RESEARCH ARTICLE

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Impact of Stress Urinary Incontinence and Quality of Life Among Women Living in a Rural Area: A Systematic Review and Meta-Analysis

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Abstract

Introduction: Urine incontinence (UI) significantly impacts women's quality of life, with stress Urinary Incontinence (SUI) affecting 15.9% of adult women. SUI, often triggered by activities like sneezing or coughing, correlates with age and childbirth. Pelvic floor muscle training is the primary therapy, improving conditions for two-thirds of women. UI, linked to age, obesity, and other factors, negatively influences various aspects of life. Despite its prevalence, many women avoid seeking care due to stigma and low treatment expectations, emphasizing the need for innovative, accessible interventions. **Aims and Objective:** To determine the quality of life due to SUI among the Indian population. **Method:** This meta- analysis was conducted from 2000 to 2023, and included studies from PubMed, Cochrane, Research Gate, Scopus, and ScienceDirect, using MeSH keywords for SUI prevalence and its impact on quality of life. The research design evaluated separate studies for prevalence and quality of life, specifically focusing on Indian studies for cultural relevance. The PRISMA flowchart guided systematic review procedures, resulting in 14 selected studies. The prevalence and impact of SUI have been analyzed from the pooled prevalence and IIQ-7 score determined in the included studies. **Result:** This meta-analysis examines the frequency of UI in several studies retrieved from different databases between 2000 and 2023. There is a lot of variation (I-squared values > 97%), and the pooled prevalence is 3.2%. The studies also showed that there are pooled IIQ-7 scores of 12, implying moderate impact. Rates of individual studies vary between 0.014 and 70.9%. Cochran's Q statistic indicates significant heterogeneity. **Conclusion:** This meta-analysis showed an IIQ-7 score of 12, which implies a minimal impact of SUI on quality of life. The meta-analysis found 3.2% UI. Lack of awareness among rural women regarding SUI was the primary reason for the presence of biases in the included studies.

Keywords: Prevalence, Quality of Life, Rural Area, Stress Urinary Incontinence

1. Introduction

Urinary Incontinence (UI) is characterized by loss of urine or urination without any voluntary control, may be associated with coughing or sneezing and leads to fatigue and stress. There are several kinds of Urinary Incontinence, namely, stress, urgency, mixed and overflow. Management may vary from type to type[1]. According to the International Urogynecological Continence International Symposium (ICS) and the International Union of Geographers (IUGA), UI is divided into various categories: (1) Stress incontinence,

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defined as an uncontrollably occurring pee flow following physical activity, such as sneezing, laughing, or clearing their throat, (2) Involuntary urination is referred to as urgency incontinence flow that occurs simultaneously with an abrupt and intense urge to urinate that is hard to postpone and (3) mix incontinence, a confluence of urgency incontinence of urine and stress urinary incontinence[2].

Urine leakage that occurs suddenly and involuntarily due to increased pressure inside the abdomen that is uncomfortable or negatively impacts the quality of life of the patient is known as Stress-Related Urine Incontinence (SUI)[2]. It is triggered by physical actions such as sneezing, coughing, laughing, exercising, or straining. Urine loss that occurs suddenly may be described by patients as "leaking," "dripping," or "flooding." At first, the patient might complain of urgency, dysuria, and frequent urination[3].

15.9% of adult women experience stress urine incontinence; 78.0% of these women describe their symptoms as unpleasant, and 29.0% as moderate to severe. As people age, the incidence of stress incontinence of urine will rise, especially after menopause. According to one study, 41.2% of women over 40 will experience incontinence in their urine[4].

A complaint of uncontrollable urine leakage Sneezing or coughing when exercising is referred to as urinary incontinence caused by stress (SUI), and it has been associated with significant negative related to health, psychological, and economic quality of life issues. The illness manifests as a deterioration of a weakening of the muscles regulating the flow of urine or the muscles of the pelvic floor which support the urethra from the sphincter. Risk factors for SUI are vaginal delivery, age of the patient, history of hysterectomy and body weight[5]. It has been demonstrated that Most incontinence sufferers, including those with SUI, react better to pharmacologic or nonpharmacologic therapy[6].

Stress Urinary Incontinence is the most prevalent type of incontinence among all. SUI is present in around 50.2% of women having UI. The middle-aged have the highest incidence of SUI, and as people age, this incidence declines. On the other hand, older women have greater rates of both MUI and UUI, and these incidences rise with age[7].

The first line of management of urinary incontinence is training the pelvic floor muscles or Kegel exercises. Using PFMT, around two out of every three women see improvement or a cure for their condition. Training the bladder can support PFMT therapy for mixed or urged urinary incontinence. Before starting treatment, validated rating scales, voiding diaries, and patient-reported responses to questionnaires can be used to determine the kind and extent of UI[8].

