Dose Administration Aid system in the elderly: testing student active participation in the implementation of a new service for community pharmacy

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CENTRO DE INVESTIGAÇÃO INTERDISCIPLINAR EGAS MONIZ

Introduction

Adherence in the polymedicated elderly is recognised to be suboptimal[1]. The use of dose administration aid (DAA) systems has been proposed as an effective tool to reduce unintentional non-adherence, especially effective when combined with other enhanced services[2].

Objectives

To test the ability of students to be actively involved in the implementation of a new service for community pharmacy; to explore the acceptability of the system by pharmacies; to judge the competency of pharmacists in delivering advanced services.

Methods

Study Design: Quasi-experimental. Patients were recruited by MPharm students as trainees in community pharmacies distributed throughout mainland Portugal.

Eligibility criteria: inclusion of patients aged ≥ 65, taking ≥ 5 medicines and living alone or with a partner within the same age category.

Collected data: Sociodemographic, diagnosis and treatment, clinical biomarkers and adherence [self-report for both groups (MAT[3]; Fig. 1) and weekly pill-count for intervention group (IG)]. Satisfaction survey at the end of study for IG.
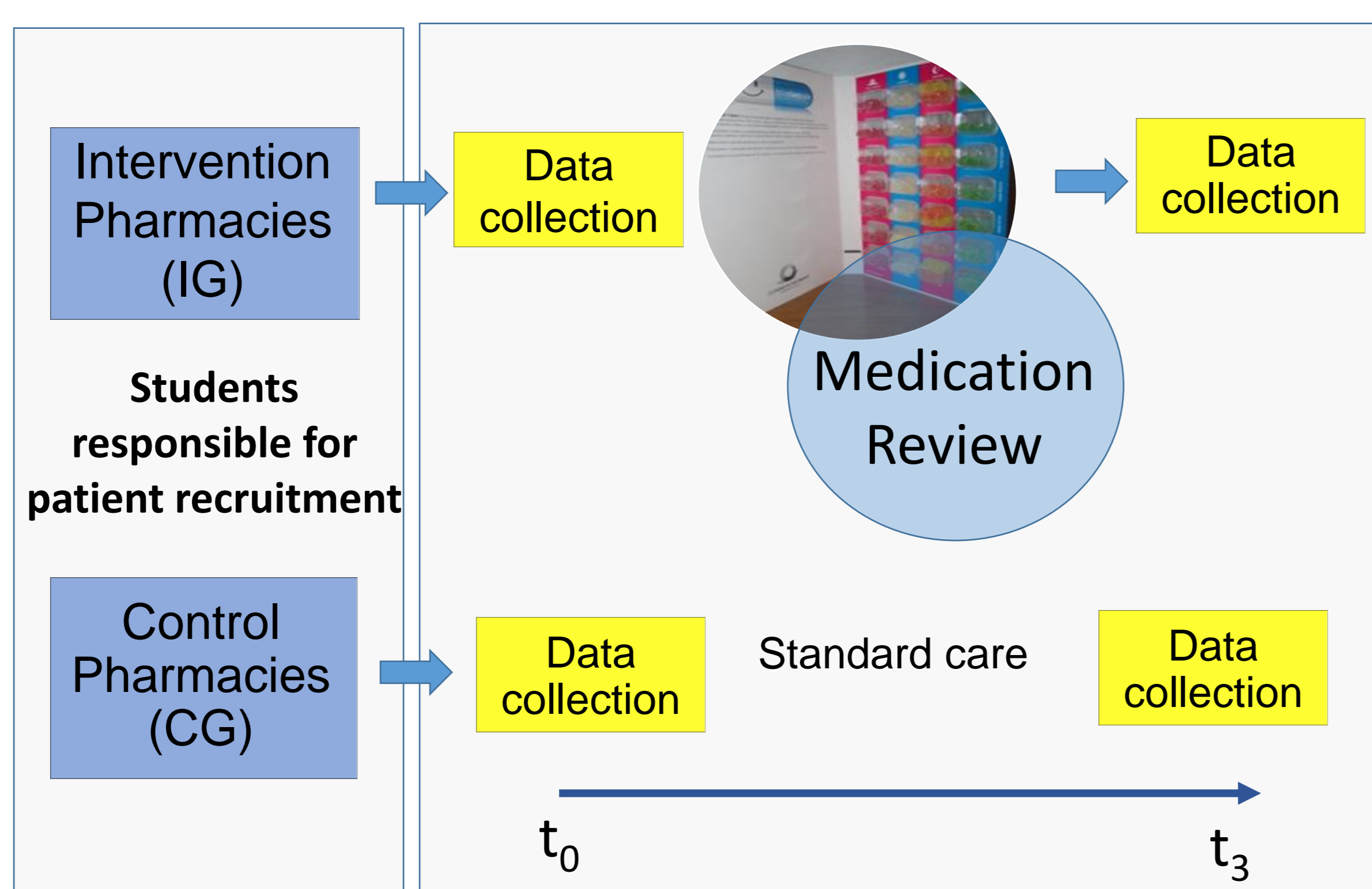
Interventions: Intermediate medication review was proposed and pharmacists were instructed to use Beers criteria for Portugal[4] to detect potentially inappropriate medicines (PIM) and/or II Granada Consensus[5] to detect DRP. Additionally, medicines were delivered using the DAA service.

