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Prevalence and Patterns of Urinary Incontinence and Its Impact on Quality of Life among Hospitalized Elderly Patients

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ABSTRACT

Background & Objective: Urinary incontinence (UI) is a prevalent disorder that affects both elderly males and females. Global aging increases the risk of UI due to physiological changes and deterioration of bodily function. This may significantly influence their quality of life. This study examined the prevalence and risk factors of UI in hospitalized elderly patients. In addition, to evaluate the impact of UI on their quality of life (QoL).

Materials & Methods: The participants were recruited from two central hospitals in Thi-Qar governorate. The survey included their sociodemographic characteristics, the International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF), and the EuroQol-5 Dimensions (EQ-5D).

Results: 301 elderly individuals (38.5% male and 61.5% female) was recruited to compare those who have UI (n = 169, 56.1%) and those without (n = 132, 43.9%). Multivariable analysis showed that higher BMI (p = 0.028), constipation (p = 0.001), fecal incontinence (p = 0.027), HT (p = 0.049) and recent urinary tract infection (p < 0.001) were significantly associated with urinary incontinence, while age, gender, and diabetes were not. A significant correlation between ICIQ-SF score and all quality of life domains was found.

Conclusion: Urinary incontinence was common amongst elderly inpatients. Predominantly, urgent UI was the most common type. The mixed and other kinds of UI exhibited the most deterioration of EQ-5D domains. Future research needs to utilize longitudinal designs and large sample sizes.

Keywords: Urinary Incontinence, Elderly, Quality of Life, Risk Factors

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1. Introduction

The International Continence Society (ICS) defines urinary incontinence (UI) as a complaint of involuntary leakage of urine (1). It is classified as urge urinary incontinence (UUI) when involuntary urine leakage is associated with urgency, stress (SUI) when it happens during physical effort or activity, and mixed (MUI) when it occurs with urgency, physical exercise, exertion, sneezing, and coughing (2). Other UI types, like overflow and functional, require special detection strategies (3). Specifically, urinary incontinence (UI) affects females more than males; however, female UI is frequently underestimated (4).

Elderly age, continuous coughing, connective tissue disorders, constipation, hard lifting, obesity, menopause, pelvic area traumas, pregnancy, and smoking can cause urinary incontinence (5). The World Health Organization (WHO) considers anyone 65 and older to be elderly. By 2050, 1.5 billion people will be 65 or older, up from 703 million in 2021 (6). Due to global aging, the risk of urinary incontinence rises with age as a result of physiological changes and functional impairments. Estimates indicate that each additional decade of age

elevates the chance of urinary incontinence by a factor of 1.36 (7). The prevalence of urinary incontinence (UI) among older individuals varies significantly, with a prior study indicating that 25 to 70 percent of the elderly population is affected by this condition (8-11). In research conducted in European nations estimates the overall incidence of urinary incontinence at 37% (12). Asian studies found 13% of elderly adults had urine incontinence, while African studies found 45.3% (13, 14). A 2015 study in Iran revealed that the prevalence of urine incontinence among women older than 60 years was 62.2% (15). Understanding the risk factors for urine incontinence is necessary due to the changing prevalence and the need for suitable doses in therapeutic strategies. A patient's life is affected by urinary incontinence subtype, multiple illnesses, age, and socioeconomic situation. According to respondents of a questionnaire-based research, social functioning and overall psychological wellness were the most impacted domains across all UI subtypes (16). The World Health Organization now recognizes urinary incontinence as a health issue (17). Urinary incontinence (UI) is linked to sleep disruptions, dermatological issues, physical activity constraints, social isolation, and psychological problems affecting on the quality of life (18). This medical condition is often underreported, as many elderly people regard it as a normal consequence of aging and might be embarrassed to declare it (19). Urinary incontinence (UI) is a common and debilitating condition that significantly impairs a patient's physical, mental, and social well-being. While research on UI prevalence and quality of life (QoL) has increased in Iraq, few studies have focused on hospitalized elderly populations. This gap is critical, as inpatients may be influenced by distinct cultural, healthcare access, and reporting factors. This study purposes to recognize the types and prevalence of UI in this group and explore the related demographic and clinical factors. The findings are essential for developing preventive measures, improving patient QoL, and alleviating strain on the Iraqi healthcare system.

