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Yoga Based Management Of Urinary Incontinence And Over Active Bladder; A Literature Review

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Abstract

Background- Urinary incontinence (UI) is a common and upsetting illness that affects women physically, psychologically, and socially. Pelvic floor muscle training (PFMT) and pharmaceutical treatment are examples of conventional therapies that frequently exhibit poor adherence and inconsistent outcomes. Yoga has become popular in recent years as a non-pharmacological, holistic approach to improve quality of life and pelvic floor function. Titaliasana (Butterfly Pose/Baddha Konasana) is one of the yogasana that has drawn attention due to its ability to help manage continence by strengthening and relaxing the pelvic floor muscles.
Objective: To evaluate the effect of the yogasana Baddha Konasana (Butterfly Pose), as a mind–body therapeutic intervention, on the management of urinary incontinence and over active bladder.
Methods- A systematic literature search was conducted in PubMed, Google Scholar, and other web databases covering studies from 2010–2025. Thirteen eligible studies, including randomized controlled trials, pilot, observational, and descriptive-analytical designs, were reviewed. Studies focusing on yoga-based interventions for UI in adult women were included, while non-yoga, non-English, or retracted studies were excluded.
Result- Yoga therapies significantly decreased episodes of urine leakage, strengthened pelvic floor muscles, and improved participants' quality of life across all analyzed trials. Baddha Konasana and Supta Baddha Konasana facilitated better pelvic alignment, relaxation of overactive muscles, and stabilization of the bladder neck. Improved pelvic posture and bladder support were found by imaging-based findings. Yoga practices were safe, feasible, and well accepted across age groups, often yielding results comparable or superior to PFMT.
Conclusion- Yoga - especially Titaliasana (Butterfly Pose)—emerges as a promising, safe, and effective complementary approach for managing urinary incontinence in women. By integrating physical, psychological, and neuromuscular benefits, it provides a holistic alternative to conventional therapy. Large-scale, standardized trials are warranted to establish its independent therapeutic efficacy.

Keywords- Yogasana, Butterfly Pose, Titaliasana, Baddha Konasana, Over Active Bladder, Urinary Incontinence.

1. Introduction-

Overactive bladder (OAB) and urinary incontinence (UI) are prevalent, limiting condition that affect women globally [1]. Urinary incontinence (UI) is the term for the involuntary leakage of urine that frequently happens without conscious control. It can be brought on by activities like coughing or sneezing, which can lead to tension and exhaustion. Treatment strategies vary depending on the type of incontinence, which may occur as stress, urgency, mixed, or overflow incontinence [2]. Urinary incontinence is divided into various categories by the International Urogynecological Association (IUGA) and the International Continence Society (ICS): (1) Stress incontinence, which is the uncontrollable flow of urine brought on by physical activity like laughing, coughing, sneezing, or throat clearing. (2) Urgency incontinence, which is defined by an involuntary flow of urine accompanied by an intense, abrupt need to urinate that is hard to resist; and (3) Mixed incontinence,

which combines the characteristics of urgency and stress incontinence [3]. Pelvic floor muscle training (PFMT) and medication therapy are common conventional therapies for urine incontinence and overactive bladder. However, conservative non-pharmacologic methods are now commonly advised as first-line treatment; therapeutic yoga has lately surfaced as a viable, safe addition to or substitute for conventional pelvic floor muscle training (PFMT) [1, 4, 5]. The clinical evidence for yoga therapies in female UI is summarized in this study, which also looks at mechanistic studies supporting the use of particular postures, including Titaliasana (Baddhakonasana, Bound Angle, Butterfly Pose).

2. Literature Review

Most communities view urinary incontinence (UI) as a stigmatizing illness, which results in low care-seeking rates and responder bias in observational studies [6, 7]. Consequently, general health surveys employing validated, symptom-based questionnaires yield the most accurate prevalence estimates [8]. A wide incidence of 5–72% is reported by reliable studies from the US and wealthy nations, converging at about 30% [9, 10]. In Europe and the US, the prevalence of severe UI, which is defined as leakage multiple times per week, is more stable at 6–10% [11, 12]. Cultural variations and methodological elements such case definitions, memory intervals, and symptom severity evaluation are the main causes of variations in prevalence [13, 14, 15]. The incidence of UI is less than 2/1000 person-years in women under 40, and it increases with age [16]. While urgency and mixed incontinence rise with age, stress incontinence is more prevalent overall and peaks in the fifth decade [9, 17, 11]. As the population ages, UI prevalence is expected to climb significantly worldwide; in the US, the number of afflicted women may rise from 18.3 million in 2010 to 28.4 million in 2050 [18].