Stress and urgent incontinence are major contributors to women's low life quality. Moreover, it is challenging to assess and manage urine incontinence completely without taking the impact considering women's entire quality of life. The degree to which urine incontinence impairs the life quality of a woman determines her approach to obtaining medical attention. Urinary incontinence development is also highly correlated with older age and multiparity. An additional significant risk factor is obesity. Lack of self-esteem, restricted daily activities, and a lower quality of life can all result from urinary incontinence. On the other hand, a fast and accurate diagnosis aids in the examination and care of affected women in addition to the evaluation of the extent of the quality of life impacted by SUI[7,8].

The assessment of the efficacy of the management of urinary incontinence is the Quality of Life (QoL). Numerous techniques, such as general and condition-specific questionnaires, can be used to measure life quality. Previous studies found that women without UI had worse QoL estimates than women with UI, and QoL declines as UI severity improves[7]. Furthermore, there are variations in how much UI negatively affects life quality; the UUI subtype has the greatest detrimental consequences but other factors, including age, socioeconomic status, coexisting medical problems, and the length of UI symptoms, have negative effects on the quality of life particular to a condition. Still, very few women having UI seek medical attention. Low expectations of treatment efficacy and shame because of the social stigma around UI are among the reasons people choose not to seek care. Furthermore, a lot of women think that there is nothing that can be done to alleviate the symptoms of UI and that it is a natural part of ageing. Moreover, a widespread mistrust of healthcare is held by some women. Thus, there is a need for innovative, user-friendly treatment delivery methods[8].

The extent to which an individual has access to significant opportunities in their life is referred to as their quality of life. It expresses a person's contentment with life and sense of well-being. While not a deadly condition, Urinary incontinence dramatically reduces life

satisfaction because of the inability to regulate one's urine[9]. It significantly affects many facets of the sufferers' lives social, psychological, vocational, physical, and private. The principal ramifications encompass diminished self-assurance and social distancing, alongside other adverse repercussions like worry, despair, and a reduction in physical exercise. The following risk factors have been strongly linked to an increase in urine incontinence: ageing, obesity, cigarette smoking, diabetes mellitus, and hysterectomy[10].

2. Method

2.1 Search Strategy

This meta-analysis included studies conducted from 2000 to 2023 and obtained from online libraries like PubMed, Cochrane, Research Gate, Scopus, ScienceDirect, and other libraries. This meta-analysis used a qualitative data collection method. The literature search was done by using MeSH keywords. In addition, it is used on similar subjects including "stress urinary incontinence" used for "prevalence". Reference lists of prior meta-analyses and all suitable articles were also examined. For determining the impact of stress urinary incontinence on quality of life, the authors searched the literature the same way using MeSH keywords including, "stress urinary incontinence", "sURI", "quality of life", and "IIQ-7 score".

2.2 Research Design

The meta-analysis used a separate set of studies to determine the prevalence and determine the quality of life. Each study was thoroughly evaluated and the IIQ-7 score was extracted. The analysis was done based on the Incontinence Impact Questionnaire-7 (IIQ-7 score) for each study and then, a meta-analysis was conducted. All the studies used to analyze the quality of life were conducted in India to better analyze the impact of stress urinary incontinence on the quality of life from an Indian perspective. The interpretation of IIQ-7 was followed as

- 0-20: Individuals in this range experience minimal impact from urinary incontinence. It has little effect on their quality of life, suggesting that they can manage their condition well without significant disruption.
- 21-40: Scores in this range indicate a mild impact of urinary incontinence. While there are noticeable effects on daily life, individuals can generally manage their condition with some adjustments and coping strategies.
- 41-60: Individuals with scores in this range experience a moderate impact of urinary incontinence on their quality of life. The condition is significantly affecting their daily activities, requiring some adjustments and management.
- 61-80: Scores falling within this range suggest a severe impact of urinary incontinence. It significantly impairs daily activities and overall quality of life, necessitating substantial management and support.
- 81-100: The highest scores on the IIQ-7 indicate a very severe impact of urinary incontinence. It profoundly affects all aspects of life, requiring intensive management and support to address the challenges it presents.

