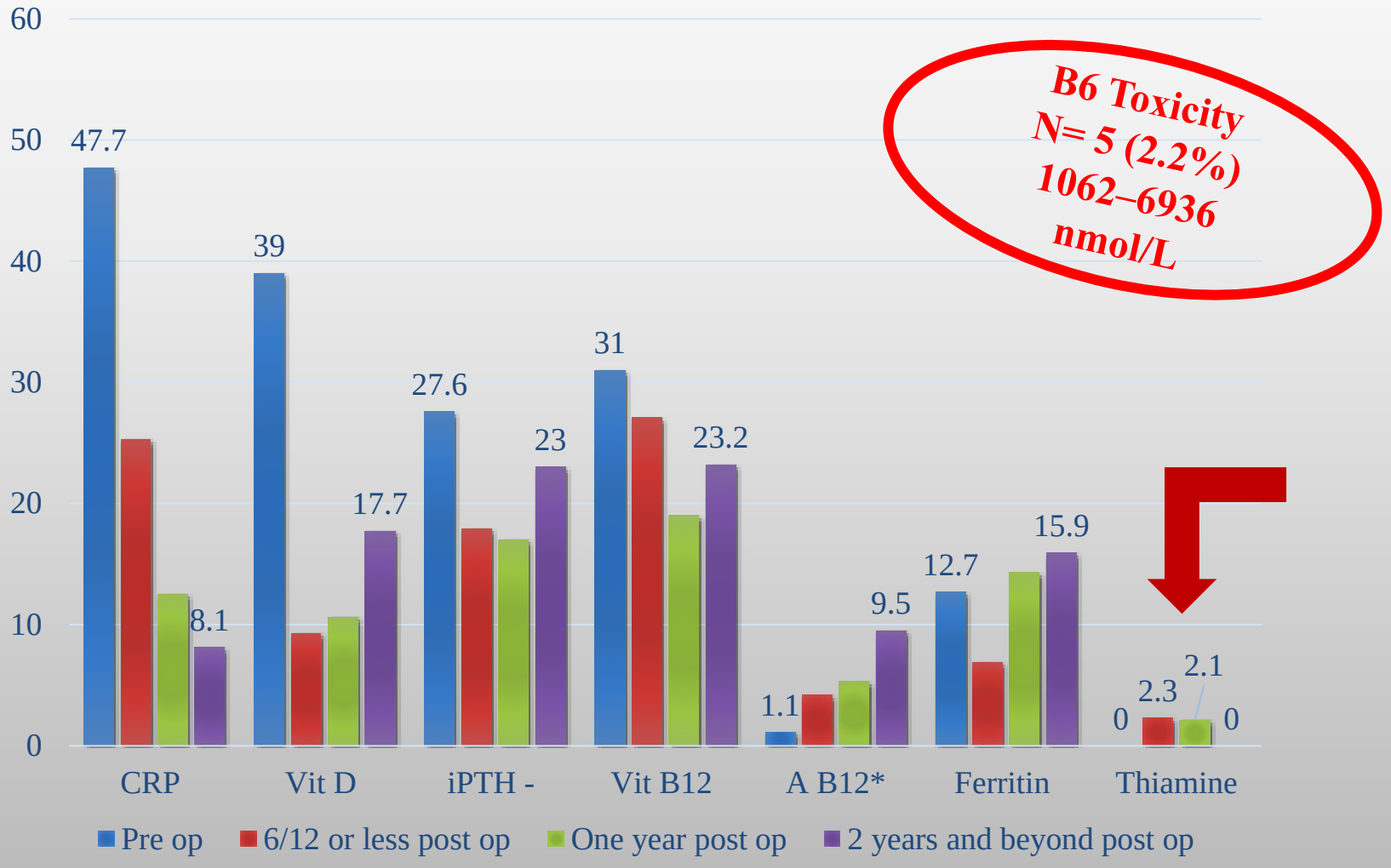
Weight change and total weight loss



