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The Impact of Postpartum Urinary Incontinence on the Quality of Life, Stigma, and Postpartum Depression of Postpartum Women in Quanshan and Daqinjia Community Health Services Center

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Abstract: *Background:* This study aimed to investigate the prevalence of PPUI, factors influencing it, and its association with quality of life, stigma, and postpartum depression. PPUI is generally linked to a low quality of life and poor mental health, though related studies from China are limited. *Methods:* The study involved postpartum women within 6 months in two communities of Zhaoyuan City. A quantitative, descriptive design was used, assessing PPUI, quality of life, stigma, and postpartum depression using the ICIQ-SF, I-QOL, SIS, and EPDS scales. Data collection included personal and postpartum life information. *Results:* The prevalence of PPUI was 31.37%. Women with PPUI had significantly lower quality of life and higher stigma compared to those without PPUI, with severity linked to worse outcomes ($P < 0.001$). While the impact on postpartum depression was not statistically significant ($P = 0.59$), moderate PPUI was associated with higher depression scores ($P = 0.003$). Multivariate analysis showed that PPUI severity significantly affected quality of life, stigma, and postpartum depression (Wilk's Lambda = 0.494, $P < 0.001$). Women with moderate incontinence reported the worst quality of life, highest stigma, and more severe depression symptoms. *Conclusion:* Postpartum urinary incontinence significantly impacts quality of life and stigma, with moderate symptoms linked to increased postpartum depression. Early intervention and support from family and community are crucial for recovery. Strengthening pelvic floor training, raising public awareness, and reducing stigma are recommended. Further studies should explore the relationship between PPUI and postpartum depression and develop interventions to improve quality of life.

Keywords: Postpartum urinary incontinence (PPUI); Quality of life; Stigma; Postpartum depression; Maternal health

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1. Introduction

Historically, childbearing and childrearing were viewed as inherent social duties for women, with little regard for

the physical and psychological toll these responsibilities entail. As women's rights and health awareness grew, more began voicing the challenges of pregnancy and postpartum periods, shedding light on issues like postpartum urinary incontinence (PPUI). While societal recognition of PPUI's impact has increased, its effects on postpartum women's overall quality of life, especially psychologically and socially, remain understudied, particularly within the Chinese cultural context.

The International Continence Society (ICS) defines urinary incontinence (UI) as involuntary urine leakage, including stress (SUI), urge (UUI), and mixed (MUI) types, with SUI being most common [1]. The World Health Organization (WHO) specifies PPUI as pregnancy/childbirth-related involuntary urine loss in the postpartum period, causing physical, psychological, and emotional harm that disrupts women's daily lives. PPUI can manifest as any UI type, not limited to specific categories.

Existing PPUI research primarily focuses on physical symptoms and treatments, neglecting its psychological, emotional, and social impacts. A key gap exists in understanding how PPUI affects quality of life and its interplay with social stigma and postpartum depression. Globally, pregnancy-related UI prevalence ranges from 11.4% to 84.5%, linked to prior UI history, instrumental delivery, and alcohol use, while China reports a 36.4% rate [2–3]. Pelvic floor therapy is an effective first-line treatment for alleviating symptoms and improving well-being [4]. However, some studies only focus on prevalence and medical interventions, ignoring psychological and social consequences [5–6]. Though Hermansen's study touched on PPUI's impact on physical and emotional well-being, their analysis lacked cultural nuance [7]. Swenson et al. acknowledged a correlation between PPUI and postpartum depression but called for deeper exploration of mechanisms and cultural influences [8].

PPUI imposes significant mental distress and social stigma, discouraging women from seeking care. Societal and self-stigma lead to social withdrawal and worsened mental health, with embarrassment often delaying treatment [9–10]. Research shows women with UI experience anxiety, isolation, and hopelessness, and many avoid professional help due to shame [11–12]. Community values and self-stigma further drive symptom concealment, hindering self-assessment and care-seeking [13].

Studies link PPUI to postpartum depression, Research has noted a 30% higher PPUI risk in depressed women [8]. Suar et al. found women with postnatal UI had higher Edinburgh Postnatal Depression Scale scores, highlighting PPUI's dual psychological and social harm [14]. In China, cultural beliefs like "women are weak, but mothers are strong" pressure women to downplay issues like UI, while family focus shifts to the newborn after childbirth can exacerbate psychological strain. Hormonal changes and physical vulnerability during this period compound the impact on quality of life.