2.1 Type of urinary Incontinence

Three major types of UI are described.

The "hammock hypothesis" is frequently used to explain stress urine incontinence (SUI), which is caused by either intrinsic sphincter insufficiency or urethral hypermobility brought on by loss of support [19, 20].

Both neurogenic and myogenic pathways are implicated in urgency urinary incontinence (UUI), which is associated with detrusor hyperactivity, poor bladder compliance, or bladder hypersensitivity [21, 22].

Mixed urine incontinence (MUI) is more prevalent as people age and has characteristics of both urgency and stress incontinence [9, 11].

2.2 Diagnostic Tools & Steps

Several tools and assessments are suggested to ascertain the nature and severity of the urinary incontinence:

Questionnaires for patients: To classify the type of incontinence, use tools such as the 3 Incontinence Questions ("if, when, and how often urine leakage occurs") [23].

1. Have you leaked some urine, even a small amount, in the last three months?
   Yes No
2. Have you leaked urine in the last three months? (Verify anything that applies.)

A. When you were engaging in physical action, such exercising, lifting, sneezing, or coughing?
B. Have you ever felt the need to urinate but been unable to reach the restroom quickly enough?
C. Without engaging in any physical action or feeling a sense of urgency?

3. How frequently did you leak urine over the last three months? (Just check one.)

A. When you were engaging in physical action, such exercising, lifting, sneezing, or coughing?
B. Have you ever felt the need to urinate but been unable to reach the restroom quickly enough?
C. Without engaging in any physical action or feeling a sense of urgency?
D. Almost as frequently with workout as with a sense of urgency?

	Response to question 3	Type of incontinence
A	Most frequently when engaging in active activity	Stress predominant or stress only
B	Usually when you feel the need to urinate	Urge predominant or urge only
C	Lacking exercise or a sense of urgency	Other cause predominant or other cause only
D	Physical exercise and a sense of urgency	mixed

Voiding (Bladder) Diary:

Physical Examination:
By recording the frequency, time, and circumstances of incontinence, a voiding diary aids in the clarification of unclear patient history. For tracking treatment response and differentiating between stress (little leaks with pressure) and urge (large volume, frequent nocturia) incontinence, a three-day diary is dependable and practicable [23].
Anatomic abnormalities or temporary reasons that the DIAPPERS mnemonic is unable to identify can be found with a physical examination [24, 25, 26].
Cardiovascular exam: Look for signs of volume overload, such as rales or pedal edema, which can exacerbate urge incontinence by increasing urine flow [25, 27].
Abdomen: Percuss the bladder for distention, which may indicate overflow incontinence; palpate for masses or tenderness [25, 27].
Extremities: Examine peripheral edema (volume overload) and joint mobility/function (functional incontinence).
Men: Examine your prostate to find any enlargement that may be causing outlet obstruction [28, 29].
Women: External gynecologic examination to check for vulvar irritation or atrophic vaginitis. Frequency, urgency, or urge incontinence are predisposed to by estrogen deficiency [24–28–30]. Although it may not induce incontinence on its own, pelvic organ prolapse (cystocele, urethral polyps, rectocele) frequently coexists with atrophic vaginitis [24, 27, 28, 30].
Rectal exam: Identify fecal impaction, which can obstruct the urethra, impair emptying, and cause overflow incontinence [25, 31]. Older adults: Include cognitive and functional evaluation to assess for functional incontinence [25, 26].
Laboratory Test: Include Urinalysis and Urine Culture, among other tests to rule out infection, hematuria, or other reversible causes. Also, USG (Pelvic/Bladder).
Uroflowmetry: This uses specialized equipment to measure the urine flow rate over time to create a flow graph. Normal rates of 15–25 ml/s indicate an atonic bladder or outlet obstruction [32].

2.3 Urinary Incontinence Interventions [33]
• **Devices:** continence aids and products, intravaginal devices, and incontinence pessaries.
• **Medication:** SNRIs (duloxetine), vaginal estrogen, anticholinergics, and β3-adrenergic agonists (mirabegron).
• Surgery for stress incontinence: urethropexy, fascial sling, and mid-urethral sling.
• **Neuromodulator:** stimulation of the sacral and percutaneous tibial nerves.
Injections of onabotulinumtoxin A are used as intravesical treatment.
• **Measures of quality of life** include counselling, patient-reported outcomes (PROs), continence support.
• **Non-surgical methods include** weight loss, biofeedback, PFMT (Kegels), behavioral therapy, bladder retraining, fluid optimization, and yoga therapy.