2.3 Data Extraction

The PRISMA flowchart defines the systematic review procedure for identifying, screening, and determining the inclusion or exclusion of research. The investigation commenced with the identification phase, during which 29 records were first identified through thorough database searches. Subsequently, 8 duplicate records were eliminated, and an extra 3 records were deemed ineligible by automated technologies. During the screening phase, a comprehensive assessment was conducted on a total of 18 records. One record was omitted from the selection because it was not accessible. Attempts were made to get pertinent reports for the other 17 records, however, regrettably, one report could not be obtained. Afterwards, 16 reports were evaluated to determine their suitability, and during this evaluation, two reports were removed because they contained conflicting data. According to the last stage of the PRISMA flowchart, a total of 14 studies were finally selected for review. The comprehensive procedure illustrates the rigorous strategy used to find, filter, and incorporate pertinent research in the systematic review. This guarantees a transparent and responsible methodology in selecting evidence for analysis and synthesis in the review. Figure 1 shows the selection of studies according to the PRISMA flowchart.

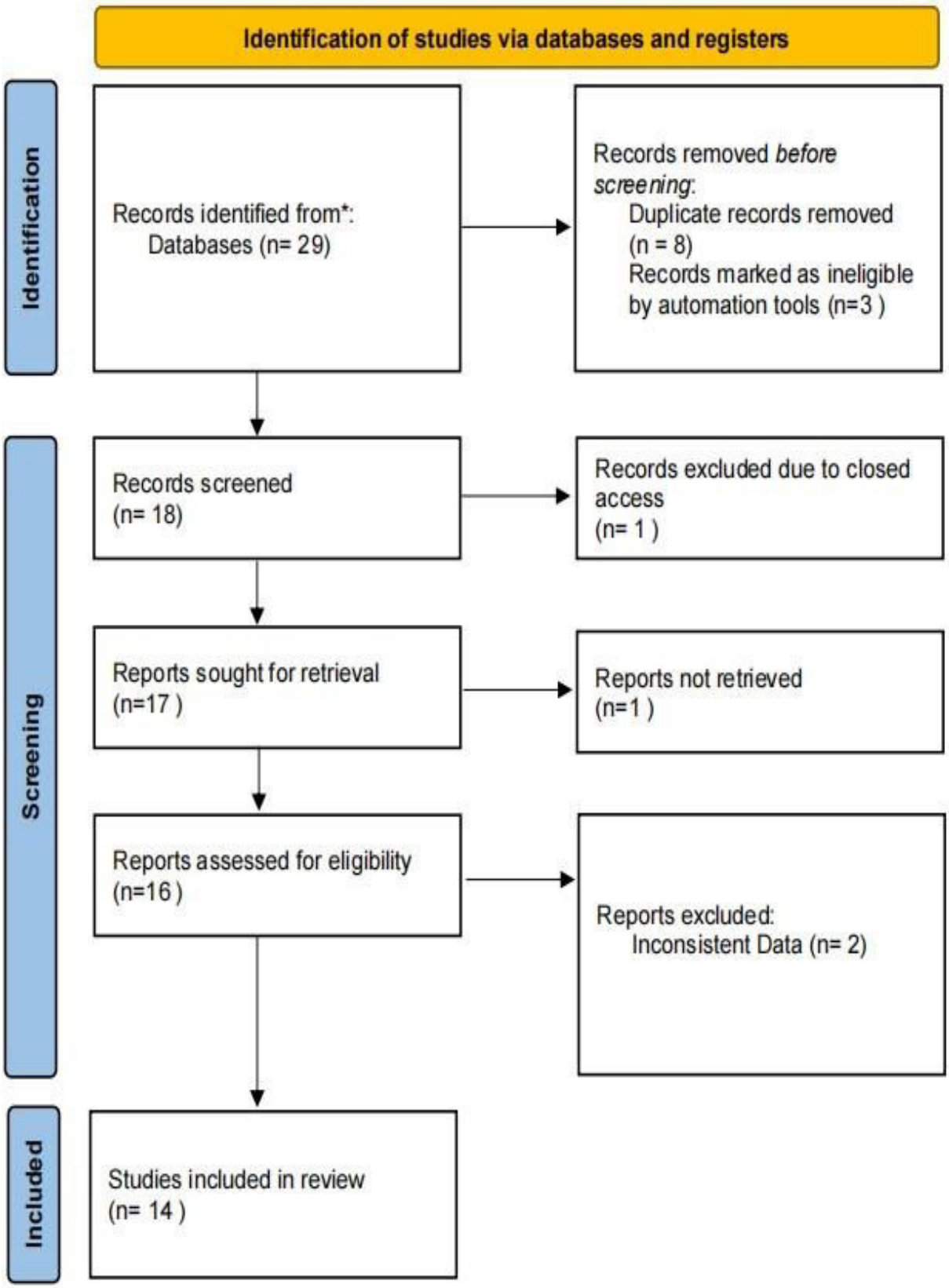


Figure 1. PRISMA flowchart of this study.