This study addresses these gaps by investigating PPUI prevalence in China, its effects on physical, psychological, and social quality of life, and its relationship with stigma and postpartum depression. By emphasizing cultural influences, it aims to inform holistic healthcare interventions for postpartum women.

2. Methods

2.1. Research design

This study employed a quantitative descriptive correlational design to examine the impact of postpartum urinary incontinence (PPUI) on postpartum women by exploring relationships between PPUI severity, quality of life, stigma, and postpartum depression. As defined by Williamson, quantitative research involves empirical, formal, and objective analysis of numerical data, making it suitable for describing patterns and correlations in this context. The descriptive approach, as outlined by the Office of Human Research Protections (OHRP), allowed non-experimental observation

of participants' health status, behaviors, and attitudes in their natural setting, focusing on three primary outcomes: postpartum quality of life scores, stigma levels due to PPUI, and postpartum depression scores.

The design phase involved defining research objectives, selecting validated instruments, and implementing systematic sampling to ensure representativeness. The researcher acted as both designer and interpreter, overseeing study procedures from conceptualization, including identifying demographic and pregnancy-related variables for subgroup comparisons (age, education, parity, mode of delivery), to data interpretation. By using a correlational framework, the study aimed to describe how PPUI influences psychosocial outcomes without intervening in participants' environments, aligning with the descriptive design's focus on naturalistic observation. This approach facilitated understanding of PPUI's multifaceted impact and informed recommendations for clinical practice and policy, enhancing awareness of postpartum health concerns.

2.2. Research participants

The study population comprised postpartum women from two community health service centers in Zhaoyuan City, Shandong Province: Quanshan Street Community Service Center and Daqinjia Health Center. Eligibility criteria included women aged 20–35 who had delivered vaginally or via cesarean section within six months of the study start, attended regular prenatal check-ups, and provided informed consent. Exclusion criteria targeted confounding factors such as preexisting medical conditions, preterm/post-term deliveries, multiple pregnancies, or severe perinatal complications, ensuring a homogenous sample to minimize bias.

Systematic sampling was used to select participants from the medical records of eligible women. Using the Raosoft sample size calculator with a 5% margin of error and 95% confidence interval, the required sample size was determined as 153 participants (87 from Quanshan, 66 from Daqinjia). This probability-based method offered simplicity and reduced sampling error compared to simple random sampling. Community health staff assisted in compiling participant lists, and systematic intervals were applied to select records, ensuring representativeness across demographic and obstetric categories. Verbal consent was obtained via telephone, followed by formal consent through an online questionnaire's "Agree" button, ensuring participants understood study procedures, risks, and their rights to withdraw.

2.3. Data collection

Data collection occurred in 2024 over approximately one month, involving validated instruments and structured procedures. Five questionnaires were used:

General information questionnaire (GIQ): Developed by the researcher, collecting demographic (age, education, residence) and obstetric (parity, delivery mode, postpartum duration) data.

International continence counselling questionnaire Short Version (ICIQ-SF): Assessed PPUI severity via frequency/volume of leakage and quality of life impact, with proven reliability (Cronbach's $\alpha \geq 0.71$) in Chinese populations [15].

Incontinence quality of life questionnaire (I-QOL): Evaluated quality of life across behavioral, psychological, and social domains, translated into Chinese with $\alpha = 0.93$ [16–17].

Social influence scale (SIS): Measured stigma through social exclusion, economic discrimination, and internalized shame, adapted for Chinese UI patients with $\alpha = 0.883$ [18–19].

Edinburgh postnatal depression scale (EPDS): Screened for postpartum depression with 10 self-reported items, validated in mainland China ($\alpha = 0.79$) [20].

Data collection procedures included:

Ethical approval: Secured from the Far Eastern University ethics review board and the health centers.

Participant recruitment: Community staff identified eligible women via medical records, with researchers contacting them for consent.

Online data collection: Participants completed questionnaires via WeChat or text links in supervised online meetings, ensuring anonymity and self-completion. Cameras were used to verify participation, and responses were stored on password-protected systems to maintain confidentiality.

2.4. Statistical Analysis

Data were analyzed using JASP, with descriptive and inferential statistics employed to address research objectives.