2.4 The Role of Yogasana (Butterfly pose) in Strengthening Pelvic Floor Muscles
Yoga is a holistic practice that emphasizes the union of the mind, body, and spirit. It utilizes physical postures, breathing techniques, and meditation to improve both physical and mental health. Yoga has been becoming increasingly investigated as a drug-free intervention for the treatment of stress urinary incontinence (SUI) in women. In particular, yogasanas have demonstrated potential in enhancing

neuromuscular coordination and pelvic floor strength, hence reducing the dysfunction caused by SUI. Research has specifically looked at poses that are thought to improve stability, alignment, and circulation in the pelvic area, such as Bhadrasana, Vajrasana, Paschimottanasana, and Ushtrasana [34], as well as the Modified Butterfly Pose [35], Baddhakonasana [36,37], and Supta Baddhakonasana [38]. Butterfly variations optimize pelvic posture and stability [38] and allow optimal relaxation of overactive and underactive pelvic floor muscles [35], which facilitates bladder support, according to functional and imaging investigations. Numerous randomized trials were out between 2014 and 2024 show that yoga therapies that include these poses considerably improve quality of life, improve continence outcomes, and decrease episodes of urine leakage [1,4,3,6,3,9,40]. Notwithstanding these promising results, there are still issues with varied yoga practices, limited sample sizes, short follow-up times, and a majority of multi-pose interventions as opposed to standalone assessment of butterfly poses. Therefore, to confirm Titaliasana/Baddhakonasana's independent therapeutic effectiveness, high-quality randomized controlled trials with standardized outcome measures and objective imaging or urodynamic assessments are still required [5, 41]

3. Methods

Search Strategy

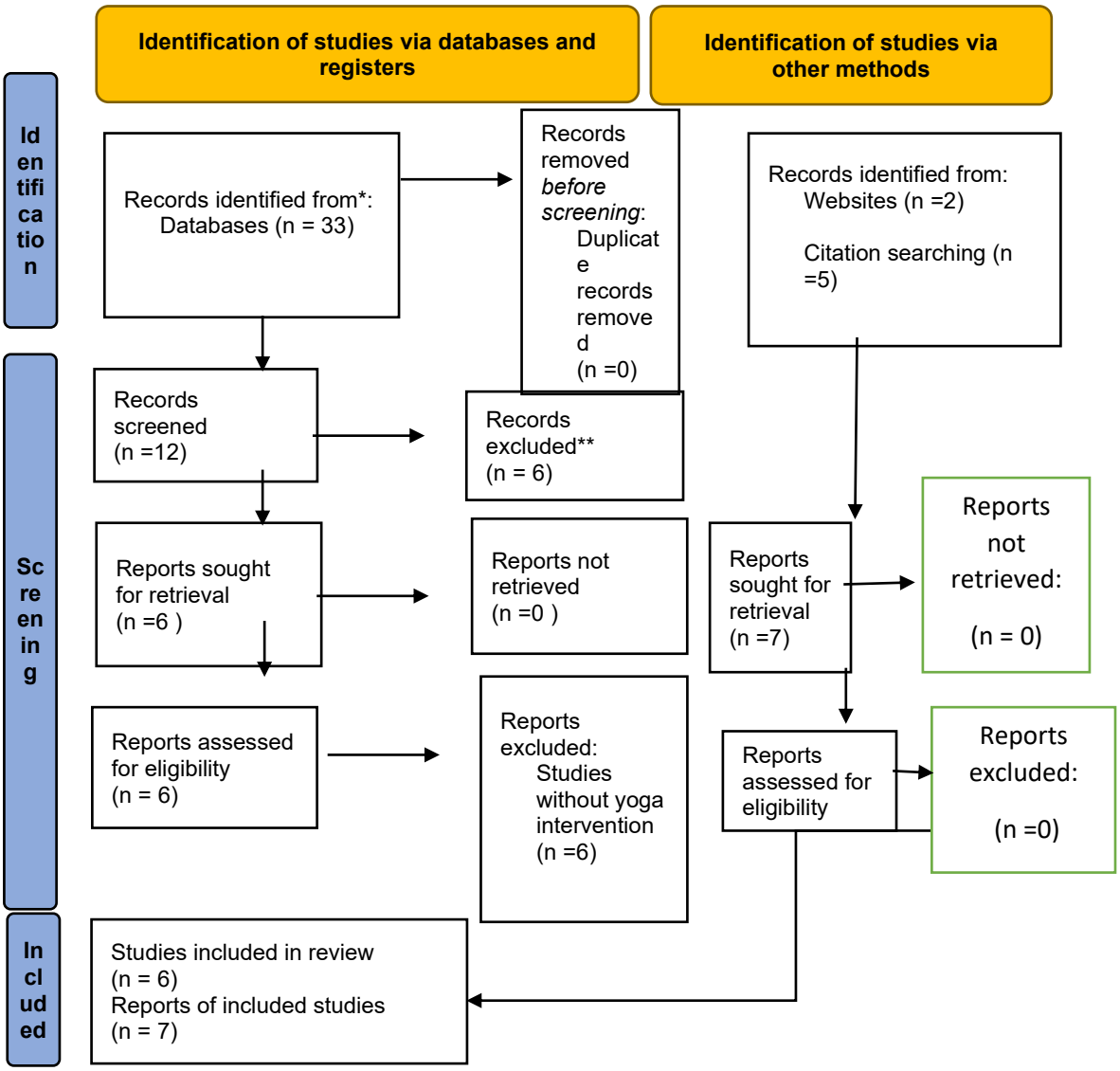
Studies from 2010 to 2025 that were gathered from internet resources like PubMed, Google Scholar, and web searches were included in this analysis. A qualitative approach to data collecting was taken in this study. MeSH keywords were used in the literature search. It is also applied to related topics, such as "stress urinary incontinence," which is utilized for "prevalence."

