

# Spinning Silver into Gold:

## An Evaluation of an IBD Pharmacy Technician-Led Subcutaneous Biologic Delivery Service

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### INTRODUCTION

The use of subcutaneous biologic medication for the treatment of inflammatory bowel disease (IBD) is associated with lower adherence, poorer disease outcomes, and poorer quality of life compared with intravenous therapies.

A pharmacy technician-led Subcutaneous Biologic Home Delivery (SILVER) Service was established for IBD patients at Northern Health in an attempt to improve treatment outcomes.

### AIM

To evaluate the effect of a pharmacy technician-led IBD subcutaneous biologic home delivery service on quality of life, medication adherence, health literacy and disease outcomes for patients with IBD.

### METHOD

IBD patients treated with a subcutaneous biologic residing within 45-minutes of a tertiary IBD service were offered delivery of the biologic to their home (the SILVER Service). Demographic and clinical data were recorded. Telephone surveys at baseline, 6-months, and 12-months of patients participating in the service were performed to evaluate change in quality of life (SIBDQ), medication adherence via a newly developed Subcutaneous IBD Medication Access and Adherence Questionnaire (SIMAAQ), health literacy (HLQ/eHLQ) and clinical disease activity (SCCAI/HBI). Descriptive statistics were prepared, and parametric/non-parametric tests conducted, assessing the difference in means or distributions for the paired continuous variables.

### RESULTS

Eighty patients were included in the evaluation. Significant improvement ( $p \leq 0.05$ ) was observed at 6 and 12 months in SIBDQ, SIMAAQ, and HLQ/eHLQ (two domains), and in faecal calprotectin at 6 months. No significant improvement was seen in other objective clinical markers or clinical disease activity.

A subgroup of 43 patients received the same biologic treatment for at least 6 months prior to and during participation. In this subgroup, significant improvement ( $p \leq 0.05$ ) was measured at 6 and 12 months in SIBDQ, SIMAAQ, and HLQ/eHLQ (one domain).

#### Subgroup Results:

##### patients continuing on the same treatment

Quality of Life (SIBDQ) scores improved significantly at:

6-month (vs baseline  $p=0.004$ )

12-month (vs baseline  $p=0.010$ )

Medication adherence (SIMAAQ) improved significantly at:

6-month (vs baseline  $p=0.001$ )

12-month (vs baseline  $p=0.007$ )

Health literacy (eHLQ) improved significantly at 12-months in the 'Using Technology to Process Health Information' domain (vs baseline  $p=0.024$ )

Figure 1. Quality of Life (SIBDQ)