Descriptive Statistics: Frequencies and percentages characterized demographic distributions and PPUI prevalence (Tables 1 and 2). Means and standard deviations summarized scores for ICIQ-SF, I-QOL, SIS, and EPDS, while medians described PPUI severity to mitigate skew (Tables 3 and 4).

Bivariate analysis: Chi-square tests examined associations between demographic/pregnancy variables and PPUI prevalence (Table 1). Brown-Forsythe test compared mean scores on quality of life, stigma, and depression between PPUI and non-PPUI groups (Table 4).

Multivariate analysis: Analysis of variance (ANOVA) assessed differences in outcomes across subgroups (e.g., age, parity), and multivariate analysis of variance (MANOVA) explored combined effects of PPUI severity on all three dependent variables (quality of life, stigma, depression), providing a comprehensive view of relationships (Table 5).

2.5. Ethical considerations

Ethical principles of respect, beneficence, and justice guided the study, prioritizing participant welfare and rights.

Informed consent: Participants received detailed verbal and written explanations (via questionnaire preambles) about study purposes, procedures, and risks, with the right to withdraw at any time without penalty.

Confidentiality: Data were anonymized, with questionnaires coded instead of named, and stored on encrypted, password-protected systems accessible only to the researcher. Identifiable data were deleted post-analysis, and backups were secured on separate servers.

Beneficence: Potential risks (e.g., psychological discomfort from discussing health issues) were minimized by providing access to counseling resources. Benefits included increased awareness of PPUI and improved social support through study participation.

Justice: Sampling was non-discriminatory, based solely on inclusion/exclusion criteria, ensuring equitable participation. Findings were disseminated to participants and community stakeholders via brochures, social media, and health center meetings, promoting practical applications and reducing stigma.

Transparency: Participants were informed of study progress and results, with an open dissemination plan including academic publications and community engagement to ensure accountability and public benefit.

Throughout the process, ethical review boards and health center partnerships ensured compliance with international standards, safeguarding participant autonomy and data integrity while advancing understanding of postpartum women's health needs.

3. Results

A total of 168 questionnaires were collected in this study, with 153 valid responses yielding an effective response rate of 91.1%. Based on the ICIQ-SF questionnaire (score ≥4 indicating urinary incontinence), 48 participants were diagnosed with postpartum urinary incontinence (PPUI), resulting in a prevalence rate of 31.37%.

The analysis of demographic characteristics showed that the majority of participants (56.9%) were aged 26–30 years, while the highest PPUI prevalence (41.3%) was observed in the 31–35 age group, though this age-related difference was not statistically significant (P=0.166) (**Table 1**). Participants were nearly evenly distributed between urban (55.6%) and rural (44.4%) areas, with comparable PPUI prevalence rates between these groups (urban: 30.6%; rural: 32.4%; P=0.815). Educational attainment was high among participants, with over 90% having college-level education or higher. While the highest PPUI prevalence (44.4%) occurred in the high school education group, differences across education levels were not statistically significant (P=0.295).

Clinical factors revealed significant associations with PPUI prevalence. Only 2.6% of participants reported three or more deliveries, but multiparity showed a strong correlation with PPUI (P<0.001). The cesarean section rate was 34% in this cohort, with vaginal delivery associated with significantly higher PPUI prevalence (39.6%) compared to cesarean delivery (15.4%; P=0.02). Neonatal birth weight analysis showed that 87.6% of infants fell within the normal weight range (2500–4000 g), while the macrosomia group (>4000 g) demonstrated the highest PPUI prevalence (71.4%; P=0.02).

Regarding postpartum duration, PPUI prevalence peaked in the first month postpartum (72.2%) and showed a significant decline over time (P<0.001), indicating a natural improvement pattern in UI symptoms during the postpartum recovery period.

