



Background

Pelvic floor dysfunction is common after menopause, driven by oestrogen loss, ageing, and cumulative obstetric trauma to the levator ani and urethral support structures. Symptom-based tools such as the Pelvic Floor Impact Questionnaire (PFIQ-7) capture patient-reported quality of life, but may not reliably reflect the underlying anatomical support defect.

Transperineal Ultrasonography (TPUS) offers a non-invasive, objective window onto pelvic floor anatomy — including urethral mobility and levator hiatus dimensions — that can complement subjective symptom scores.

Objectives

To assess pelvic floor function by Transperineal Ultrasonography (TPUS) in postmenopausal women, and to compare objective TPUS findings against subjective quality-of-life scores (PFIQ-7) across symptomatic and asymptomatic women.

Study Population

The study assessed 100 post menopausal women. Demographic characteristics — age, BMI, and parity — were homogeneous between the symptomatic and asymptomatic groups, allowing a like-for-like anatomical comparison.

Why This Matters

A validated, objective imaging correlate of urethral support would let clinicians identify at-risk women even when symptom questionnaires under-report dysfunction, supporting earlier and better-targeted intervention. By studying a postmenopausal-only, demographically matched cohort, this study isolates oestrogen-deficiency-related pelvic floor change from confounding effects of age, BMI, or parity.

Limitations

Cross-sectional design captures anatomy and symptoms at a single tim point, and cannot establish the temporal or causal relationship between anatomical change and symptom onset. As a single-centre cohort, these findings warrant validation in larger, multi-centre populations and across different ultrasound operators before wider clinical adoption.

Methods

Prospective observational study of 100 postmenopausal women, stratified into symptomatic and asymptomatic groups based on pelvic floor symptoms. Subjective assessment: quality of life and symptom burden captured using the validated PFIQ-7 (Pelvic Floor Impact Questionnaire-7). Objective assessment: pelvic floor anatomy evaluated by Transperineal Ultrasonography (TPUS) in all women.