2. Materials and Methods

2.1 Study design

This study was a cross-sectional research to evaluate the prevalence of UI among the hospitalized elderly individuals and to identify the factors that were associated with it.

2.2 Study setting and data collection

Participants were recruited from two central hospitals, Al-Hussein Teaching Hospital and Al-Nasiriya Teaching Hospital in Thi-Qar Governorate during the period from November 2024 to March 2025. The study was conducted in Nasiriya City, the administrative center of Thi-Qar Governorate, located in southern Iraq. The data was collected using a survey. The study employed a convenience sampling approach to recruit eligible hospitalized elderly patients who met the inclusion criteria. A key limitation of this method is its potential to introduce selection bias, meaning the sample may not be fully representative of the wider population of elderly inpatients with urinary incontinence. All participants were briefed on the study's aims, and data collection proceeded only after obtaining their verbal informed consent. The survey included their sociodemographic characteristics (Age, occupation, marital status, and levels of education). Validated Arabic versions of the International Consultation on Incontinence Questionnaire–Short Form (ICIQ-SF) and the EuroQol five-dimensional scale (EQ-5D) were utilized (20, 21). These versions have been translated and validated for Arabic-speaking people to ensure precision and cultural appropriateness.

2.3 Sample size

The Raosoft® sample size calculator established the sample size (22). To optimize sample size, a target population size (N) of approximately 15,000, reflecting the estimated annual number of eligible admissions across the three participating hospitals, a conservative expected prevalence (P) of 50% for the primary outcome, a margin of error (E) of 5%, and a confidence level of 95% were established. The final analyzed sample for this study was 301 participants after adjustment.

2.4 Sample criteria

The study participants were limited to hospitalized patients aged 65 years or older. Individuals were excluded from participation if they were under the age of 65, unconscious, declined to take part in the research, had any difficulty with communication or hearing, or had a previous or current significant psychological disorder.

2.5 Statistical analysis

Data analysis was conducted utilizing the Statistical Package for the Social Sciences® (SPSS), version 26 (IBM Corp., Armonk, NY, USA). Descriptive statistics summarized the demographic characteristics and clinical status of the participants. Categorical variables were reported as frequencies and percentages, whereas continuous variables were represented as means and standard deviations. Logistic regression analysis was conducted to determine the associations between potential risk factors and urinary incontinence (UI). The Hosmer and Lemeshow test are used to evaluate the goodness of fit. A p-value below 0.05 is deemed statistically significant. Spearman's correlation test was applied to determine the correlations between the ICIQ-SF score and EQ-5D dimensions.

3. Result

Table 1 illustrates the participants' characteristics with their clinical variables. The study recruited 301 elderly individuals (38.5% male and 61.5% female) to compare those who have UI (n = 169) and those without (n = 132), with a prevalence of UI (56.1%), Figure 1.

3.1 Urinary symptoms according to ICIQ-SF

The survey revealed the presence of varying patterns of UI amongst the subtypes. The severity of symptoms

(urine loss frequency, and volume) was higher in patients with mixed UI and other types. Meanwhile, patients with urgent UI reported that the leakage occurring when finishing urinating and getting dressed is the most common issue and accounted for 53%. Moreover, UI stress type, the surveyed participants recorded that this type is triggered by sneezing and coughing in 82%. Table 2 showed the responses of surveyed individuals with the ICIQ-SF questionnaire.

3.2 Quality of life of patients according to the type of urinary incontinence

Table 3 illustrates the impact of UI on the five QoL domains, with an overall mean score of 1.95 ± 0.54, indicating a moderate UI effect on their daily activities. The pain/discomfort was identified as the highest burden (mean score = 2.28), with the majority of them experiencing moderate to severe pain/discomfort (88.8%). In contrast, participant responses revealed that difficulties in usual activities (mean score = 1.91) and anxiety/depression (mean score = 1.9) were also prevalent. The QoL results significantly differ by urinary incontinence pattern across all domains ($p < 0.05$).

3.3 Correlations between ICIQ-SF score and EQ-5D dimensions

Table 4 reveals a significant correlation between ICIQ-SF score and all quality-of-life domains, as shown below.