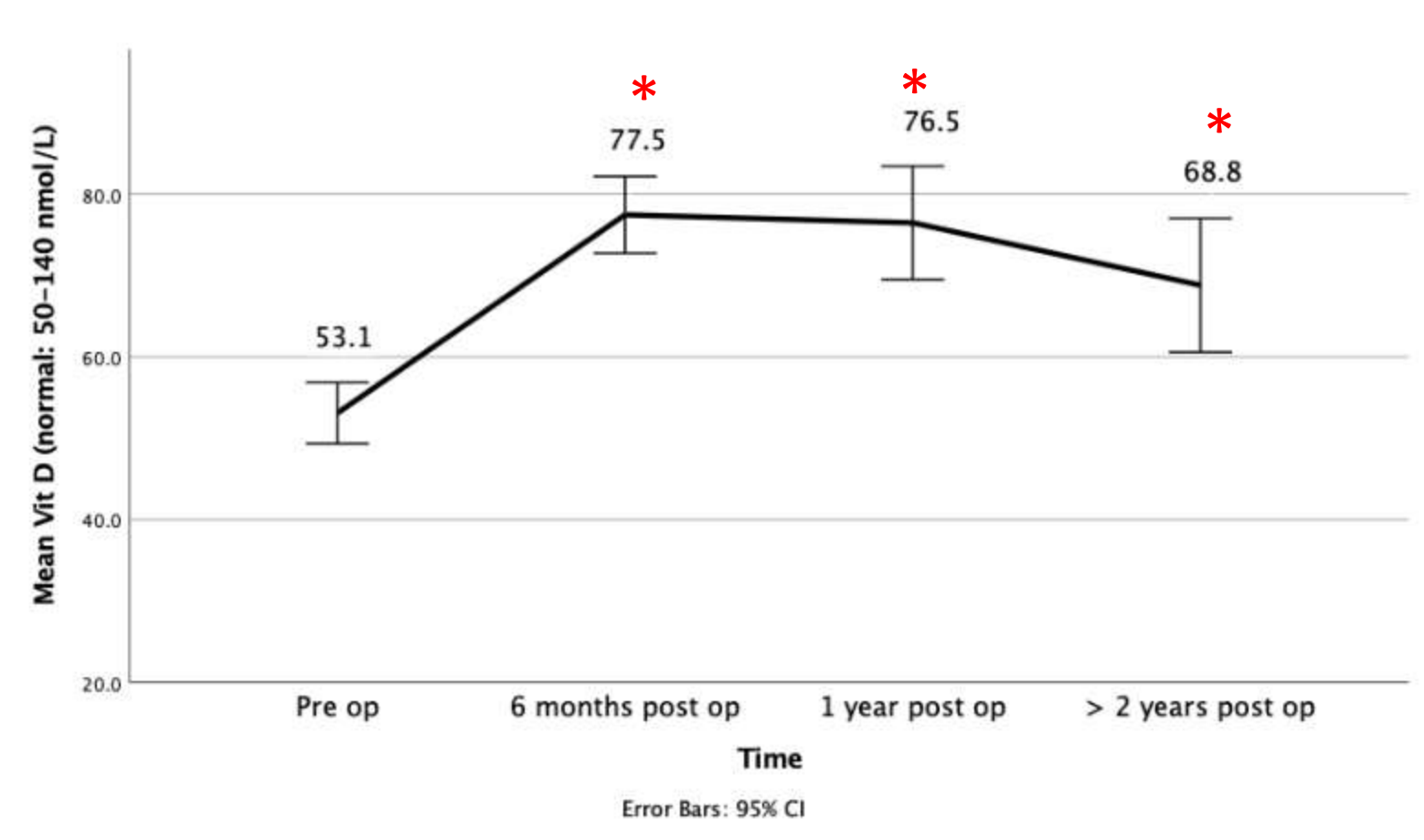
* *Statistically different to pre op weight P= <0.001*