All relevant articles and the reference lists of previous meta-analyses were also reviewed.
Urinary Incontinence or Overactive Bladder or Pelvic Floor Disorders and Yogasana or yoga therapy or mind-body therapy or Baddha Konasana or Butterfly pose were the keywords used to conduct a systematic literature search in PubMed.and online as well.

Screening process

A total of 33 records were identified through database searching, along with 2 records from websites and 5 through citation searching. After removing duplicates (n=0), 12 records were screened, out of which 6 were excluded. The remaining 6 reports were sought for retrieval, all of which were successfully retrieved and assessed for eligibility. In parallel, 7 additional records were sought for retrieval from other sources, all retrieved and assessed for eligibility. Out of these, 6 reports without yoga intervention were excluded. Finally, 6 + 7 = 13 studies met the eligibility criteria and were included in the review.

PRISMA flow diagram representation



4. Inclusion and Exclusion Criteria

Inclusion

• This study included (cross-sectional, RCTs, Pilot study, Observational, control, systematic reviews and descriptive-analytical papers).evaluating yoga interventions in urinary incontinence among women.

• This study included affecting urinary incontinence in adult women.

• The studies were conducted after 2000.

Exclusion- Studies without yoga intervention, non-female population, non-English articles and retracted studies.

5. Results

A total of 13 studies were included:

1. **Kannan et al. (2022)** conducted a randomized controlled pilot trial on 30 females aged =60 years. The study compared yoga-based exercises, Pilates, and pelvic floor muscle training (PFMT) over a 12-week period. Findings revealed that yoga (including Utkatasana and Baddha Konasana) produced significantly greater improvements in urinary incontinence severity scores (ICIQ-SF) compared to Pilates. Although PFMT also demonstrated beneficial effects, yoga was superior in reducing overall symptoms [40].

