



Ability to perform activities of daily living among people with hand osteoarthritis.

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Background

Osteoarthritis (OA) affects ~600 million people worldwide and is increasing with population ageing. *Haile et al., 2023*

Hand OA is the second most common OA subtype and more prevalent in women. *Haugen et al., 2011*

People with hand OA often report difficulties with activities of daily living (ADL) such as dressing, opening jars, and household tasks. *Kjeken et al., 2005; Bukhave & Huniche, 2014*

Limited evidence exists on how ADL performance is affected and how self-report relates to observation-based assessment. *Wæhrens et al., 2012; Amris et al., 2022*





Study aims

- To describe **self-reported quality of ADL task performance** (ADL-Interview [ADL-I]) in people with hand OA
- To describe **observed quality of ADL task performance** (Assessment of Motor and Process Skills [AMPS])
- To explore **differences across sex and hand OA subtypes**
- To determine the **relationship between self-reported and observed ADL ability**

Study design & Participants



Design

- Cross-sectional study.
- Single consultation: assessment of ADL ability.

Inclusion Criteria

- ≥ 18 years old.
- Fulfill ACR classification criteria for hand OA.
- Finger pain ≥ 40 mm on a 100 mm VAS.
- Exclusion of other joint-affecting conditions



Assessment Tools



ADL-I

ADL-Interview (ADL-I)

- Standardised self-report interview covering 47 ADL tasks.
- Measures **self-reported quality of performance** (effort, efficiency, safety, independence).
- Responses converted to **linear ADL-I ability** measure (logits) adjusted for task challenge, using Rasch analysis.
 - Wæhrens et al, 2021



Assessment of Motor and Process Skills (AMPS)

- Standardised, observation-based assessment of ADL task performance.
- Measures **observed quality of performance** (effort, efficiency, safety, independence).
- Raw scores converted to **linear ADL motor and ADL process ability measures** (logits), adjusted for skill item difficulty, task challenge and rater severity, using Rasch analysis
 - Fisher & Jones, 2012; Fisher & Jones, 2014





Participant characteristics

Age – years, mean (SD)	71 (7.5)
Female, n (%)	41 (66.1)
Duration of hand OA symptoms – years, median (IQR)	9 (15.0)
Dominant hand (right) n (%)	61 (98.4)
Dominant hand = Target hand n (%)	40 (64.5)
Erosive hand OA in target hand n (%)	43 (69.4)
Hand OA type	
HOA not involving the thumb (fingers II to V)	16 (25.8)
HOA involving the thumb (with/without fingers II to V)	46 (74.2)
AUSCAN Pain (0-50) – cm, median (IQR)	27.4 (12.0)
AUSCAN Stiffness (0-10) – cm, median (IQR)	5.5 (4.4)
AUSCAN Physical function (0-90) – cm, median (IQR)	42.9 (26.8)

Self-reported difficulties in personal ADL (PADL)

ADL-I

QUALITY OF PERFORMANCE
rating scale

COMPETENT

INCREASED EFFORT/
DECREASED EFFICIENCY

AT RISK/NEED ASSISTANCE

UNABLE TO PARTICIPATE



Self-reported difficulties in instrumental ADL (IADL)