3.4 Urinary incontinence and risk factors

Table 5 shows that several factors associated with UI. The data demonstrate that BMI plays a crucial role in increasing the likelihood of UI ($p = 0.028$). Whereas, HT, constipation, fecal incontinence, and UTI in the previous 30 days were associated with UI ($p = 0.049$, 0.001, 0.027, and ≤ 0.001) respectively. For every unit increase in BMI, HT, constipation, fecal incontinence and UTI over the previous 30 days, the odds are increasing by a factor of 3.203, 2.122, 3.199, 2.426 and 18.078, respectively. However, there wasn't a significant association between UI and other variables after adjustment.

Table 1. Socio-demographic and clinical data of the study participants according to the presence of urinary symptoms.

		Patients No (%)	Patients With UI	PatientsWithout UI
Gender	Male	116 (38.5%)	60 (51.7%)	56 (58.9%)
	Female	185 (61.5%)	109 (48.3%)	76 (41.1%)
Age, years	65-69	161 (53.5%)	86 (53.4%)	75 (46.6%)
	70-74	74 (24.6%)	40 (54.1%)	34 (45.9%)
	75-79	34 (11.3%)	19 (55.9%)	15 (44.1%)
	= or > 80	32 (10.6%)	24 (75.0%)	8 (25.0%)
Marital status	Single	12 (4.0%)	5 (41.7%)	7 (58.3%)
	Maried	188 (62.5%)	100 (53.2%)	88 (46.8%)
	Divorced	3 (1.0%)	2 (66.7%)	1 (33.3%)
	Widowed	98 (32.6%)	62 (63.3%)	36 (36.7%)
Educational level	Illiterates	157 (52.2%)	96 (61.1%)	61 (38.9%)
	Basic Literacy	19 (6.3%)	6 (31.6%)	13 (68.4%)
	Primary school	70 (23.3%)	40 (57.1%)	30 (42.9%)
	Secondary school	39 (13.0%)	19 (48.7%)	20 (51.3%)
	Bachelor degree	16 (5.3%)	8 (50.0%)	8 (50.0%)
Obese (BMI>30)	Yes	33 (11.0%)	18 (54.5%)	15 (45.5%)

Hypertension	No	268 (89.0%)	151 (56.3%)	117 (43.7%)
	Yes	193 (64.1%)	119 (61.7%)	74 (38.3%)
DM	No	108 (35.9%)	50 (46.3%)	58 (53.7%)
	Yes	154 (51.2%)	93 (60.4%)	61 (39.6%)
Neuorlogic disease	No	147 (48.8%)	76 (51.7%)	71 (48.3%)
	Yes	146 (48.5%)	92 (63.0%)	54 (37.0%)
Psychiatric diseases	No	155 (51.5%)	77 (49.7%)	78 (50.3%)
	Yes	51 (16.9%)	30 (58.8%)	21 (41.2%)
Cardiovascular disease	No	250 (83.1%)	139 (55.6%)	111 (44.4%)
	Yes	131 (43.5%)	82 (62.6%))	49 (37.4%)
Bone fracture in previous 60 days	No	170 (56.5%)	87 (51.2%)	83 (48.8%)
	Yes	37 (12.3%)	22 (59.5%)	15 (40.5%)
Constipation	No	264 (87.7%)	147 (55.7%)	117 (44.3%)
	Yes	195 (64.8%)	131 (67.2%)	64 (32.8%)
Fecal incontinence	No	106 (35.2%)	38 (35.8%)	68 (64.2%)
	Yes	79 (26.2%)	55 (69.6%)	24 (30.4%)
Recurrent UTI	No	222 (73.8%)	114 (51.4%)	108 (48.6%)
	Yes	187 (62.1%)	128 (68.4%)	59 (31.6%)
UTI in previous 30 days	No	114 (37.9%)	41 (36.0%)	73 (64.0%)
	Yes	178 (59.1%)	135 (75.8%)	43 (24.2%)
Using of dippers	No	123 (40.9%)	34 (27.6%)	89 (72.4%)
	Yes	52 (17.3%)	52 (100.0%)	0 (0.0%)
	No	249 (82.7%)	117 (47.0%)	132 (53.0%)

Table 2. Responses of patients with urinary symptoms to the ICIQ-SF questionnaire.