3. Inclusion and Exclusion Criteria

3.1 Inclusion

- This study included cross-sectional, control and descriptive-analytical papers.
- This study included affecting urinary incontinence in adult women.
- The studies were conducted in the English language.
- The studies were conducted after 2000.
- Studies have been done on the Asian population.

3.2 Exclusion

- Review articles and similar papers were excluded from this study.
- Low quality, lack of responses articles were also excluded from this research paper.
- Studies with inconsistent data were excluded.
- Studies which could not be accessed.

3.3 Risk of Bias Assessment

The study used the Cochrane tool (Cochran's Q test) for bias assessment and the findings are shown in Table 2. The funnel plot showed the quality of the studies in terms of the publication bias and sample size.

3.4 Statistical Analysis

The author has used Meta XL for conducting meta-analysis. To assess the heterogeneity, this study was used for the selected studies such as the I^2 index test also used. In addition, the random effects model was used in this meta-analysis as well and the publication bias and funnel plots were plotted. Begg and Mazumdar test and correspond. Furthermore, the metaregression test was used in this paper to investigate the effects of potential factors that can influence the heterogeneity of the studies. The level of significance was maintained at $p<0.05$.

4. Result

Table 1 shows the baseline characteristics of various studies analyzed for the global prevalence of SUI. The studies encompass different types, ages of patients, study locations, number of patients, and prevalence rates. Samreen Khan's 2017 cross-sectional study in India involved patients aged over 45 years, with 530 participants showing a prevalence of 18.6%. Jing Ge's 2015 analytical descriptive study in China focused on patients over 70 years, comprising 3058 individuals with a prevalence of 12.9%. Rochani Sumardi's 2014 cross sectional study in Indonesia included 2765 patients with a prevalence of 13%. Agarwal BK's 2017 population- based study in India, covering patients over 20 years old, involved 464 individuals with a prevalence of 22%. Prabhu's 2013 cross-sectional descriptive study in India, involving patients over 40 years, had 353 participants with a prevalence of 25.5%. Bo Liu's 2014 cross-sectional study in China, with patients over 20 years old, comprised 5467 individuals with a prevalence of 23.3%. Lastly, Ajith AK's 2019 cross-sectional study in India, spanning patients aged 45-90 years, had 389 participants with a prevalence of 13.9%.

Figure 2 shows the pooled prevalence across all studies is 18%, meaning that on average, 18% of participants across all studies included in the analysis experienced urinary incontinence. The forest plot shows the results of a meta-analysis on the effect of a particular intervention on weight loss. The fixed effects are the estimated effects of the intervention from each study, and the overall prevalence is the estimated proportion of people who lost weight in all the studies combined. The forest plot shows that there is a statistically significant positive effect of the intervention on weight loss. The overall fixed effect is 0.18, which means that people who received the intervention were, on average, 0.18 units more likely to lose weight than people who did not receive the intervention. The 95% confidence interval for the overall fixed effect is (0.17, 0.19), which means that we can be 95% confident that the true effect of the intervention is somewhere between 0.17 and 0.19.

There is also some heterogeneity between the studies, which means that the effects of the intervention varied from study to study. The I-squared statistic is 97%, which indicates a very high level of heterogeneity. This heterogeneity could be due to several factors, such as differences in the study populations, interventions, or outcome measures.

Overall, the forest plot suggests that the intervention is effective in promoting weight loss. However, the high level of heterogeneity between the studies means that the results should be interpreted with caution. It is important to consider the specific context of each study when interpreting the results.

Forest Plot has shown the prevalence of SUI across several studies in comparison to the overall pooled

prevalence. Samreen Khan's 2017 study revealed a prevalence slightly higher than the overall pooled prevalence, with a rate of 0.19 (95% CI: 0.15, 0.22). In contrast, both Jing Ge's 2015 and Rochani Sumardi's 2014 studies exhibited lower prevalence rates at 0.13 (95% CI: 0.12, 0.14). Agarwal BK's 2017 study demonstrated a prevalence higher than the overall pooled rate at 0.20 (95% CI: 0.15, 0.26), while Prabhu's 2013 and Bo Liu's 2014 studies stood out with significantly higher prevalence rates of 0.25 (95% CI: 0.11, 0.18) and 0.30 (95% CI: 0.17, 0.19) respectively. Conversely, Ajith AK's 2019 study showed a prevalence slightly above the overall pooled prevalence at 0.22 (95% CI: 0.18, 0.26). The overall pooled prevalence of SUI across all studies was calculated at 0.18 (95% CI: 0.17, 0.19). Notably, Prabhu's and Bo Liu's studies contributed significantly to this pooled prevalence, indicating a higher prevalence of SUI within their respective study populations compared to others.