2. **Dayican et al. (2023)** carried out a descriptive cross-sectional study on 76 females above 18 years to evaluate pelvic floor dysfunction (PFD) in relation to functional status of pelvic floor muscles (PFM). The results indicated that relaxation and contraction positions of PFM varied according to dysfunction type. For example, normal PFM showed maximal relaxation and contraction in the modified butterfly pose, while non functional PFM responded best in modified deep squat with block pose. Overactive and underactive PFM contracted most in modified child's pose and relaxed in modified butterfly pose [35].
3. **Huang et al. (2014)** performed a pilot randomized trial with 19 women aged 40 years and above suffering from stress, urgency, or mixed-type incontinence. Over a 6-week group-based yoga therapy program—including postures such as Tadasana, Utkatasana, Trikonasana, Malasana, Viparita Karani, and Supta Baddha Konasana—the study demonstrated feasibility, safety, and preliminary efficacy of yoga in reducing urinary incontinence episodes [36].
4. **Macnab et al. (2025)** conducted an observational MRI-based imaging study focusing on pelvic positioning during yoga practice. The results showed that postures such as Utkatasana and Baddha Konasana improved pelvic positioning and stability, which may contribute to reducing urinary leakage episodes [38].
5. **Sharma et al. (2022)** performed a randomized controlled study involving 200 women—100 in the yoga intervention group (aged 20–45 years) and 100 controls (aged 20–38 years). Conducted over three months, the study concluded that yoga during pregnancy significantly improved pelvic floor dysfunction without any adverse effects. The yoga protocol included relaxation, loosening practices, Pawanmuktasana, Matyasana, Viparitakarani, Setubandhasana, Bhadrasana, Vajrasana, and pranayamas such as Anulom-Vilom and Bhramari [42].
6. **Shafaq et al. (2022)** conducted an interventional study on 44 women aged 17–40 years. Practicing Utkatasana regularly for 6 weeks led to significant improvements in pelvic floor muscle strength and overall quality of life in women with urinary incontinence [43].
7. **Bhoir et al. (2020)** carried out a randomized controlled study with 40 middle-aged obese women (40–65 years) divided into a yoga group and a conventional exercise (Kegel's) group. Over 6 weeks, both groups showed improvements in stress incontinence and quality of life. However, the yoga group, practicing Tadasana, Utkatasana, Trikonasana, Malasana, Viparita Karani, and Supta Baddha Konasana, demonstrated superior benefits compared to Kegel's exercises [37].
8. **Tenfelde et al. (2021)** performed a pilot study with 12 women practicing yoga, including Utkatasana, over an 8-week period. The findings indicated notable reductions in urgency urinary incontinence symptoms, along with improvements in awareness, pelvic floor engagement, sleep quality, depressive symptoms, stress, and anxiety [5].
9. **Wieland et al. (2019)** conducted a Cochrane systematic review evaluating yoga as a treatment for urinary incontinence in women. The review included available randomized controlled trials and concluded that yoga may have beneficial effects on reducing urinary incontinence symptoms and improving quality of life, though more high-quality evidence is required to establish efficacy [39].
10. **Li (2022)** carried out a clinical study on the effects of yoga exercise on pelvic floor rehabilitation among postpartum women. The parameters assessed were pelvic floor muscle strength and urinary function. The study reported positive improvements in pelvic floor recovery and reduction in urinary incontinence symptoms following yoga intervention. However, it should be noted that this article was later retracted in 2023, and therefore its findings must be interpreted with caution [44].
11. **Huang et al. (2019)** conducted a single-center randomized controlled trial to test the feasibility, tolerability, and clinical effectiveness of a group-based yoga program for ambulatory women with

urinary incontinence. Over a 3-month intervention period, participants receiving yoga therapy demonstrated a significant reduction in the frequency of incontinence episodes compared to the control group, establishing yoga as a feasible and well-tolerated therapy [4].

12. **Huang et al. (2024)** further advanced this research through a multi-center randomized trial comparing a therapeutic pelvic yoga program with a general physical conditioning program in women with urinary incontinence. The primary outcomes measured were incontinence frequency and symptom severity. After 12 weeks of intervention, women in the yoga group experienced significantly greater improvements in urinary incontinence symptoms and quality of life compared to those in the physical conditioning group, providing robust evidence for yoga as an effective therapeutic option [1].
13. **Nicosia et al. (2020)** conducted a randomized feasibility trial on 27 ambulatory women (mean age 65 years) to evaluate self-efficacy and observed competency in practicing yoga postures for urinary incontinence. The 12-week Iyengar-based yoga intervention included twice-weekly group sessions and once-weekly home practice. Participants rated their self-efficacy for 15 yoga postures on a 5-point Likert scale, while an expert yoga consultant assessed their competency on the same scale. In addition, participants rated their confidence in adhering to home practice. Results showed that mean self-efficacy scores for postures ranged from 3.6 to 4.5, observed competency ratings from 3.3 to 5.0, and adherence self-efficacy had a mean of 2.8. Posture self-efficacy was inversely correlated with age ($p = 0.01$) but positively correlated with physical function ($p = 0.03$) and mobility ($p = 0.01$). However, no significant correlation was found between self-efficacy scores and expert-rated competency or adherence scores. The study highlights the potential of these tools to evaluate specific components of yoga interventions and their relation to participant performance and adherence [41].