	ICIQ-SF	UI-Present (n=169)	Urgent UI (n=56)	Stress UI (n=23)	Mixed UI (n=46)	Other (n=44)
Urine loss frequency	About once a week or less often	68 (40.2)	35 (62.5)	10 (43.5)	9 (19.6)	14 (31.8)
	Two or three times a week about	14 (8.3)	5 (8.9)	2 (8.7)	4 (8.7)	3 (6.8)
	once a day	6 (3.6)	3 (5.4)	0 (0.0)	1 (2.2)	2 (4.5)
	Several times a day	39 (23.1)	8 (14.3)	8 (34.8)	12 (26.1)	11 (25.0)
	all times	42 (24.9)	5 (8.9)	3 (13.0)	20 (43.5)	14 (31.8)

Volume of urine lost (leak)	A small amount	78 (46.2)	45 (80.4)	11 (47.8)	13 (28.3)	9 (20.5)
	A moderate amount	40 (23.7)	7 (12.5)	4 (17.4)	15 (32.6)	14 (31.8)
	Large amount	51 (30.2)	4 (7.1)	8 (34.8)	18 (39.1)	21 (47.7)
leaking urine interfere	0 not at all	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	1	1(0.6%)	0 (0.0)	0 (0.0)	1 (2.2)	0 (0.0)
	2	6 (3.6)	2 (3.6)	2 (8.7)	1 (2.2)	1 (2.3)
	3	8 (4.7)	5 (8.9)	0 (0.0)	1 (2.2)	2 (4.5)
	4	14 (8.3)	5 (8.9)	1 (4.5)	4 (8.7)	4 (9.1)
	5	23 (13.6)	12 (21.4)	3 (13.0)	4 (8.7)	4 (9.1)
	6	12 (7.1)	4 (7.1)	4 (17.4)	0 (0.0)	4 (9.1)
	7	39 (23.1)	14 (25.0)	7 (30.4)	9 (19.6)	9 (20.5)
	8	40 (23.7)	9 (16.1)	4 (17.4)	10 (21.7)	17 (38.6)
	9	26 (15.4)	5 (8.9)	2 (8.7)	16 (34.8)	3 (6.8)
	10 a great deal	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
When does urine leak?	Before getting to the bathroom	37 (21.9)	22 (39.3)	1 (4.5)	13 (52.2)	1 (2.3)
	When coughing or sneezing	26 (15.4)	2 (3.6)	19 (82.6)	5 (10.9)	0 (0.0)
	When you are a sleep	3 (1.8)	2 (3.6)	0 (0.0)	1 (2.2)	0 (0.0)
	While performing physical activities	4 (2.4)	0 (0.0)	2 (9.1)	2 (4.3)	0 (0.0)
	When finishing urinating and getting dressed	42 (24.9)	30 (53.5)	0 (0.0)	10 (21.7)	2 (4.7)
	No obvious reason	21 (12.5)	0 (0.0)	0 (0.0)	0 (0.0)	21 (47.7)
	All the time	36 (21.3)	0 (0.0)	1 (4.5)	15 (32.6)	20 (45.5)
Total mean ICIQ score (SD) for Q1,Q2,Q3		13.0 (4.2)	10.5 (3.3)	12.7 (4.1)	15.0 (4.0)	14.4 (3.9)

ICIQ-SF, International consultation developed Incontinence Questionnaire Short Form. Data are expressed as n (%). "The interference scale ranges from 0 (not at all) to 10 (a great deal)."

Table 3. Quality of life of patients with urinary incontinence and its types.

Quality of Life		UI-Present N (%)	Mean Score	RANK	UI-types				P value
					Urgent (n=56)	Stress (n=23)	Mixed (n=46)	Other (n=44)	
Mobility	I have no problem in walking	61 (36.1)	1.83 ± 0.72	Some problems	26 (46.4)	11 (47.8)	13 (28.3)	11 (25.0)	0.014 *
	I have some problems in walking	75 (44.4)			25 (44.6)	11 (47.8)	20 (43.5)	19 (43.2)	
	I am confined to bed	33 (19.5)			5 (8.9)	1 (4.3)	13 (28.3)	14 (31.8)	
Self –care	I have no problems with self care	69 (40.8)	1.86 ± 0.86	Some problems	30 (53.6)	13 (56.5)	15 (32.6)	11 (25.0)	0.007 *
	I have some problems washing or dressing myself	54 (32.0)			17 (30.4)	8 (34.8)	13 (28.3)	16 (36.4)	
	I am unable to wash or dress myself	46 (27.2)			9 (16.1)	2 (9.1)	18 (39.1)	17 (38.6)	
Usual Activities	I have no problems with performing my usual activities	57 (33.7)	1.91± 0.76	Some problems	27 (48.2)	10 (43.5)	11 (23.9)	9 (20.5)	0.036 *
	I have some problems with performing my usual activites	70 (41.4)			20 (35.7)	9 (39.1)	19 (41.3)	22 (50.0)	
	I am unable to perform my usual activities	42 (24.9)			9 (16.1)	4 (17.4)	16 (34.8)	13 (29.5)	
Pain / Discomf	I have no pain or discomfort	19 (11.2)	2.28 ± 0.65	Moderate pain	8 (14.3)	3 (13.0)	3 (6.5)	5 (11.4)	0.016 *