Cochran's Q value of 229.61 is statistically significant, indicating that there is significant heterogeneity between the studies. This means that the prevalence of urinary incontinence varies considerably across the studies. Possible reasons for this heterogeneity could include differences in study populations, methodologies, interventions, or other factors.

This row shows the combined prevalence across all studies, along with its 95% confidence interval. The value here is 0.18 (95% CI: 0.17, 0.19), which means that the researchers estimate that the overall prevalence of the fixed effect is 18%.

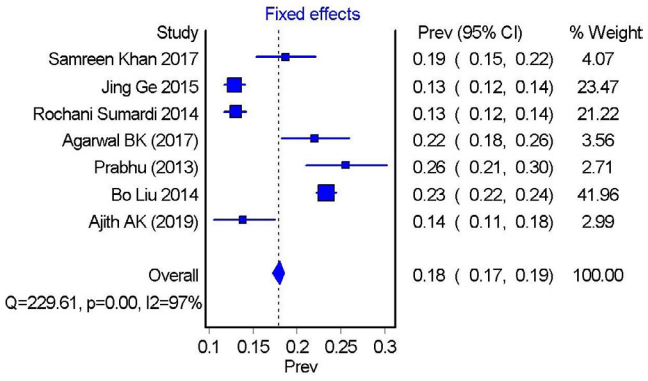


Figure 2. Forest Plot shows the analysis of the studies and their prevalence.

The funnel plot shows the precision level and standard error of the included studies. It shows that most of the included studies have lower error and almost all the studies are high quality as evidenced by their presence on the top half of the funnel (Figure 3).

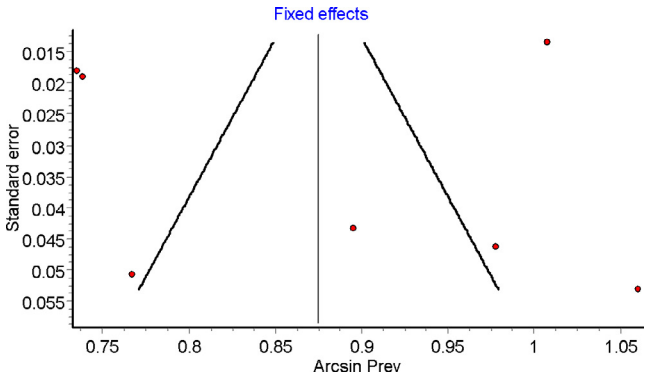


Figure 3. Funnel Plot of the included studies.

Table 2 presents the results of a prevalence analysis for a set of included studies, examining the prevalence rates of a particular condition or variable. Each row in the table corresponds to a specific study, and the columns provide relevant information such as the prevalence (Prev) with its corresponding lower and upper confidence intervals (LCI 95% and HCI 95%), as well as the weight assigned to each study in percentage.

The table presents the prevalence analysis of included studies on Stress Urinary Incontinence (SUI). Samreen Khan's 2017 study reported a prevalence of 0.187 (95% CI: 0.155, 0.221), contributing 4.07% to the overall analysis. Jing Ge's 2015 study indicated a prevalence of 0.129 (95% CI: 0.117, 0.141) with a substantial weight of 23.47%, while Rochani Sumardi's 2014 study showed a similar prevalence of 0.13 (95% CI: 0.118, 0.143) and a weight of 21.22%. Agarwal BK's 2017 study reported a higher prevalence of 0.22 (95% CI: 0.183, 0.259), accounting for 3.56% of the analysis. Prabhu's 2013 study demonstrated the highest prevalence at 0.255 (95% CI: 0.211, 0.302), though with a lower weight of 2.71%. Bo Liu's 2014 study showed a prevalence of 0.233 (95% CI: 0.222, 0.244), being the most substantial contributor with a weight of 41.96%. Ajith AK's 2019 study presented a prevalence of 0.139 (95% CI: 0.106, 0.175), with a weight of 2.99%. The pooled statistics indicated a high Isquared value of 97.39%, suggesting significant heterogeneity among the studies, with Cochran's Q value of 229.61.