Table 1. Demographic profile and PPUI prevalence of postpartum women (n = 153)

Profile	Frequency (%)	PPUI prevalence		
		Prevalence (%)	x^2	P
Age group			3.59	0.166
20–25	20(13.07)	4(20.00)		
26–30	87(56.86)	25(28.73)		
31–35	46(30.07)	19(41.30)		
Place of residence			0.055	0.815
Countryside	68(44.44)	22(32.35)		
Urban area	85(55.56)	26(30.59)		
Educational attainment			3.705	0.295
Postgraduate	12(7.84)	2(16.67)		
Undergraduate	55(35.95)	14(25.45)		
Technical college	77(50.33)	28(36.36)		
Senior high school	9(5.88)	4(44.44)		
Parity			20.823	<0.001
1 time	77(50.33)	13(16.88)		
2 times	72(47.06)	31(43.06)		
≥3times	4(2.61)	4(100)		

Table 1 (Continued)

Profile	Frequency (%)	PPUI prevalence		
		Prevalence (%)	x^2	P
Latest delivery method			9.352	0.02
Cesarean section	52(33.99)	8(15.38)		
Natural birth	101(66.01)	40(39.60)		
Birth weight of newborn			11.614	0.003
≤2500 g	5(3.27)	1(20.00)		
2500 g–4000 g	134(87.58)	37(27.61)		
≥4000 g	14(9.15)	10(71.43)		
Postnatal period			27.422	<0.001
Within 1 month	18(11.77)	13(72.22)		
1~2 months	29(18.95)	12(41.38)		
2~3 months	22(14.38)	9(40.91)		
3~4 months	22(14.38)	6(27.27)		
4~5 months	31(20.26)	6(19.35)		
5~6 months	31(20.26)	2(6.45)		

Table 2. Frequency distribution of severity level of urinary incontinence among postpartum women (*n* = 153)

Severity level	*n* = 153	%
No incontinence	71	46.41
Slight	63	41.18
Moderate	18	11.77
Severe	1	0.65
Very severe	0	0

Note: 0.00–0.99 = No incontinence, 1.00–5.99 = Slight, 6.00–12.99 = Moderate, 13.00–18.99=Severe, 19.00–21.00 = Very severe

Table 3 presents the scores for quality of life (I-QOL), social stigma (SIS), and postnatal depression (EPDS) among the study participants. The average I-QOL score was 86.02 (SD = 5.80, median = 87.50), indicating generally high quality of life ratings among postpartum women. The distribution of scores showed that most participants fell within the upper range of the quality of life scale.

The social stigma assessment yielded an average SIS score of 32.24 (SD = 4.70, median = 31.00), suggesting relatively low levels of perceived stigma among the study population. The score distribution revealed minimal variation across participants, with the majority clustering in the lower range of the stigma scale.

For postpartum depression symptoms, the average EPDS score was 4.69 (SD = 2.49, median = 4.00). According to standard EPDS interpretation guidelines, these scores predominantly fell below the threshold for clinically significant depressive symptoms. The data showed that most participants reported only mild depressive

symptoms during the postpartum period.

The results demonstrate consistent patterns across all three measures, with participants generally reporting favorable outcomes in quality of life, minimal social stigma, and mild depressive symptoms. The score distributions for each measure followed similar trends, with the majority of responses concentrated in the positive ranges of each scale.

Table 3. Descriptive statistics for I-QOL, SIS, and EPDS scores among postpartum women (n = 153)

Variable	M	SD	Median	Verbal interpretation
I-QOL score	86.02	5.80	87.50	High
SIS Score	32.24	4.70	31.00	Low
EPDS score	4.69	2.49	4.00	Low

Note: In I-QOL scale: Below 40 = Very low quality of life, with severe impact from incontinence; 40–59 = Low quality of life, with significant impact from incontinence on daily life, 60–79 = Moderate quality of life, with some noticeable impact from incontinence, 80–100 = High quality of life, with minimal impact from incontinence; In SIS scale: 24.00–47.00 = Low social impact, 47.01–71.00 = Moderate social impact, 71.01–96 = High social impact; In EPDS scale: 0–9 = Low likelihood of depression, 9.01–12 = Mild symptoms of depression, 12.01–19.00 = Moderate likelihood of depression, 19.01–30.00 = High likelihood of depression

Table 4 presents the comparative analysis of I-QOL, SIS, and EPDS scores between the PPUI group and the healthy control group. The results showed statistically significant differences between groups for quality of life and social stigma measures, while no significant difference was found for postpartum depression scores.

The quality of life assessment revealed significantly lower I-QOL scores in the PPUI group (M = 6.23, SD = 2.72) compared to the healthy group (M = 0.97, SD = 1.41), with a large effect size (t = 12.66, P < .001, Cohen's d = 2.43). This substantial difference indicates markedly reduced quality of life among women experiencing PPUI.