Anxiety/ depression	I have moderate pain or discomfort	84 (49.7)	1.90 ± 0.66	Moderate anxious	37 (66.1)	10 (43.5)	22 (47.8)	15 (34.1)	0.016 *
	I have extreme pain or discomfort	66 (39.1)			11 (19.6)	10 (43.5)	21 (45.7)	24 (54.5)	
	I am not anxious or depressed	46 (27.2)			15 (26.8)	6 (26.1)	8 (17.4)	17 (38.6)	
	I am moderately anxious or depressed	94 (55.6)			38 (67.9)	10 (43.5)	28 (60.9)	18 (40.9)	
	I am extremely anxious or depressed	29 (17.2)			3 (5.4)	7 (30.4)	10 (21.7)	9 (20.5)	
Total weighted mean score of quality of life measured by third likert scale			1.95 ± 0.54	Moderate	Data are expressed as n (%). *Chi-square test				

Table 4. Spearman's correlations between ICIQ-SF score and EQ-5D dimensions.

Variables		Mobility	Self-care	Usual Activities	Pain/Discomfort	Anxiety/depression
ICIQ-SF score	rs	0.394**	0.361**	0.395**	0.263**	0.193*
	p-value	0.000	0.000	0.000	0.001	0.012
	N	169	169	169	169	169

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

rs: Spearman Correlation Coefficient

Table 5. Association of UI with risk factors.

Variables	B	S.E.	Wald	Df	Sig.	Exp (B)	95% C.I. for EXP(B)	
							Lower	Upper
Age ≥ 80 years			4.580	3	0.205			
Age (65-69) years	0.170	0.650	0.068	1	0.794	1.185	0.331	4.240
Age (70-74) years	-0.059	0.668	0.008	1	0.929	0.942	0.254	3.493
Age(75-79) years	-1.122	0.787	2.035	1	0.154	0.326	0.070	1.521
Gender	-0.450	0.400	1.266	1	0.260	0.638	0.291	1.396
Marital status	0.166	0.207	0.641	1	0.423	1.180	0.787	1.772

Educational level	0.205	0.148	1.911	1	0.167	1.227	0.918	1.640
Obese (BMI>30)	1.164	0.530	4.821	1	0.028	3.203	1.133	9.055
HT	0.768	0.389	3.892	1	0.049	2.155	1.005	4.623
DM	0.228	0.434	0.276	1	0.600	1.256	0.536	2.944
Neurologic disease	0.480	0.423	1.287	1	0.257	1.616	0.705	3.706
Psychiatrics disease	0.019	0.460	0.002	1	0.967	1.019	0.414	2.511
Cardiovascular disease	0.614	0.403	2.326	1	0.127	1.848	0.839	4.068
Bone fracture in previous 60 days	0.314	0.532	0.348	1	0.555	1.369	0.482	3.882
Constipation	1.163	0.349	11.097	1	0.001	3.199	1.614	6.340
Fecal incontinence	0.886	0.400	4.913	1	0.027	2.426	1.108	5.312
Recurrent UTI	0.450	0.534	0.708	1	0.400	1.568	0.550	4.466
UTI in previous 30 days	2.895	0.550	27.675	1	0.000	18.078	6.149	53.153
Using of dippers	23.401	4657.873	0.000	1	0.996	14549108504.717	0.000	.
Constant	-35.318	4657.874	0.000	1	0.994	0.000		

Note: B= regression coefficient, S.E. = standard error, Exp (B) = odds ratio, and Sig = p-value.

