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Validation of an announced telephone pill count compared to a home-visit pill count in people with type 2 diabetes or cardiovascular disease

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Introduction

Medication non-adherence is a prevalent health problem in people with type 2 diabetes (T2D) or cardiovascular disease (CVD). In order to improve medication adherence it is important that healthcare providers and researchers can identify people that are non-adherent.

Aim

Assess the validity of an announced telephone pill count in people taking oral T2D and/or CVD medication by comparing this method to a home-visit pill count.

Assess whether the accuracy improved if a second telephone pill count was performed.

Methods

Inclusion criteria

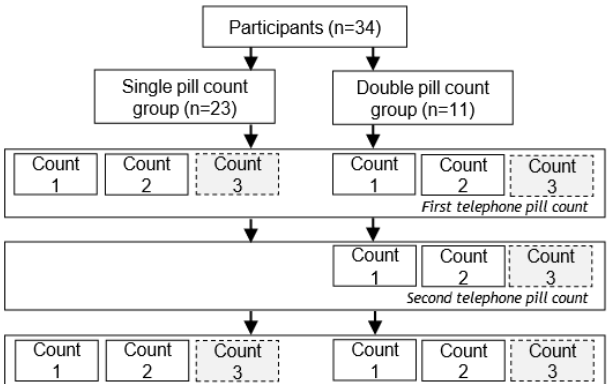
- People of 35 years and older
- Users of oral T2D and/or CVD medication
- Able to read and communicate in Dutch

Measurements

A total of 34 participants completed an announced telephone pill count directly followed by a home-visit pill count. A subsample of the participants (n=11) completed a second telephone pill count before the home-visit pill count (**Figure 1**). Pill counts were conducted using a standardized protocol.

Analysis

- Intraclass correlation coefficients for concordance
- Bland-Altman plots for agreement and outliers



Results

Table 1. Baseline characteristics of the participants

	Overall pill count group (n=34)	Second telephone pill count group (n=11)
Men (%)	53%	36%
Age (years)	69.6 (±9)	64.6 (±6)
Prescriptions (N)	6.1 (±3)	5.2(±3)

High concordance between the first telephone pill count and home-visit pill count.

Intraclass correlation coefficients

- 0.96 (95% CI 0.94-0.97) at medication count level
- 0.98 (95% CI 0.96-0.99) at individual level

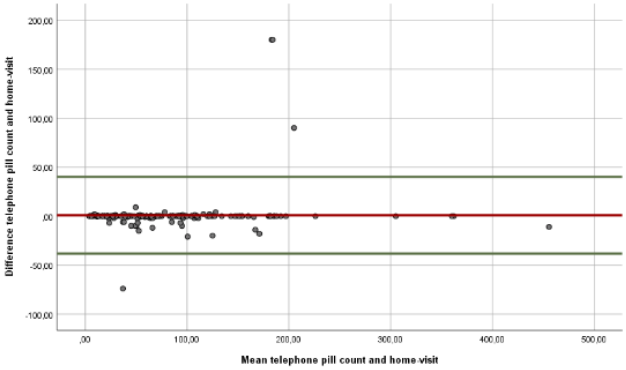


Figure 2. Bland-Altman plot of the differences between the telephone pill count and home-visit pill count for the overall group (n=34)

No learning effects in the group that completed a second telephone pill count (n=11).

Intraclass correlation coefficients

- 0.88 (95% CI 0.81-0.93) for the first telephone pill count
- 0.89 (95% CI 0.82-0.93) for the second telephone pill count

Conclusion

An announced telephone pill count could be considered a valid alternative for a home-visit pill count in people with type 2 diabetes and/or cardiovascular disease.

Figure 1. Study design

A single pill count appears to be sufficient.