For social stigma, the PPUI group reported higher SIS scores (M = 34.79, SD = 6.48) than the healthy group (M = 31.08, SD = 3.00), demonstrating a statistically significant difference with a large effect size (t = 3.79, P < .001, Cohen's d = 1.75). These results suggest greater perceived stigma among women with PPUI.

The analysis of postpartum depression symptoms showed no statistically significant difference between groups (t = 0.54, P = 0.59, Cohen's d = 0.094). The PPUI group's mean EPDS score was 4.85 (SD = 2.67), while the healthy group's was 4.62 (SD = 2.42), indicating similar levels of depressive symptoms regardless of PPUI status. The minimal effect size suggests PPUI has a limited direct association with postpartum depression scores in this sample.

Table 4. Comparison of quality of life, stigma, and postpartum depression between postpartum women with and without urinary incontinence (n = 153)

Variable	With		Without		Welch t (df)	*P*	Cohen's *d*	Remark
	M	SD	M	SD				
I-QOL score	6.23	2.72	0.97	1.41	12.66 (58.91)	<.001	2.43	Reject H_0
SIS score	34.79	6.48	31.08	3.00	3.79 (56.41)	<.001	1.75	Reject H_0
EPDS score	4.85	2.67	4.62	2.42	0.54 (151)	0.59	0.094	Do not reject H_0

Note: Brown-Forsythe test is significant (P < .05), suggesting a violation of the equal variance assumption, hence, Welch t correction was used; P < .05, P < .01, P < .001

The multivariate analysis of variance (MANOVA) results (**Table 5**) demonstrated a significant association between postpartum urinary incontinence (PPUI) severity and quality of life, stigma, and postpartum depression (Wilk's Lambda = 0.494, F(6,294) = 20.74, $P < 0.001$).

For quality of life (I-QOL), **Figure 1** displays progressively lower scores with increasing UI severity: no UI group (M = 89.13, SD = 3.05), slight UI group (M = 85.43, SD = 4.45), and moderate UI group (M = 76.45, SD = 6.65). The between-group differences were statistically significant ($P < 0.001$), showing a clear inverse relationship between symptom severity and quality of life.

Regarding social stigma (SIS), **Figure 1** illustrates significantly higher scores with greater UI severity: no UI (M = 30.32, SD = 2.77), slight UI (M = 31.19, SD = 4.21), and moderate UI (M = 39.50, SD = 5.11). These between-group differences were statistically significant ($P < 0.001$).

For postpartum depression (EPDS), while no significant difference emerged between no UI and slight UI groups ($P = 0.084$), the moderate UI group showed significantly higher scores (M = 6.22, SD = 2.88) compared to other groups ($P = 0.003$). The EPDS results revealed more nuanced differences, with the most pronounced contrast appearing between the no UI and moderate UI groups.

The analysis consistently showed that women with moderate UI reported the poorest quality of life, highest stigma levels, and most severe depressive symptoms compared to no UI and slight UI groups. The I-QOL and SIS measures demonstrated significant differences across all severity levels, while EPDS differences were primarily evident between the no UI and moderate UI groups.