** *Statistically different to >2 years post op weight P= 0.009*

Nutritional abnormalities pre & post-operatively

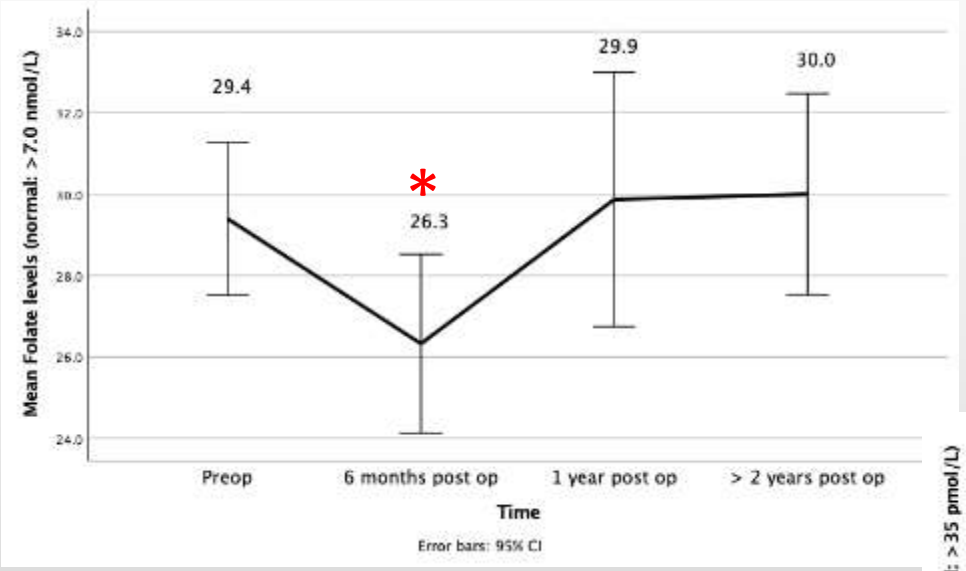


Mean Vitamin D: change over time

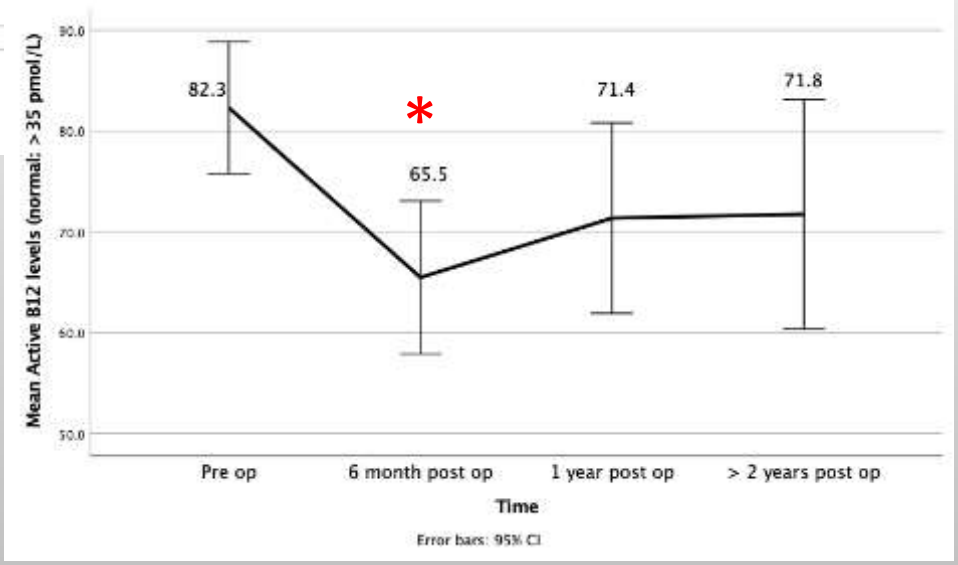


- Statistically different to pre op *P= <0.001*
  - No difference between any post op values.

