

Supplemental materials for:

Loohuis AM, Wessels NJ, Dekker JH, et al. App-based treatment in primary care for urinary incontinence: a pragmatic, randomized controlled trial. *Ann Fam Med*. 2021;19(2):102-109.

Supplemental Appendices

Supplemental Appendix: Full inclusion and exclusion criteria

We used the following inclusion criteria: female sex; age ≥ 18 years; self-reported stress, urgency, or mixed UI at least twice a week according to the Three Incontinence Questions (3IQ); wanting treatment; and access to a smartphone or tablet. Women are excluded in case of: indwelling urinary catheter, urogenital malignancy, previous surgery for UI, treatment for UI in the previous year (pharmacological or non-pharmacological), terminal or serious illness, cognitive impairment, psychiatric illness, urinary tract infection (UTI) (dipstick, and if negative, dipslide or urine culture), overflow or continuous UI, pregnancy or recent childbirth (<6 months ago) or the inability to complete a questionnaire in Dutch.

Supplemental Table 1: Loss to follow-up sample; baseline characteristics and analysis of differences with sample available for follow-up

Characteristics	Available at FU	N*	Loss to FU	N*	Difference (95%CI) or p-value
Age, (years)	53.4 ± 11.3	195	49.0 ± 12.2	67	-4.445 (-7.654 to -1.237)
Body mass index (kg/m²)	27.3 ± 5.0	195	29.3 ± 6.0	66	1.997 (0.518 to 0.3475)
Higher educational level	101 (51.8%)	195	No data at FU	-	-
≥1 Vaginal births	165 (84.6%)	195	51 (77.3%)	66	0.241 (X ²)
Postmenopausal status, yes	26 (39.4%)	195	26 (39.4%)	66	0.345 (X ²)
Recruitment type		195		67	0.154 (X ²)
General practitioner	108 (55.4%)		44 (65.7%)		
Lay press or social media	87 (44.6%)		23 (34.3%)		
Duration of UI (years)	8.0 (5–14)	195	5.2 (3–12)	67	0.062 (U-statistic)
Type of UI		195		67	0.104 (X ²)
Stress	76 (39.0%)		34 (50.7%)		
Mixed, stress predominant	56 (28.7%)		14 (20.6%)		
Urgency	20 (10.3%)		2 (3.0%)		
Mixed, urgency predominant	43 (22.1%)		17 (25.4%)		
Previous treatment for UI		195		66	0.012 (X²)
None	137 (70.3%)		57 (86.4%)		
Pessary	1 (0.5%)				
Physical therapist	57 (29.2%)		9 (13.6%)		

Incontinence severity

ICIQ-UI SF score	9.8 ± 3.1	194	10.1 ± 3.7	65	0.324 (-0.604 to 1.252)
ICIQ-LUTSqol score	33.2 ± 7.4	194	35.0 ± 9.5	65	1.794 (-0.466 to 4.054)
UI (per day)	1.0 (0.33–2.16)	194	0.83 (0.33–3.08)	65	0.321 (U-statistic)

Values are means ± standard deviation, numbers (%), or medians (interquartile range). *Explanation differences in N: missing data of one baseline assessment and three baseline questionnaires. Educational level was assessed at follow-up. Abbreviations: ICIQ-UI SF, International Consultation on Incontinence Modular Questionnaire Urinary Incontinence Short Form; ICIQ-LUTSqol, ICIQ lower urinary tract symptoms quality of life; UI, urinary incontinence.

Supplemental Table 2: Per protocol study sample baseline characteristics of participants
assigned to App-based treatment or care-as-usual

Characteristics	App-treatment	N	Care as usual	N
Age, (years)	54.2 ± 12.4	96	53.0 ± 9.4	75
Body mass index (kg/m²)	26.6 ± 4.7	96	28.1 ± 5.5	75
Higher educational level	52 (54.2%)	96	37 (49.3%)	75
Vaginal births, ≥1	84 (87.5%)	96	63 (84.0%)	75
Postmenopausal status, yes	48 (50.0%)	96	38 (50.7%)	75
Recruitment type		96		75
General practitioner	52 (54.2%)		40 (53.3%)	
Lay press or social media	44 (45.8%)		35 (46.7%)	
Duration of UI (years)	9.5 (5–15)	96	8.0 (4–18)	75
Type of UI		96		75
Stress	35 (36.5%)		30 (40.0%)	
Mixed, stress predominant	26 (27.1%)		22 (29.3%)	
Urgency	11 (11.5%)		7 (9.3%)	
Mixed, urgency predominant	24 (25.0%)		16 (21.3%)	
Previous treatment for UI		96		75
None	70 (72.9%)		49 (65.3%)	
Physical therapist	26 (27.1%)		26 (34.7%)	
Incontinence severity				

ICIQ-UI SF score	9.2 ± 2.9	96	10.7 ± 3.1	75
ICIQ-LUTSqol score	33.0 ± 7.5	96	34.2 ± 7.4	75
UI (per day)	1.0 (0.33–2.00)	96	1.3 (0.50–2.33)	75

Values are means ± standard deviation, numbers (%), or medians (interquartile range).. Educational level was assessed at follow-up. Abbreviations: ICIQ-UI SF, International Consultation on Incontinence Modular Questionnaire Urinary Incontinence Short Form; ICIQ-LUTSqol, ICIQ lower urinary tract symptoms quality of life; UI, urinary incontinence.

Supplemental Table 3: Unadjusted differences (95% CI) for the change of mean (SD) questionnaire scores from baseline to follow-up

Outcomes	Adjusted difference (95% CI)	Unadjusted difference (95% CI)
ICIQ-UI SF score	0.058 (-0.776 to 0.891)	0.401 (-0.464 to 1.266)
ICIQ-LUTS-qol score	-0.566 (-2.035 to 0.902)	-0.552 (-2.158 to 1.055)

Analyses performed on an intention to treat base without adjustment for baseline scores for the ICIQ-UI SF score and ICIQ-LUTS-qol score. Values are presented as means \pm standard deviation or as numbers (%). Abbreviations: ICIQ-UI SF, International Consultation on Incontinence Modular Questionnaire Urinary Incontinence Short Form; ICIQ-LUTS-qol, ICIQ lower urinary tract symptoms quality of life; UI, urinary incontinence.

Supplemental Table 4: Per protocol analysis for the change of mean UI severity (SD) from baseline to follow up per group allocation and adjusted difference (95% CI)

Outcomes	Change from baseline				Adjusted difference (95% CI)
	App-treatment	N	Care as usual	N	
ICIQ-UI SF score	-2.15 \pm 2.56	95*	-2.75 \pm 3.62	75	0.071 (-0.837 to 0.979)

Analyses performed on a per protocol base. ICIQ-UI SF score adjusted for baseline. Values are presented as means \pm standard deviation. Abbreviations: ICIQ-UI SF, International Consultation on Incontinence Modular Questionnaire Urinary Incontinence Short Form; *One baseline-questionnaire missing.