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# Reliability of the national quality indicators in Swiss long-term care facilities

*A study within the National Implementation Programme NIP-Q-UPGRADE*

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## Background

- Quality indicators (QIs) are used to benchmark and monitor care quality in long-term care facilities (LTCFs).
- Evidence on the reliability of QIs in LTCFs is limited. Reliability may be compromised by staff's lack of understanding, documentation errors, or even intentional misreporting. *(Osińska et al. 2022, Davila et al. 2021)*

## Aim

To assess the reliability of the QIs in Swiss LTCFs.

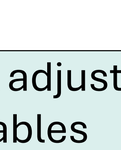
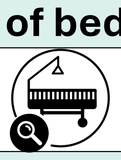
## Methods

- We compared QI assessments from two independent raters for the same residents and time period.
- One or two nurses per LTCF were trained by the research team in QI data collection; their ratings served as the gold standard.
- The usual ratings came from routine assessments done by other nurses and were transferred to a study database by a third trained staff member.

## Results

- **28 LTCFs from 3 language regions** (20 German-speaking, 5 French-speaking, 3 Italian-speaking) participated.
- Double assessments of the QIs were conducted for **831 residents.**

### Inter-rater agreement

| QI | QI building variables | No. compared assessments | % of agreement | Cohen kappa (CI)[a] |
|---|---|---|---|---|
| **Polypharmacy** | | 831 | **90.4** | **0.81** (0.76-0.85) |
| | Number of active substances | 831 | 44.8 | 0.90 (0.88-0.92) |
| **Malnutrition** | | 770 | **78.2** | **0.52** (0.46-0.58) |
|  | Weight loss | 695 | 91.8 | 0.32 (0.18-0.45) |
| | Life expectancy[b] | 829 | 63.6 | 0.40 (0.35-0.45) |
| **Self-assessed pain** | | 823 | **75.0** | **0.51** (0.45-0.57) |
| | Frequency | 824 | 62.4 | 0.49 (0.44-0.53) |
| | Intensity | 822 | 56.4 | 0.44 (0.39-0.48) |
| **Observed pain** | | 822 | **86.3** | **0.54** (0.46-0.61) |
| | Frequency | 827 | 65.8 | 0.47 (0.42-0.52) |
| | Intensity | 779 | 59.2 | 0.42 (0.37-0.47) |
| **Use of bedrails** | | 798 | **94.0** | **0.78** (0.72-0.84) |
|  | Frequency | 817 | 96.0 | 0.85 (0.81-0.90) |
| | Context | 109 | 84.4 | 0.66 (0.51-0.81) |
| **Trunk fixation or sitting position that does not allow standing up** | | 828 | **96.7** | **0.62** (0.50-0.75) |
|  | Trunk: Frequency | 814 | 98.8 | 0.64 (0.43-0.85) |
| | Trunk: Context | 9 | 88.9 | 0.61 (-0.06-1.00)[c] |
| | Sitting: Frequency | 819 | 98.3 | 0.60 (0.41-0.79) |
| | Sitting: Context | 11 | 90.9 | 0.62 (-0.04-1.00)[c] |
| Risk adjustment variables | Cognitive performance | 745 | 62.4 | 0.54 (0.50-0.58) |
| | Depression symptoms | 734 | 51.6 | 0.36 (0.31-0.40) |

[a] All values are unweighted Cohen's kappa, except for 'number of active substances', which shows weighted kappa; [b] Used as an exclusion criterion; [c] Confidence interval out of range due to low prevalence.

## Conclusions

- **Inter-rater agreement** ranged from **moderate to near perfect at the QI level. At the variable level**, it ranged from **fair to near perfect**.
- Despite generally high reliability, there is room for improvement, especially when using QIs for internal quality improvement and care planning.
- A following study tested interventions to enhance QI data quality. A second inter-rater reliability assessment is planned to evaluate their impact.

**More about** NIP-UPGRADE