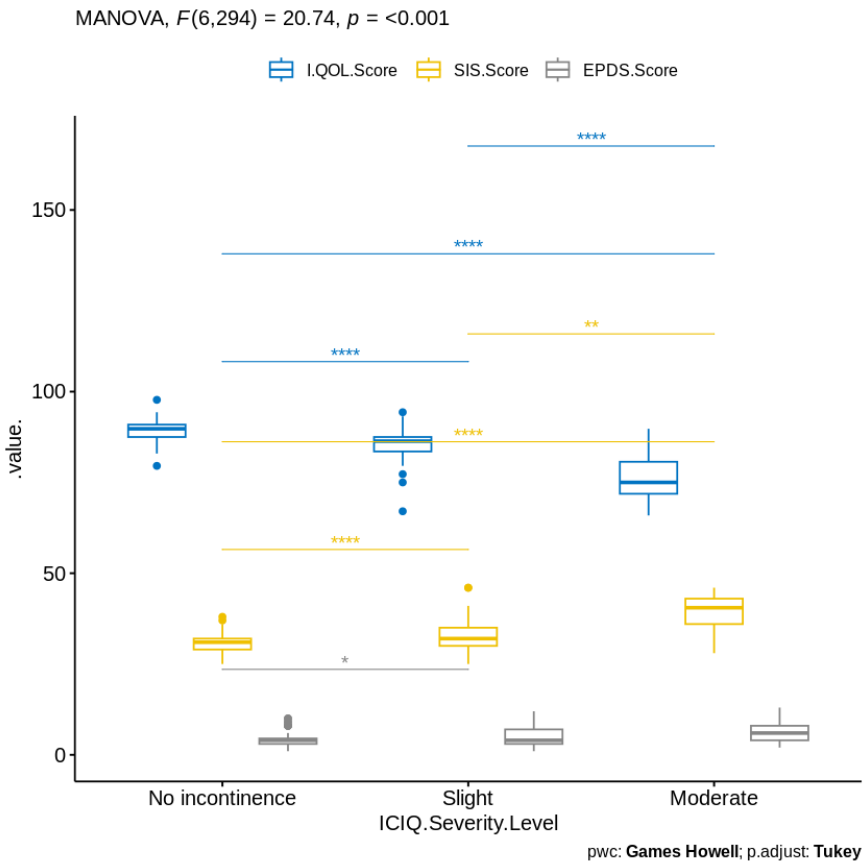

Figure 1. Comparison of quality of life, stigma, and depression scores across different postpartum urinary incontinence severity levels

Table 5. Multivariate analysis of variance of urinary incontinence predicting quality of life, stigma, and postpartum depression experienced by postpartum women (n = 153)

Variable	No UI (n = 71)		Slight UI (n = 63)		(3) Moderate UI (n = 18)		ANOVA		Tukey's HSD pairwise comparison		
	M	SD	M	SD	M	SD	P	P^r	1 vs. 2	1 vs. 3	2 vs. 3
I-QOL Score	89.13	3.05	85.43	4.45	76.45	6.65	<.001	<.001	<.001	<.001	<.001
SIS Score	30.32	2.77	31.19	4.21	39.50	5.11	<.001	<.001	.012	<.001	<.001
EPDS Score	4.07	2.04	4.97	2.66	6.22	2.88	.002	.006	.084	.003	0.131
MANOVA	Wilk's Lambda = 0.494, F(6,294) = 20.74, P < .001										

Note: P <0.05, P <0.01, P <.001. UI is urinary incontinence. ANOVA P is for one-way univariate ANOVA, ANOVA P^r is for one-way univariate Welch's ANOVA

4. Discussion

This study's findings collectively provide a comprehensive understanding of postpartum urinary incontinence (PPUI) and its impact on postpartum women's health and well-being.

Regarding the prevalence of PPUI, the results indicate that it is predominantly influenced by labor-related factors. Multiparity, vaginal delivery, a newborn weight exceeding 4000 grams, and earlier postpartum periods are associated with higher PPUI rates, consistent with previous research [22–23]. The cumulative damage to pelvic floor muscles during multiple pregnancies or births likely contributes to this increased risk. Moreover, the decline in PPUI prevalence and severity over time aligns with the notion of symptom remission during the recovery process, which may be attributed to the repair of pelvic floor tissues and the gradual restoration of muscle function [24]. In contrast, demographic factors such as age, residence, and education level did not show significant associations with PPUI. The high education level of the sample, which might imply greater health awareness, did not reduce the risk of PPUI, emphasizing that biological factors related to childbirth play a dominant role. These insights are crucial for developing targeted screening and intervention strategies, especially for women with multiple births, vaginal deliveries, or macrosomic infants.

In terms of the severity of PPUI, most postpartum women experience mild to moderate symptoms, in line with prior studies indicating that early-stage symptoms are often mild and may improve naturally [25]. Slight incontinence, typically resulting from short-term pelvic floor dysfunction, can often resolve through natural recovery or early interventions like rehabilitation exercises, highlighting the importance of accessible clinical interventions to facilitate pelvic floor recovery [26]. However, moderate incontinence, affecting 11.77% of the sample, poses significant risks to quality of life and mental health, consistent with research linking moderate and severe incontinence to stigma and postpartum depression [10–11]. Such cases require personalized care that integrates psychological support and medical interventions to mitigate the negative impacts on mental health. The low number of severe incontinence cases may be due to the relatively high health awareness of the study sample, as many participants had higher education, and better access to postpartum care, which may have reduced the risk of severe PPUI. Nevertheless, severe cases still demand long-term, comprehensive management, including professional rehabilitation or surgical treatment, to achieve substantial symptom improvement.

