



UMEÅ UNIVERSITET

Umeå University Medical Dissertations, New Series No 2330

---

# **APP-BASED SELF- MANAGEMENT OF URGENCY AND MIXED URINARY INCONTINENCE IN WOMEN**

**Efficacy, long-term results, and factors  
associated with treatment satisfaction**

Towe Wadensten

## **Akademisk avhandling**

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av  
medicine doktorexamen framläggs till offentligt försvar i Triple Helix,  
Universitetsledningshuset, fredagen den 6 december, kl. 09:00.

Avhandlingen kommer att försvaras på svenska.

Fakultetsopponent: Professor Guri Rørtveit,

Institutt for global helse og samfunnsmedisin, Universitetet i Bergen, Norge.

Institutionen för Folkhälsa och Klinisk Medicin

## Organization

Umeå University  
Department of Public Health  
and Clinical Medicine

## Document type

Doctoral thesis

## Date of publication

15 November 2024

## Author

Towe Wadensten

## Title

App-based self-management of urgency and mixed urinary incontinence in women – Efficacy, long-term results, and factors associated with treatment satisfaction

## Abstract

**Background:** Urinary incontinence (UI) affects approximately one-third of women. Urgency urinary incontinence (UUI, leakage with a sense of urgency) and mixed urinary incontinence (MUI, leakage with a sense of urgency and upon physical exertion) account for ≈50% of female UI. Previous studies have shown that app-based interventions are effective treatments for other types of UI.

**Aim:** To evaluate the efficacy and long-term effects of the app Tät® II for self-management of UUI and MUI, and to study aspects related to treatment satisfaction.

**Method:** Randomized controlled trial, followed by a long-term cohort study. Participants were adult women with UUI or MUI and ≥2 leakages per week. They were randomized (1:1) to receive either the Tät® II app, including information and treatment programs on pelvic-floor muscle training (PFMT) and bladder training, psychoeducational material, and lifestyle advice (treatment group, n=60); or to receive a limited information app (control group, n=63). Short-term follow-up was at 15 weeks, after which the control group received the intervention. Long-term follow-up was 15 months after receiving the treatment app.

For Papers I and II, the primary outcomes were the validated International Consultation on Incontinence Questionnaire – Urinary Incontinence Short Form (ICIQ-UI SF). For Paper III, factors at baseline and short-term follow-up were analyzed for correlation with treatment satisfaction at long-term follow-up.

Those who answered “yes” to the question “Do you currently consider that the treatment you have undergone is satisfactory?” were defined as satisfied.

**Results:** Of 123 included women, ≈25% had UUI and ≈75% had MUI. At short-term follow-up, mean ICIQ-UI SF score improved from 11.7 to 7.0 in the treatment group, and from 11.4 to 9.8 in the control group. The estimated between-group difference was –3.1 (95% CI, –4.8 to –1.3,  $p < 0.001$ ), in favor of the treatment group (Paper I). In the cohort analysis, mean ICIQ-UI SF score changed from 11.5 at baseline to 7.6 at long-term follow-up (mean difference 4.0, 95% CI 3.2–4.7,  $p < 0.001$ ) (Paper II). 58% of the women were satisfied with treatment. A higher incontinence-related quality of life at baseline, improvement in the ability to endure urgency, and confidence in PFMT ability post-treatment were associated with treatment satisfaction (Paper III).

**Conclusion:** The Tät® II app is effective in improving UUI and MUI in women, and the effect remained significant in the long term. Most participants were satisfied with the treatment long-term—in particular those with higher quality of life pre-treatment, and with post-treatment pelvic-floor and bladder control.

## Keywords

Urgency urinary incontinence, mixed urinary incontinence, eHealth, mHealth, self-management, randomized controlled trial, smartphone app.

## Language

English

## ISBN

print: **978-91-8070-536-3**  
PDF: **978-91-8070-537-0**

## ISSN

**0346-6612**

## Number of pages

86 + 3 papers