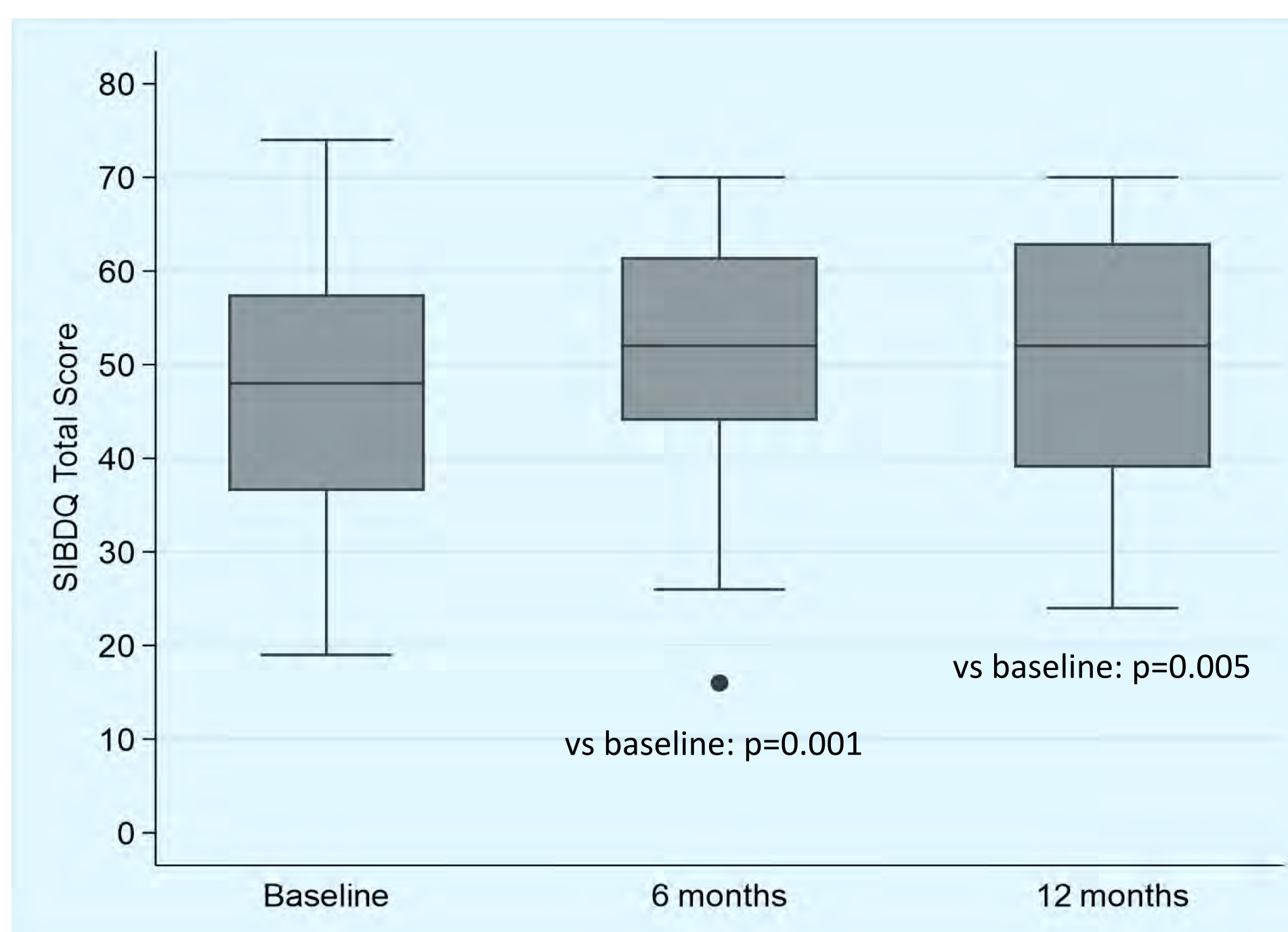


Figure 2. Medication Access and Adherence (SIMAAQ)