ADL-I

QUALITY OF PERFORMANCE
rating scale

COMPETENT

INCREASED EFFORT/
DECREASED EFFICIENCY

AT RISK/NEED ASSISTANCE

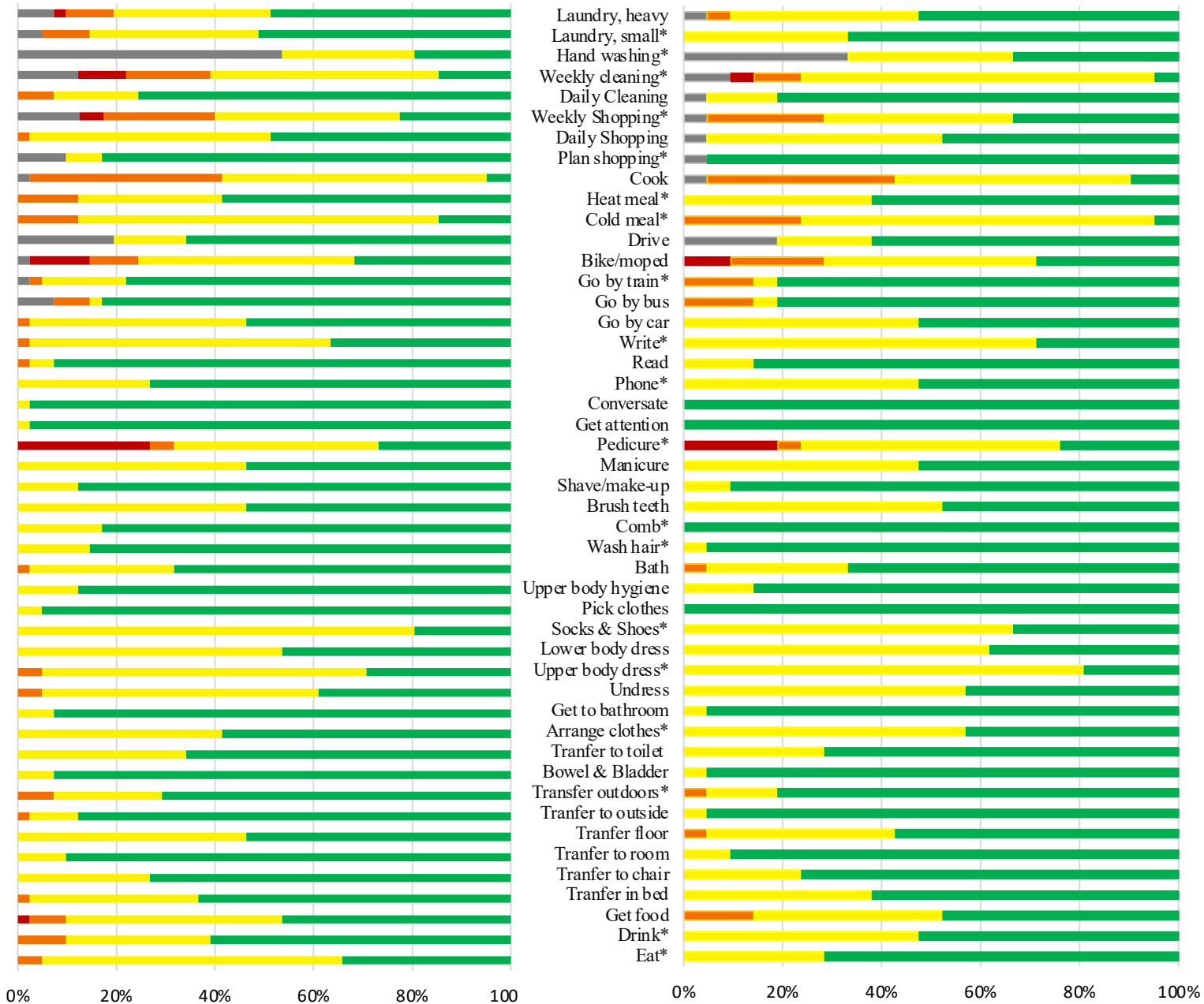
UNABLE TO PARTICIPATE

NOT RELEVANT



WOMEN

MEN



Sex differences in self-reported ADL ability

ADL-I

NOTE
Tasks with distribution differences $\geq 10\%$ between subgroups are marked with*