TPUS Assessment Images

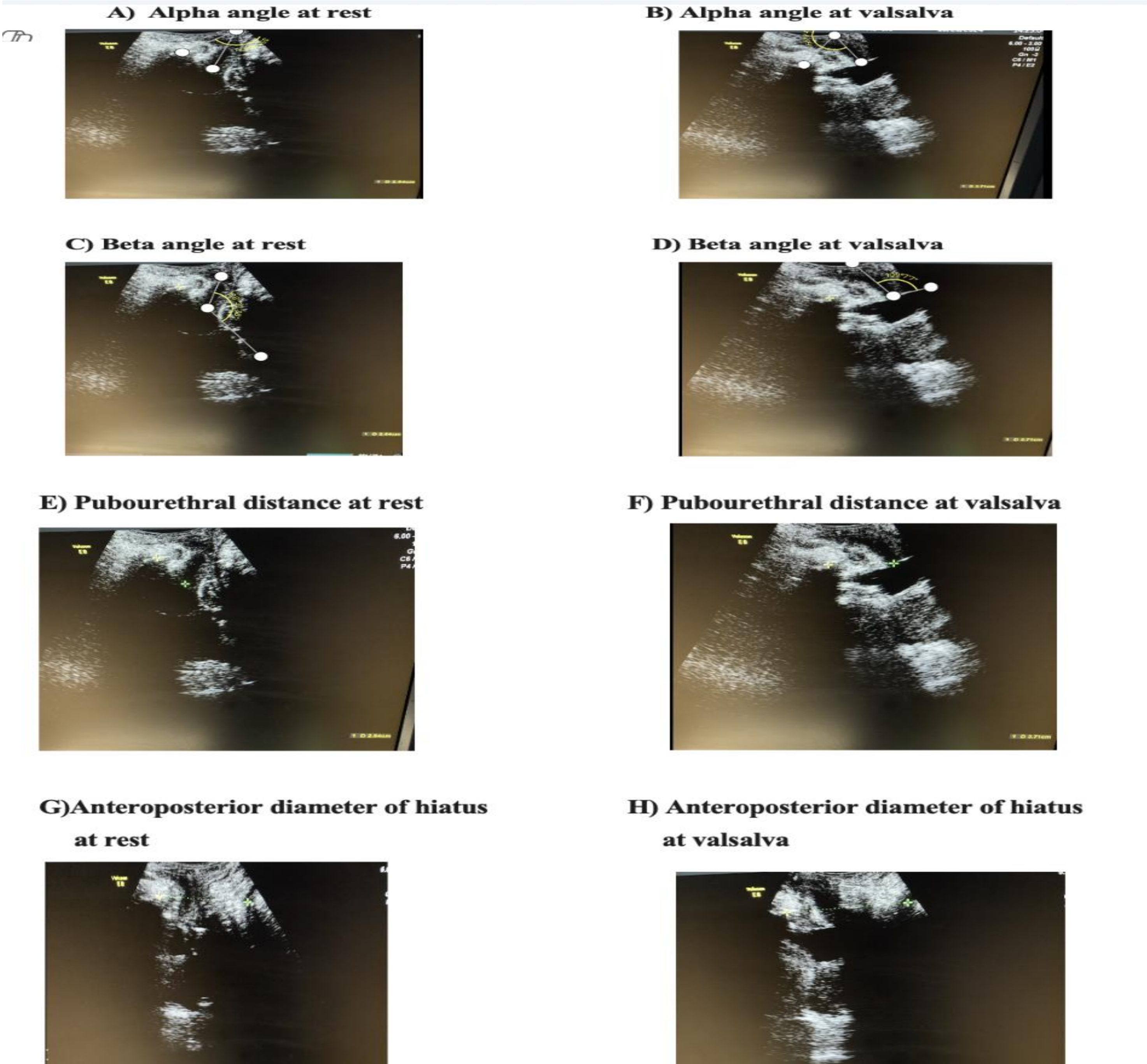


Figure. TPUS parameters in a postmenopausal woman: (A,B) alpha angle, (C,D) beta angle, and (E,F) pubourethral distance at rest/Valsalva; (G,H) anteroposterior diameter of levator hiatus at rest/Valsalva.

Statistical Comparison

- TPUS parameters compared between symptomatic and asymptomatic groups, and correlated against PFIQ-7 quality-of-life scores.

Results

This study compared 45 asymptomatic and 55 symptomatic postmenopausal women using transperineal ultrasonography. TPUS findings correlated strongly with clinical (symptomatic vs. asymptomatic) status, but did not align with subjective PFIQ-7 quality-of-life scores.

TPUS Parameter	Symptomatic vs. Asymptomatic	Significance
Alpha angle (rest & Valsalva)	Significantly ↑	p < 0.05
Beta angle (rest & Valsalva)	Significantly ↑	p < 0.05
Pubourethral distance (rest & Valsalva)	Significantly ↑	p < 0.05
AP diameter of hiatus (rest, Valsalva, max. contraction)	No difference	NS
Correlation with PFIQ-7 (QoL score)	No correlation	NS

- In symptomatic women, alpha angle, beta angle, and pubourethral distance were all significantly increased at both rest and Valsalva — indicating greater urethral mobility and reduced anatomical support.
- Anteroposterior diameter of the levator hiatus did not differ significantly between groups at rest, Valsalva, or maximum contraction.

Conclusions

TPUS is a precise, objective tool for identifying anatomical urethral support deficits, regardless of patient-reported symptom severity. Because TPUS findings did not align with PFIQ-7 scores, symptom questionnaires alone may under- or over-estimate the degree of underlying anatomical dysfunction. Incorporating ultrasonographic assessment into clinical practice may facilitate timely diagnosis and guide targeted management, ultimately improving quality of life in affected individuals.