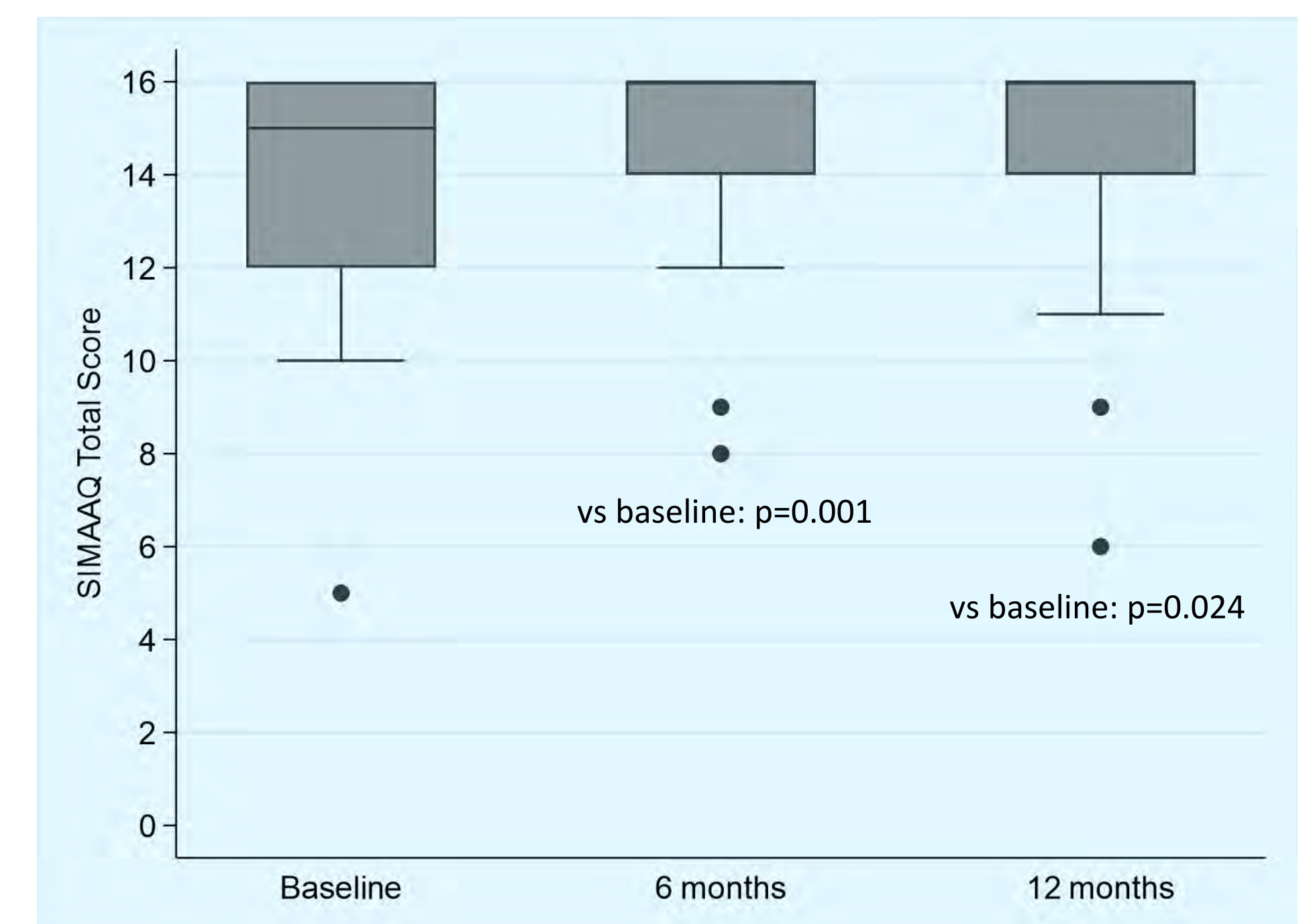


Figure 3. Health Literacy (HLQ) – Active Health Management domain