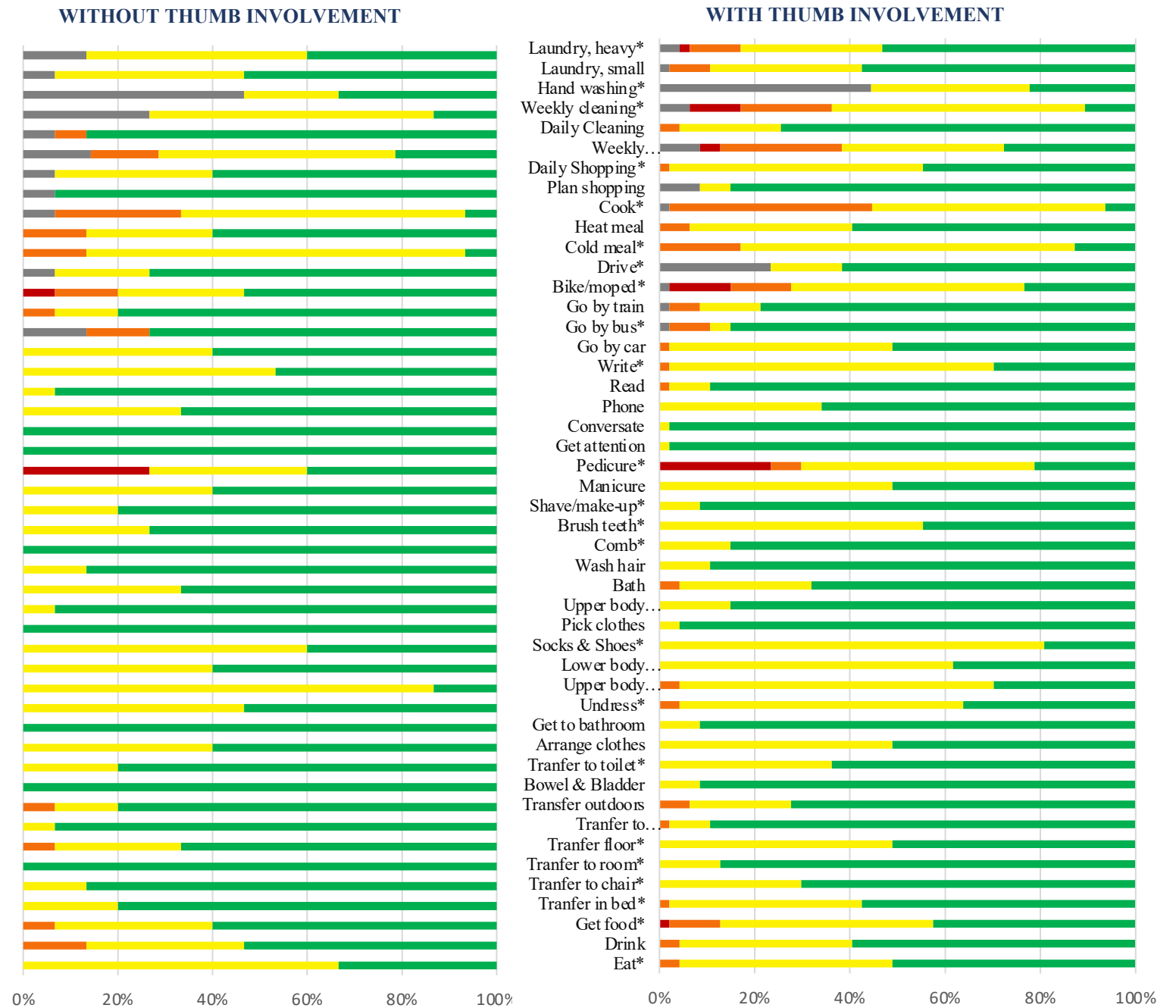


Hand OA subtype differences in self-reported ADL ability

ADL-I

NOTE

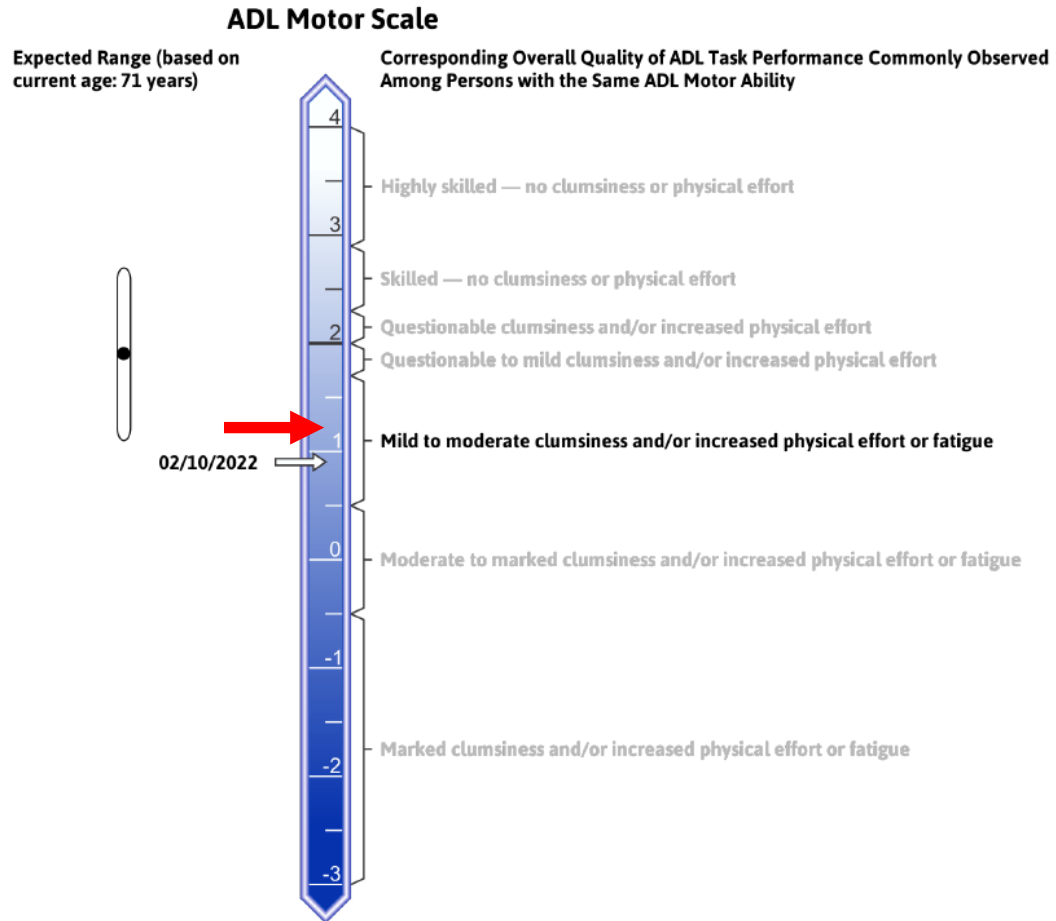
Tasks with distribution differences $\geq 10\%$ between subgroups are marked with*





Observed ADL Motor Ability (AMPS)