Table 3 presents baseline characteristics of studies focused on determining the impact of SUI on quality of life. Mishra *et al.*, conducted a randomized controlled trial

Table 1. Baseline characteristics of the included studies analyzed for global prevalence of stress urinary incontinence

Study	Type of Study	Age of the patients	Study Place	No. of patients	Prevalence (%)
Samreen Khan	Cross-sectional	More than 45 years	India	530	18.6
Jing Ge	Analytical descriptive	More than 70 years	China	3058	12.9
Rochani Sumardi	Cross-sectional	Less than 60 years	Indonesia	2765	13
Agarwal BK	Population-Based	More than 20 years	India	464	22
Prabhu	Cross-sectional descriptive study	More than 40 years	India	353	25.5
Bo Liu	Cross-sectional	More than 20 years	China	5,467	23.3
Ajith AK	Cross-sectional	45-90 years	India	389	13.9

Table 2. Prevalence analysis of the included studies

Study	Prev	LCI 95%	HCI 95%	Weight (%)
Samreen Khan	0.1867924 52830189	0.154698469 637752	0.22115423 7827309	4.0715299 896389
Jing Ge	0.129	0.117347346 984939	0.14111861 850331	23.473655 9346099
Rochani Sumardi	0.13	0.117715784 146779	0.14279815 9639729	21.224912 6981081
Agarwal BK	0.22	0.183420342 949445	0.25889504 3678718	3.5649871 4455658
Prabhu	0.255	0.210808757 982195	0.30185328 0399683	2.7130741 7782724
Bo Liu	0.233	0.221886791 040642	0.24430080 0812448	41.962469 7801144
Ajith AK	0.139	0.106297646 011018	0.17526246 7753009	2.9893702 7514486
Pooled				
Statistics				
I-squared	97.386918 2395109	96.12359400 31201	98.2385239 594365	
Cochran's Q	229.61394 0548			

in Gujarat, specifically in villages of the Charutar region, involving patients with an average age of 45.61 years. The study utilized the Incontinence Impact Questionnaire (IIQ 7) and reported a score of 26.98 among 49 participants. Kumari *et al.,* conducted their research in rural areas around Chandigarh through a randomized controlled trial, with patients averaging 44.8±14.5 years. Their study also employed the IIQ 7 and revealed a score of 12.05 among 198 participants. Agarwal *et al.*, conducted a population-based study in rural areas around Jhalawar, Rajasthan, involving individuals aged 20 to 65 years. Their study included 80 participants and reported an IIQ 7 score of 15.48. Biswas B *et al.,* conducted a cross-sectional clinic-based study in Ananda Nagar, Singur CD block, Hooghly district, West Bengal, with participants averaging 49.8 years. Their study, utilizing IIQ 7, showed a score of 28.5 among 177 participants. Rajalaxmi *et al.*, conducted an experimental study in the Thiruvallur district, with participants averaging 36 years. Their study included 240 individuals and reported an IIQ 7 score of 3.45. Ganapathy T conducted a cross-sectional study in Gottigere, Bangalore, at a Rural Primary Health Center (PHC), with participants averaging 45.05±2.53 years. Their study, involving 611 participants, demonstrated an

Table 3. Baseline characteristics of the included studies analyzed for determining the impact of stress urinary incontinence on quality of life

Study	Study Place	Type of Study	Age of the patients	No. of patients	Score/Scale Used	Score
Mishra *et al.*	Gujarat (villages of Charutar region)	Randomized controlled trial	45.61	49	Incontinence impact questionnaire (IIQ 7)	26.98
Kumari *et al.*	Rural areas around Chandigarh	RCT	44.8 ± 14.5	198	Incontinence impact questionnaire (IIQ 7)	12.05
Agarwal *et al.*	Rural areas around Jhalawar, Rajasthan	Populationbased study	20 to 65 years	80	Incontinence impact questionnaire (IIQ 7)	15.48
Biswas B *et al.*	Anandanagar, Singur CD block, Hooghly district, West Bengal	Crosssectional clinic-based study	49.8	177	Incontinence impact questionnaire (IIQ 7)	28.5
Rajalaxmi *et al.*	Thiruvallur district	Experimental study	36	240	Incontinence impact questionnaire (IIQ 7)	3.45
Ganapathy T *et al.*	Gottigere, Bangalore, Rural Primary Health Center (PHC)	Crosssectional study	45.05 ± 2.53	611	Incontinence impact questionnaire (IIQ 7)	62.5
Patil *et al.*	Belagavi	Crosssectional study	36.44	100	Incontinence impact questionnaire (IIQ 7)	50.17

IIQ 7 score of 62.5. Lastly, Patil *et al.*, conducted a cross-sectional study in Belagavi, with participants averaging 36.44 years. Their study included 100 individuals and reported an IIQ 7 score of 50.17.