The assessment of quality of life (I-QOL), social stigma (SIS), and postpartum depression (EPDS) reveals complex relationships. Overall, most postpartum women reported a high quality of life (I-QOL), which aligns with

previous research [27]. However, this may mask underlying psychological distress, as some women might cope with symptoms through avoidance or social adaptation rather than seeking support. Social and familial support likely play a role in alleviating distress, emphasizing their importance in postpartum care. The low SIS scores suggest limited social stigma associated with PPUI, consistent with Jones, possibly due to increased societal understanding of postpartum health [28]. However, cultural factors may influence this result, as traditional norms that prioritize newborn care and privacy may lead women to underreport symptoms or manage them silently, potentially underestimating the true impact of stigma. The overall mild depressive symptoms indicated by the EPDS scores are consistent with other studies, but they highlight the need for targeted interventions for at-risk individuals, given that postpartum depression is influenced by multiple factors, including physical recovery, social support, and psychological state [29–30].

Comparing the PPUI group with the healthy group, significant differences were observed in I-QOL and SIS scores, but not in EPDS scores. The substantial decrease in I-QOL scores and increase in SIS scores among the PPUI group, as reported in previous research, highlight the negative impact of PPUI on daily life and the amplification of social stigma [31–32]. The large effect size for quality of life underscores the need for early clinical interventions, such as physical therapy and psychological support, to mitigate these effects. The elevated stigma scores suggest that societal attitudes and misconceptions about PPUI may exacerbate women's psychological burden, necessitating targeted health education to reduce stigma and encourage help-seeking. The lack of a significant association between PPUI and postpartum depression indicates that while PPUI affects well-being, other factors, such as social support, economic status, and pre-existing mental health, play a more significant role in postpartum depression [33]. This finding reflects the multifactorial nature of postpartum depression, where biological, psychosocial, and environmental factors interact.

This study has several limitations. The sample, sourced from Quanshan and Daqinjia community health centers, may lack generalizability to broader populations and regions, while financial and logistical constraints restricted sample size, potentially reducing result representativeness. The one-month data collection period also precluded long-term impact assessment. Additionally, relying on self-reported questionnaires introduced response bias, and the study did not account for confounding variables such as social support, income, cultural attitudes, and psychological factors, which may have influenced the associations between postpartum urinary incontinence (PPUI), quality of life, stigma, and postpartum depression. Future research should address these aspects.

In conclusion, this study provides valuable insights into PPUI, its associated factors, and its impact on postpartum women's physical and mental health. The findings emphasize the importance of targeted screening, early intervention, and personalized care, especially for women at higher risk or with moderate to severe symptoms. Future research should continue to explore the complex interplay between PPUI and various factors to develop more effective strategies for improving the health and well-being of postpartum women.

5. Conclusion

This study examined the prevalence of postpartum urinary incontinence (PPUI) among 153 postpartum women and its effects on quality of life, social stigma, and postpartum depression. The PPUI prevalence was 31.37%, with significant associations found for parity, delivery mode, neonatal birth weight, and postpartum duration—multiparity, vaginal delivery, macrosomic infants, and earlier postpartum periods increased PPUI risk. Quality of life, measured by I-QOL, was significantly lower in women with PPUI, particularly those with moderate severity,

indicating detrimental effects on daily functioning and self-esteem. Social stigma (assessed via SIS) correlated positively with PPUI severity, reflecting heightened shame and social burden in women with more severe symptoms. While overall postpartum depression scores (EPDS) showed no significant difference between PPUI and non-PPUI groups, moderate PPUI was linked to higher depressive symptoms, suggesting symptom severity may amplify psychological distress.

In summary, the study highlights PPUI as a multifactorial condition influenced by childbirth-related factors, with cascading impacts on postpartum well-being: it reduces quality of life, increases social stigma, and elevates depressive risk, particularly at moderate severity levels. These findings underscore the need for early clinical screening and integrated interventions addressing physical symptoms, psychosocial support, and stigma reduction for postpartum women, especially those with moderate PPUI. Limitations include sample regionality and unmeasured confounders, calling for future large-scale studies to validate these associations across diverse populations and inform holistic care strategies.

Disclosure statement

The authors declare no conflict of interest.

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