Increased physical effort during daily activities



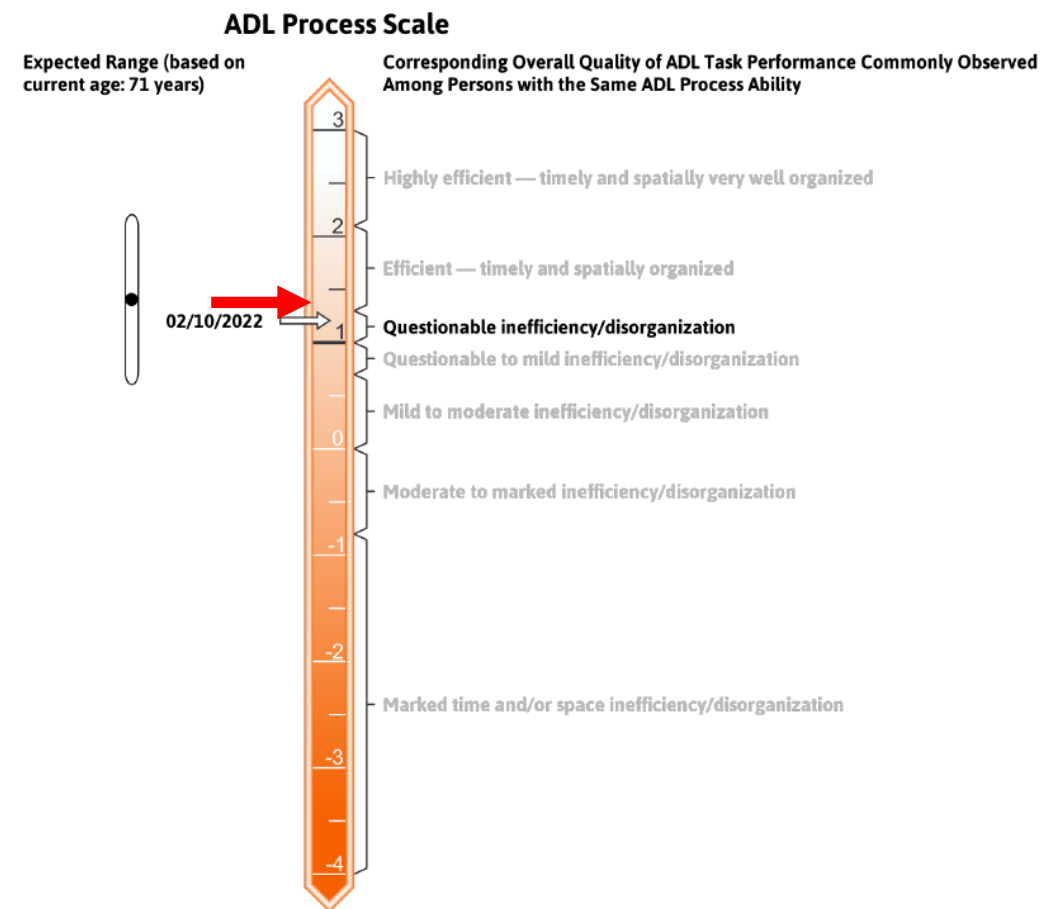
	(n = 62)
AMPS ADL motor, mean (SD)	1.2 (0.3)





Observed ADL Process Ability (AMPS)— *Efficient and safe task performance*

	(n = 62)
AMPS ADL process, mean (SD)	1.3 (0.2)



Self-reported and Observed ADL Ability

Overall results and subgroup comparisons

	All	Sex		Hand OA type*	
		Women	Men	with thumb	without thumb
		(n=41)	(n=21)	(n=46)	(n=16)
ADL-I ability (-5.81 to 6.38), logits, mean (SD)	2.0 (0.6)	1.9 (0.6)	2.1 (0.5)	2.0 (0.7)	2.0 (0.3)
AMPS ADL motor ability, logits, mean (SD)	1.2 (0.3)	1.2 (0.3)	1.3 (0.3)	1.2 (0.3)	1.3 (0.3)
AMPS ADL process ability, logits, mean (SD)	1.3 (0.2)	1.3 (0.2)	1.3 (0.2)	1.2 (0.3)	1.3 (0.2)



Relationship between self-reported and observed ADL ability

Low correlations:

- ADL-I \leftrightarrow AMPS ADL motor: $r = 0.35$
- ADL-I \leftrightarrow AMPS ADL process: $r = 0.25$

Interpretation: The measures capture different perspectives on ADL ability.



Conclusion / Take-home Messages

- Individuals with hand OA experience decreased ADL ability, especially increased physical effort.
- Group differences (sex and hand OA subtype) are small and not clinically meaningful
- Observed and self-reported ADL ability measures represent different perspectives on ADL ability.
- ADL assessment should combine self-report and observation.





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