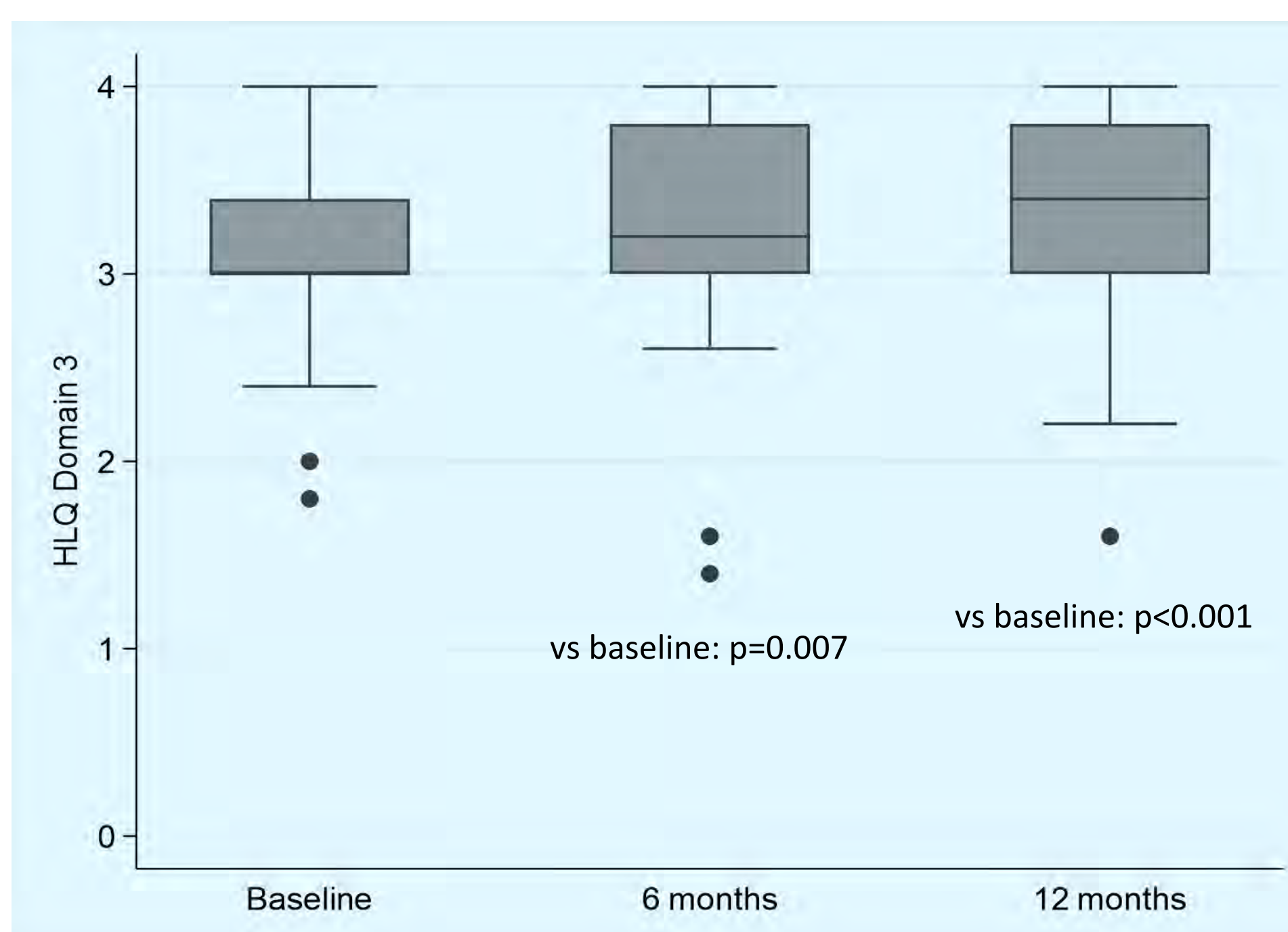
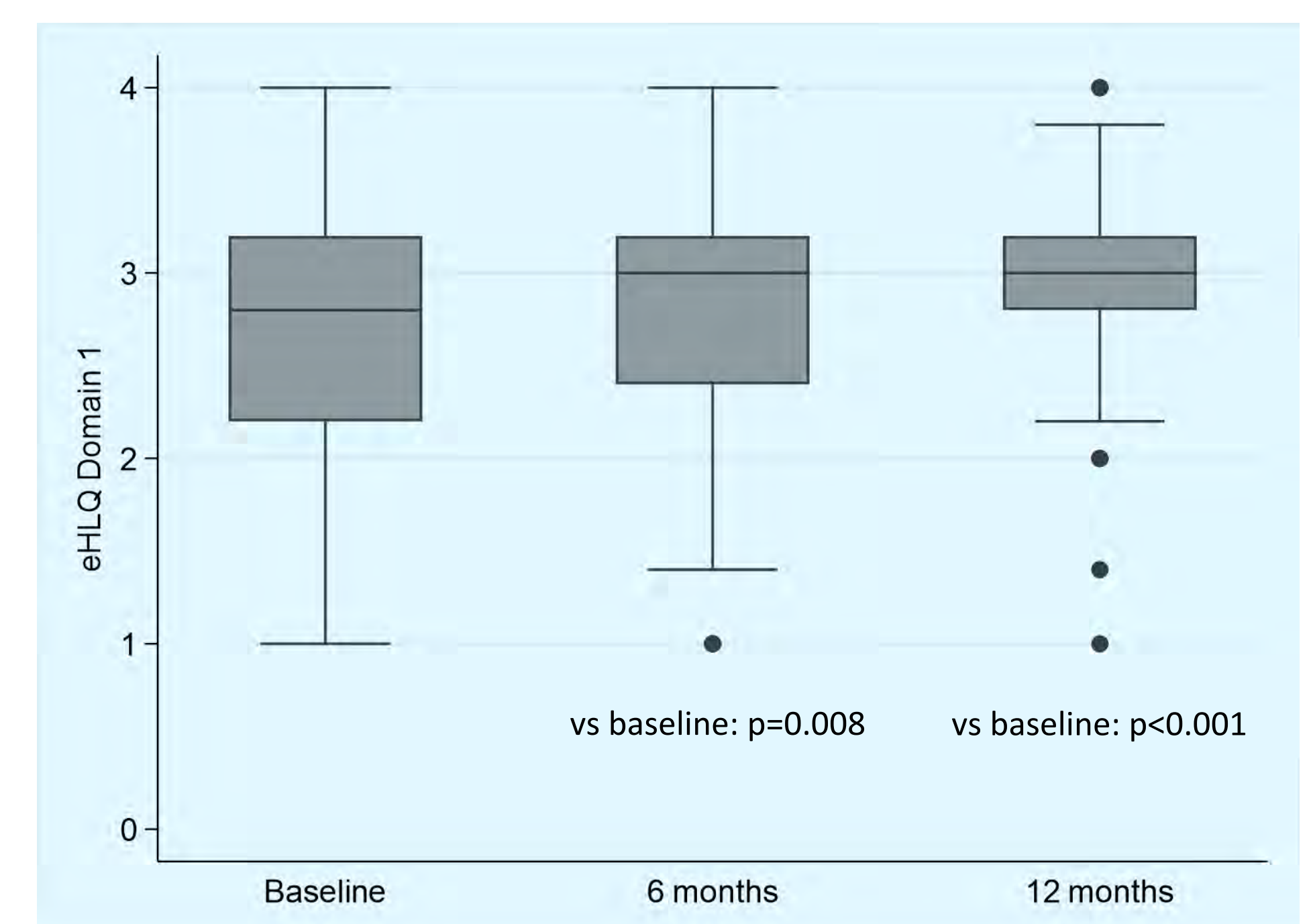