Figure 1: Medication adherence questionnaire

1. Have you ever forgotten to take medication for your disease?
2. Have you ever been careless with the hours to take the medicines for your disease?
3. Did you ever stop to take your medication, because you were feeling better?
4. Did you ever stop to take medication on your own initiative, after felt worse?
5. Have you taken a second or more pills for your disease, on your own initiative, after felt worse?
6. Ever discontinued therapy for their disease for failing to end the drugs?
7. Did you ever take medication for your disease for some other reason than the indication of the doctor?

Always (1 point)	Usually (2 points)	Often (3 points)	Sometimes (4 points)	Rarely (5 points)	Never (6 points)

Figure 2: Study implementation

Ethical Approval → Identification and invitation of pharmacies and students interested in participation

Students responsible for patient recruitment

Intervention Pharmacies (IG) → Data collection → Medication Review → Data collection

Control Pharmacies (CG) → Data collection → Standard care → Data collection

t_0 → t_3

Statistical analysis: Univariate and bivariate analysis (Wilcoxon; Mann-Whitney; Friedman). 95% CI.
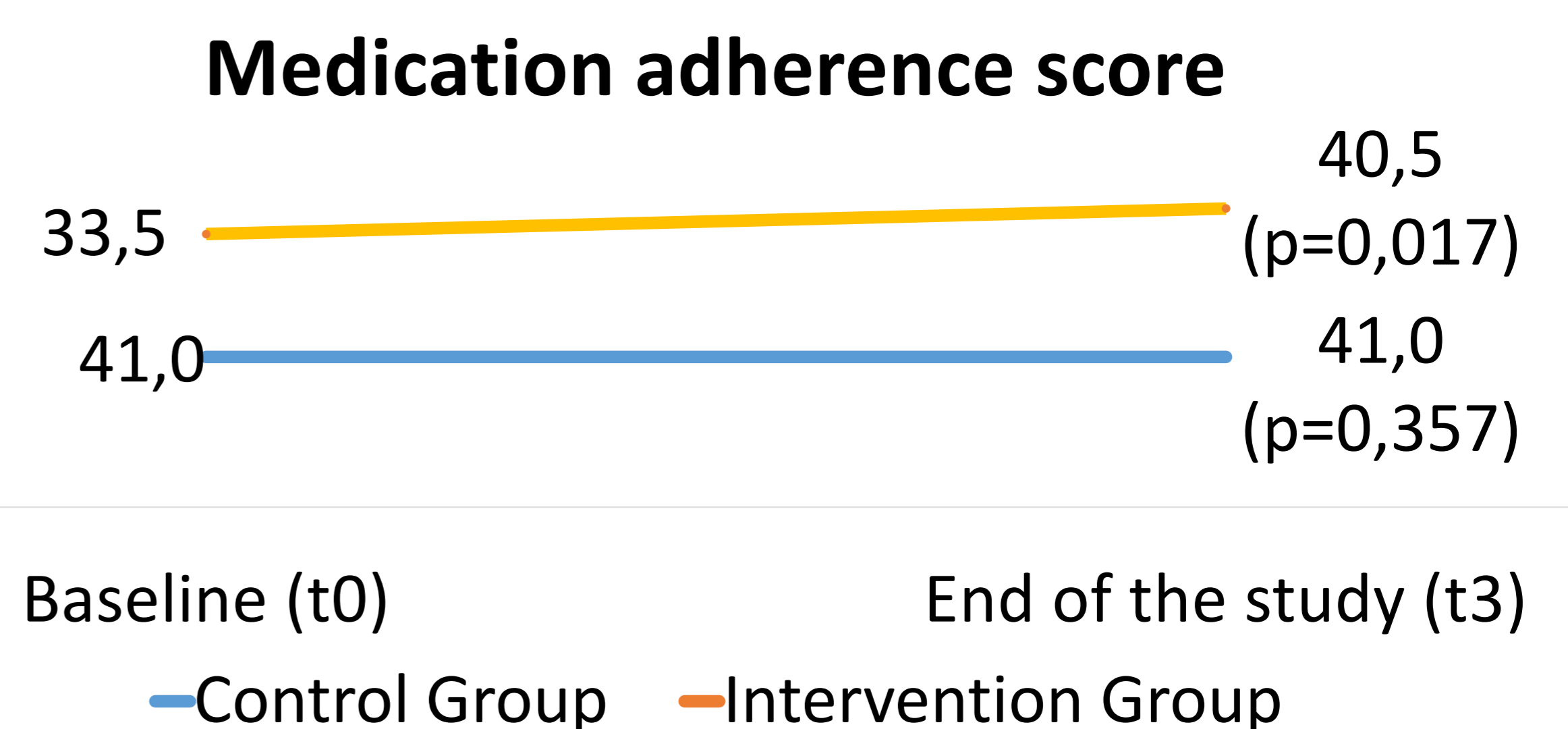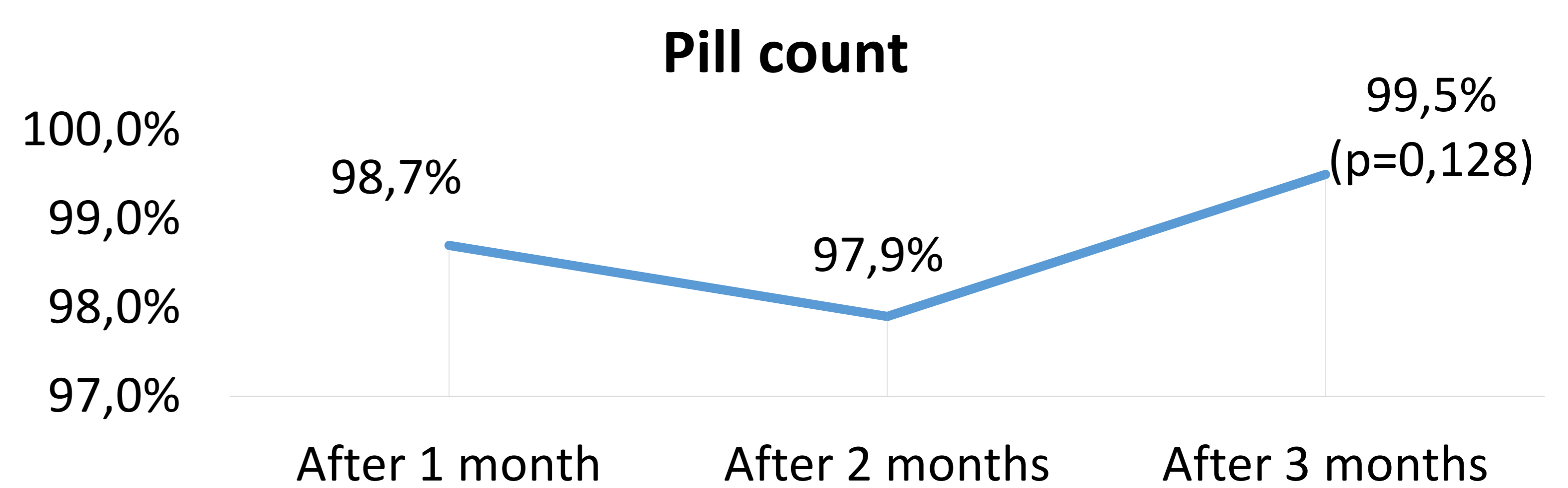
Results