Main findings:

A. **Yoga as a therapeutic option:** Multiple studies (e.g., Huang et al. 2019, Huang et al. 2024) demonstrated that yoga is a feasible, safe, and acceptable non-pharmacologic intervention for women with urinary incontinence.
B. **Reduction in incontinence frequency:** Randomized controlled trials reported that group-based yoga programs significantly reduced urinary leakage episodes and improved continence outcomes compared to control or physical conditioning groups.
C. **Improvement in pelvic floor function:** Studies (e.g., Li 2022 – despite later retraction) suggested yoga may enhance pelvic floor muscle strength and rehabilitation, particularly in postpartum women.
D. **Quality of life benefits:** Several trials highlighted improvements in participants' quality of life, psychological well-being, and self-efficacy in managing urinary symptoms after yoga interventions.
E. **Feasibility and tolerability:** Pilot trials reported that yoga protocols were well tolerated, had high adherence, and were acceptable to women across different age groups (middle-aged, postmenopausal, postpartum).
F. **Comparison with standard therapies:** Evidence suggests that yoga provides comparable or additional benefits when combined with conventional treatments such as pelvic floor muscle training or physical exercise.

6. Discussion

Yoga has emerged as a promising non-pharmacological intervention for urinary disorders, particularly urinary incontinence (UI) [1,4]. Across randomized controlled trials, pilot studies, and feasibility assessments conducted between 2014 and 2024, yoga has been consistently associated with improvements in pelvic floor strength, neuromuscular coordination [44], and relaxation [35,]. These mechanisms contribute directly to reductions in urinary leakage episodes [38] and improvements in continence outcomes [44]. Importantly, yoga also promotes psychological well-being[5,45] and quality of life[1,4,36,39,40], addressing both the physical and psychosocial burden of UI.

Within yoga practices, Titaliasana (butterfly pose, including Baddha Konasana and Supta Baddha Konasana) plays a distinctive role. By opening the pelvic region and enhancing blood flow, this posture facilitates pelvic floor relaxation [35], improves alignment, and provides structural support to

the bladder. Imaging-based evidence suggests that butterfly variations optimize pelvic positioning and stability[5,41], while functional studies report maximal relaxation of overactive and underactive pelvic floor muscles in this pose[5, 41, 35]. These findings indicate that Titaliasana may represent a posture of central importance in yoga-based management of urinary dysfunction.

Strength of evidence lies in the breadth of research: multiple randomized controlled trials across diverse populations (postpartum, middle-aged, postmenopausal) consistently demonstrate that yoga is safe, feasible, and effective for UI [37, 44]. The multi-center trial by Huang et al. (2024) provides particularly robust evidence of yoga's efficacy, establishing it as a credible therapeutic option beyond smaller pilot studies [1].

However, several limitations must be acknowledged. Considerable heterogeneity exists in yoga protocols, with interventions varying in duration, intensity, and included postures, making cross-study comparisons challenging. Most studies assessed yoga as a multi-pose intervention, limiting the ability to isolate the independent effects of Titaliasana. Small sample sizes, short follow-up durations, and lack of blinding further reduce the generalizability of findings. Additionally, the absence of standardized outcome measures, such as uniform use of validated continence scales or objective imaging, complicates interpretation.

A clear research gap remains in the isolated evaluation of Titaliasana. While preliminary evidence highlights its potential in improving pelvic alignment and facilitating pelvic floor relaxation, no high-quality randomized controlled trial has yet focused exclusively on this posture. Future research should prioritize Titaliasana-specific protocols, incorporate objective assessments such as MRI or urodynamic studies, and examine long-term outcomes to establish its independent therapeutic value.

7. Conclusion

Yoga, particularly Titaliasana (Butterfly Pose), emerges as a promising non-pharmacological intervention for women with urinary disorders. Evidence from randomized trials and reviews demonstrates that yoga can significantly reduce incontinence frequency, enhance pelvic floor function, and improve quality of life. It is generally well tolerated, feasible across age groups, and associated with high adherence rates. Importantly, yoga interventions appear at least comparable to conventional pelvic floor muscle training (PFMT/Kegel exercises), with additional psychological and quality-of-life benefits.

Future research should prioritize well-designed, large-scale trials that isolate and rigorously evaluate Titaliasana to determine its specific therapeutic contributions. Establishing standardized yoga protocols could strengthen its role as an effective, patient-centered complement to existing urinary disorder management strategies.

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