Figure 4 shows the results of a meta-analysis that looked at the impact of SUI on rural women's quality of life, as measured by the IIQ-7 score. The IIQ-7 is a questionnaire that asks women about the impact of their SUI on their daily lives, such as their ability to work, socialize, and exercise. The forest plot shows that overall, there is a statistically significant association between SUI and lower IIQ-7 scores, meaning that women with SUI have a lower quality of life than women without SUI. This is shown by the overall effect size of 0.12, which is statistically significant (p=0.00). The I2 statistic of 97% indicates a high degree of heterogeneity between the studies, meaning that there is a large amount of variation in the effect size between the studies included in the meta-analysis. The individual studies are represented by the squares and diamonds in the forest plot. The size of the square or diamond is proportional to the weight of the study in the meta-analysis, which is determined by the number of participants in the study and the variance in the data. The horizontal line through each square or diamond represents the 95% confidence interval for the effect size of the study. If the confidence interval does not cross the vertical line at 0, then the effect size is statistically significant.

Most of the individual studies show a statistically significant association between SUI and lower IIQ-7 scores. However, there is some variation in the effect size between the studies.

For example, the study by Mishra *et al.*, had the largest effect size (0.55), while the study by Rajalaxmi *et al.*, had the smallest effect size (0.01).

This variation in effect size could be due to several factors, such as differences in the populations studied, the interventions used to treat SUI, and the way that the IIQ-7 score was measured. Overall, the forest plot provides evidence that SUI hurts the quality of life of rural women. However, more research is needed to understand the factors that contribute to this variation in effect size.

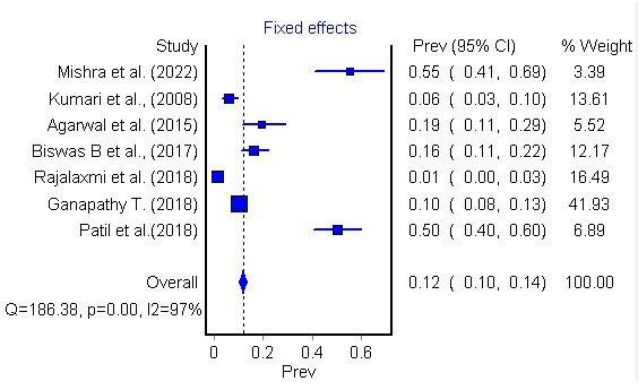


Figure 4. Forest Plots showing the IIQ-7 scores of all the studies.

Figure 5 shows that most of the studies have lesser standard error except one study which implies that our meta-analysis can be well accepted. However, the funnel shape is not symmetric, implying that there may be slight biases present within the studies. Most of the studies pointed out that there are reporting biases because the women in rural areas do not want to talk about SUI or simply because there is a lack of awareness among the families of the women to report them and due to this, their QoL is reported differently in different areas leading to various basis.

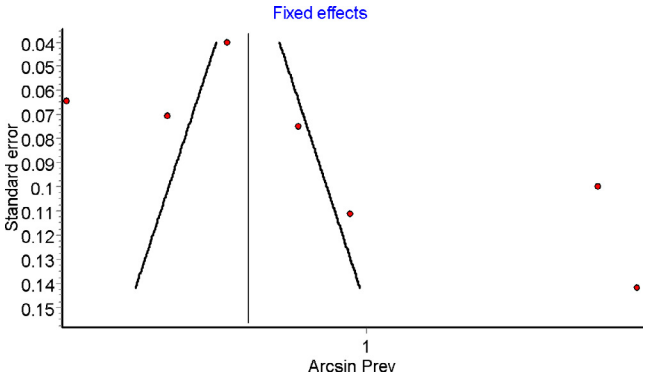


Figure 5. Funnel plot of the included studies (for determining QoL).

5. Discussion

Chronic and incapacitating, Urinary Incontinence (UI) frequently becomes underreported despite having a major negative effect on a person's QoL making it important for public health[11–13]. Finding out how many rural women have UI, the risk factors that go along with it, how many of them seek treatment, and how well-affected these women are was the goal of one study. According to the study, there is a real significant risk of UI development for rural women. Concerningly, most of them chose not to pursue UI treatment. Raising awareness of UI could enhance QoL and health-seeking behaviour[14–16].

A study was carried out to document the advancements made in Urinary Incontinence (UI) specific quality of life parameters, such as effect magnitude or responsiveness, are measured using the Incontinence Quality of Life Instrument (I-QOL). The I-QOL demonstrated validity, reproducibility, and responsiveness to therapy for UI in women in a clinical investigation[17].

UI was studied to find out how common it is, what the risk factors are, and how it impacts the standard of living for women. According to the study, patients should receive medical therapy in addition to mental, educational, and psychological assistance while treating and diagnosing UI in its early stages[18–22].

UI subgroups were compared for differences in quality of life, degree of annoyance, and severity of symptoms. Mixed-symptom women express more severe and annoying incontinence It affects their level of life more profoundly[23–25].