Participants in the study

Twenty one students participated in patient recruitment and most students recruited 2 patients {1-9}. A total of 50 patients joined the study (n_{IG}=28; n_{CG}=22). From these, adherence data could only be collected at 3 months for 20 patients.

Adherence to medication results

Results indicate that the use of the DAA system had a positive impact on patients' adherence measured by the MAT as the CG obtained the same score at baseline and at 3 months (p=0.357), whilst the IG improved significantly their score (Median-IGt_0=33.5 (SD=4.33); Median-IGt_3=40.5 (SD=3.89); p=0.017).

Medication adherence score

- Intervention Group: 33,5 → 40,5 (p=0,017)
- Control Group: 41,0 → 41,0 (p=0,357)
- Baseline (t0) / End of the study (t3)

Pill-count at 1 month (IG) was very high (98,7%), leading to little effect observed at 3 months (99,5%; p=0.128).

Pill count

- After 1 month: 98,7%
- After 2 months: 97,9%
- After 3 months: 99,5% (p=0,128)

Medication Review Results

From 12 intervention pharmacies, only 4 reviewed medication for 10 patients (35,71%), leading to 4 reports due to DRP detected and 1 due to PIM detected, 4 of which were accepted (80,0%). PIM were detected in 15 patients by the research team (29,6%).

Discussion/Conclusions

Results indicate that while pharmacists and students were motivated to use the DAA system, they showed little confidence with medication review. Additional sessions are needed to implement this service. Patients rated their satisfaction with the service provided by students as very high (>90%) and indicated they would like to have it available at their pharmacy even at a cost (42.9%) or for free (42.9%).

References

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