Figure 4. Health Literacy (eHLQ) – Using Technology to Process Health Information domain



### DISCUSSION

Multiple significant improvements were measured after implementation of the home delivery service, and these results were demonstrated to be sustainable to 12 months. The results suggest a strong connection between the areas of improvement and the SILVER delivery service.

These results were also observed in a sub-group of patients that were continuing on the same biologic treatment when joining the SILVER Service. Evaluating these patients, where the only variable in IBD treatment was inclusion in the service, supporting the deduction that improvements were associated with the service.

We postulate that the delivery service influenced adherence and health literacy, resulting in higher levels of patient engagement, which in turn improved patient quality of life. This is consistent with the results of other studies (Barello et al, 2021) where higher levels of patient engagement improve IBD-related quality of life.<sup>1</sup>

### REFERENCES

1. Barello, S et al. Does patient engagement affect IBD patients' health-related quality of life? Findings from a cross-sectional study among people with inflammatory bowel diseases. *Health Qual Life Outcomes* 19, 77 (March, 2021); [e-pub]. (<https://doi.org/10.1186/s12955-021-01724-w>)

### LIMITATIONS

- A relatively small population were included in the evaluation, with all participants from the same tertiary IBD service, possibly reducing or magnifying variability of results.
- The evaluation timeframe of one year potentially limited measurement of changes to disease outcomes that may occur over a longer time span.
- The SIMAAQ questionnaire was a newly developed tool, and is as yet unvalidated.
- A limited number of disease markers were utilised, with other available markers omitted due to resourcing limitations.

### CONCLUSIONS

A novel pharmacy technician-led subcutaneous biologic home delivery (SILVER) service is associated with improvement in Inflammatory Bowel Disease (IBD) related quality of life, medication adherence, health literacy, and disease outcomes, sustained to 12 months.

These were noted even among patients on the same medication prior to enrolment.

Larger studies evaluating cost-effectiveness and feasibility across multiple healthcare environments are warranted.