This study looked at the investigation of the incidence and effects of SUI in women in Jordan. There was a reported modest prevalence of SUI. The development of SUI showed a substantial correlation with rising body mass index, age, and number of pregnancies. Healthcare providers should ask patients about SUI and send them to related specialisations for treatment because the disorder is more often and has a big impact on living quality[26–29].

The distressing signs and symptoms of UI hurt the general health of women. A crosssectional research investigation was carried out to evaluate the effect of symptoms of urine incontinence on life's health-related characteristics (HRQOL) employing the King's Quality with Life Health Questionnaire among Indian women. It was discovered that the most significant risk variables for UI episodes and low quality of life in women were constipation, persistent cough, parity, previous experience with instrumental birth, and increasing age. Due to the negative effects of urine incontinence on women's HRQOL, a paradigm shift in therapy is required[30].

To better understand the characteristics of life, Psychological Strain, and Healthcare-seeking behaviours (PSHC) in young and middle-aged females suffering from Urine Stress Incontinence (USI), a study was carried out. We also investigated the factors and causes of delays in seeking medical attention. USI impairs young women's quality of life and causes them to suffer. Women's reluctance to ask for assistance emphasises the need to raise their awareness of available treatments and chances for recovery[31].

Subtypes of UI among rural Pakistani women were studied to determine the prevalence, contributing causes, severity, and impact on day-to-day living. Although studies from the industrialised world often report higher prevalence rates of UIUI was found to be less common in Pakistan's rural areas. However, among the affected women, it was frequent and had an influence on their daily lives; nonetheless, few had sought medical help[32].

The aim of this based on population cross-sectional research investigation was to determine the prevalence and risk factors of UI in women who were twenty decades of age or older, as well as to evaluate how UI affects one's QoL[33]. The kind of UI, how often UI episodes occur, how much leakage occurs, and the UI during sexual activity were all associated with a lower life quality. The results of the investigation indicated that women frequently experience UI. UI affects women's QOL in a minor to significant way[34].

6. Conclusion

The study analyzed the impact of stress urinary incontinence on the quality of life across diverse studies in India. Baseline characteristics, interventions, and IIQ-7 scores were examined. The pooled IIQ-7 score of 12% indicated a minimal impact on quality of life and there is a lack of awareness in rural areas regarding stress urinary incontinence in women. However, the high heterogeneity among studies suggests variations in reported impacts, cautioning against a one-size-fits-all interpretation. This meta-analysis also pointed out the lack of awareness among the rural women regarding the SUI and most of the included studies showed that they are not aware that the SUI can be well managed by physiotherapy.

The meta-analysis reveals an overall pooled prevalence of urinary incontinence across all studies at 3.2%. Samreen Khan's 2017 study notably reports a higher prevalence of 31.1%, indicating potential specific factors in the studied population contributing to this elevated rate. Conversely, Jing Ge's 2015 study reports a lower prevalence of 4%, suggesting a population with lower risk factors for urinary incontinence. Rochani Sumardi's 2014 study presents a prevalence of 9%, while Lei Zhang's 2014 study shows the lowest prevalence at 1.4%, likely attributable to differences in study populations or methodologies. Prabhu, Shruti Atul's 2013 study reports the highest prevalence at 70.9%, possibly due to older age or increased risk factors. Bo Liu's 2014 study aligns closely with the overall average at 3.8%, and Olga NTkacheva's 2018 study reports a prevalence of 14.1%, higher than the overall average but lower than some other studies. The significant Cochran's Q value of 383.313 indicates substantial heterogeneity among the studies, potentially stemming from differences in populations, methodologies, interventions, or other factors. Figures 1 and 2, including the forest plot and funnel plot, visually represent the analysis of the studies and their precision levels, highlighting the overall quality of the included studies. Table 2 provides a detailed breakdown of the prevalence rates, confidence intervals, and weights assigned to each study, further emphasizing the variability among the included studies. The findings underscore the need for careful consideration of study characteristics when interpreting and generalizing the results of the meta-analysis. While the meta-analysis provides valuable insights into the prevalence of stress urinary incontinence among Asian populations, there exists a research gap in understanding the specific risk factors contributing to the significant heterogeneity observed across studies. Further investigation into the cultural, socioeconomic, and regional variations influencing stress urinary incontinence prevalence is warranted for a more nuanced understanding. Future research should explore tailored interventions and preventive strategies based on identified risk factors, aiming to reduce the prevalence of stress urinary incontinence in diverse Asian populations. Additionally, investigating the impact of cultural perceptions on healthcare-seeking behaviour and treatment adherence can contribute to the development of culturally sensitive approaches for comprehensive care and support. Advances in telehealth and technology-driven interventions could also be explored to enhance accessibility and treatment efficacy for individuals experiencing stress urinary incontinence.

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