Mean Folate, B12: change over time

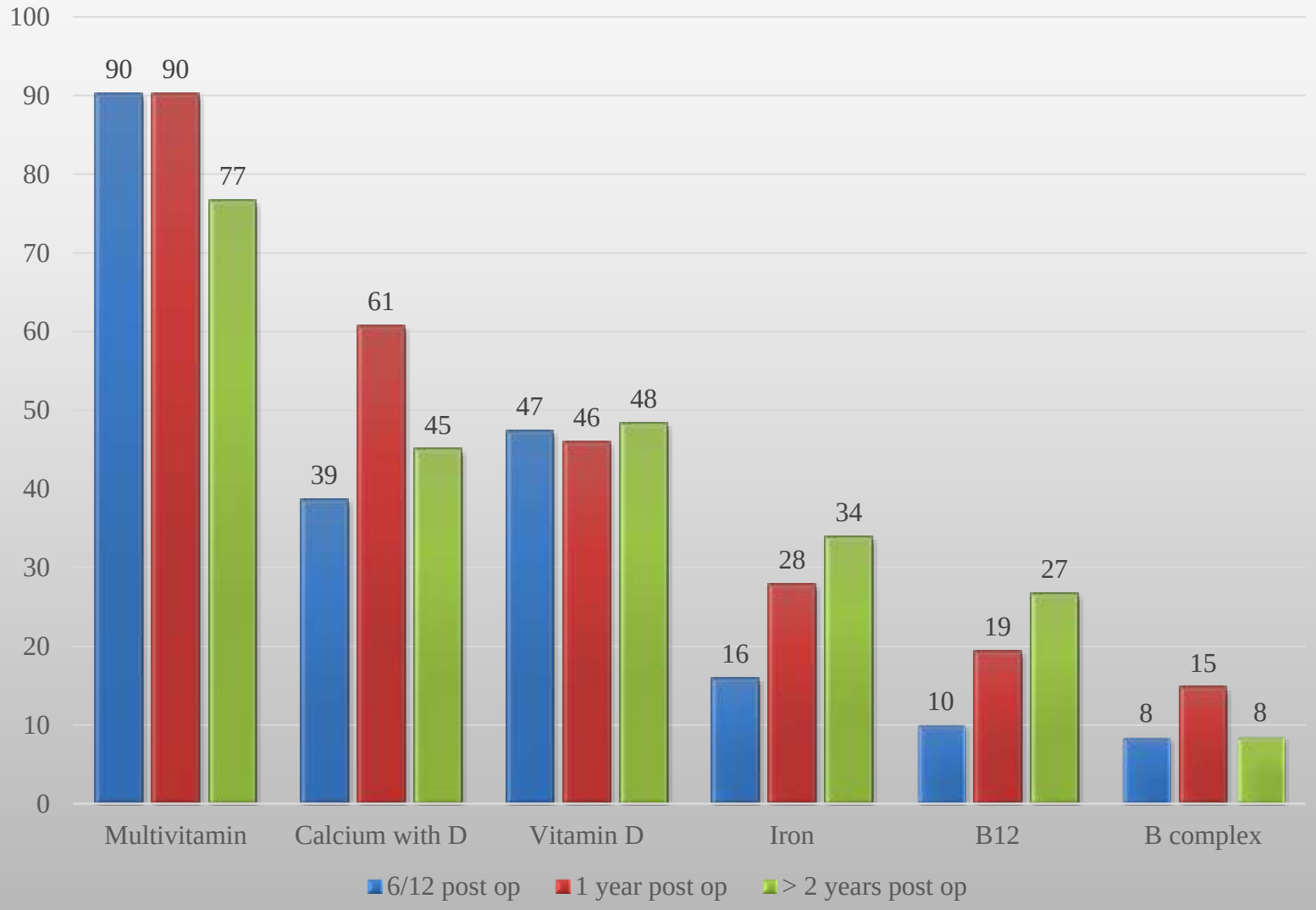


* Significant compared to pre-op *P= 0.015*

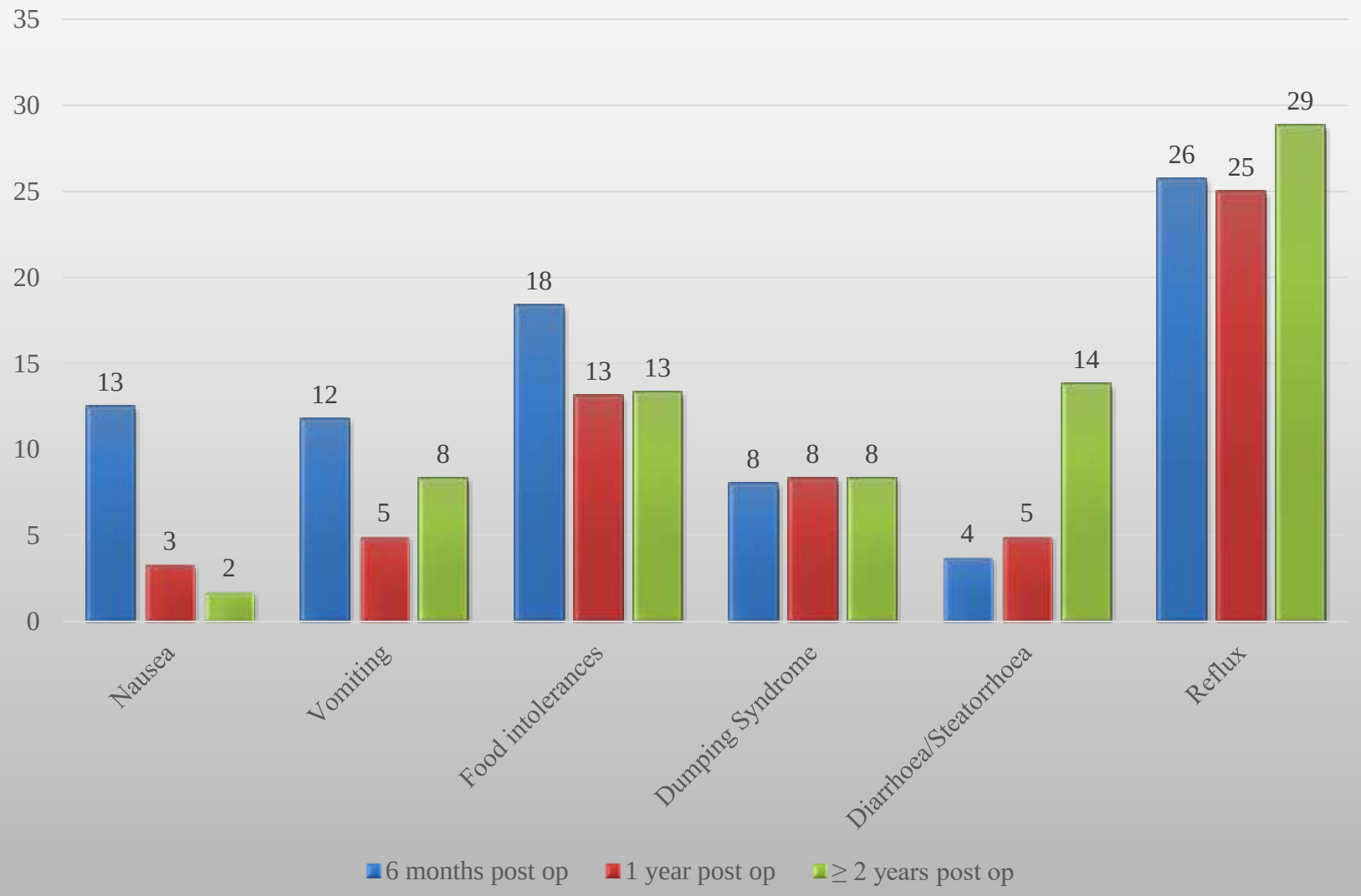


* Significant compared to pre-op *P= <0.001*

Adherence to supplements



Reported gastrointestinal symptoms



Conclusion

- Acute and chronic nutritional concerns remain an issue
- As stores deplete, these become a concern in the longer term.
- Adherence to supplementation tends to reduce over time
- Thiamine deficiency may be underreported in the acute care setting
- Levels of abnormalities vary geographically –

  → ? Australian specific bariatric nutrition guideline

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Investigating the prevalence of nutritional abnormalities in patients prior to and following bariatric surgery

Nazy Zarshenas BSc, MND, APD[1,2] | Linda Clare Tapsell OA, AdvAPD, PhD[1] | Marijka Batterham AdvAPD, PhD[3] | Elizabeth Phillipa Neale AdvAPD, PhD[1] | Michael Leonard Talbot MBBS, BSc (Med), FRACS[4]

PhD supervisors:

- Prof. Linda Tapsell, Dr. Elizabeth Neale,
- Prof. Marijka Batterham and
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- **No COI**

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