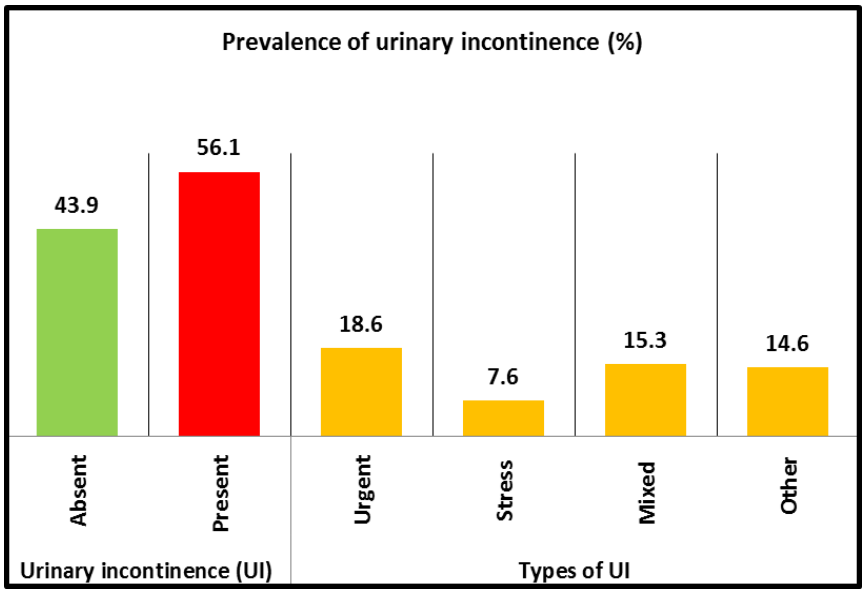

Figure 1. Prevalence of urinary incontinence among the patients (**Prepared by Authors, 2025**).

4. Discussion

This study demonstrates the prevalence of UI subtypes amongst the elderly hospitalized individuals at Thi-qar governorate in Iraq with an illustration of the impact of the disease on patients' QoL. Predominantly, the most common reported subtype was urgent UI followed by MUI, other types, and stress UI respectively. The data indicate that 56.1% of the institutionalized elderly experienced uncontrollable urinary incontinence, a prevalence consistent with the range identified in literature, spanning from 43% to 77% **(23, 24)**. A systematic assessment of cross-sectional studies indicated an average incidence of consistent 58%. In contrast, a Brazilian study with the largest sample size reported a rate of 57%, with the findings presented above **(25, 26)**. The findings in this study show that several comorbidities (neurological disorders, hypertension, constipation, fecal incontinence, cardiovascular diseases, and UTIs) are associated with UI. These results are consistent with Regina et al **(27)**, who reported that neurological impairment contributed to bladder dysfunction within the elderly population **(27)**. Meanwhile, the systematic review study was conducted in 2009, which highlighted how UTIs greatly worsen urinary symptoms in male individuals with UI, which are consistent with the results of this research **(28)**. In addition, the current study findings, constipation and fecal incontinence, significantly impacted the UI which is consistent with findings of a study performed in China demonstrating that

constipation was one of the most common risk factors associated with UI amongst elderly people who were living in rural areas (29). The utilization of diapers as one of the aspects linked to urinary incontinence prompts the development of hypotheses on the correlation between these variables as shown in this research. Other factors contributing the reported cases of urinary incontinence and their impact on quality of life should be considered. Institutional alterations in clinical protocols—such as those related to patient care and bowel management—could have acted as confounding variables, potentially affecting both patient reporting and study results. Recognizing this institutional heterogeneity is vital for contextualizing the results and directing future research. Contrary to common assumptions and several studies conducted with elderly people, urinary incontinence is not an inherent change associated with the aging process. The incidence of this condition escalates proportionately with age and can be classified as a geriatric syndrome (30). The aging process results in cognitive alterations that affect bodily coordination and mobility, alongside the onset of related conditions such as neurological disorders, which collectively increase the prevalence of urinary incontinence (UI). Current scientific research indicates that urinary incontinence (UI) might be associated with reduced physical activity and mobility, thereby impacting functional capacity in essential daily activities. Numerous health complications arise from mobility limitations and challenges in accessing the bathroom, resulting in physical disabilities. Physical function deterioration and muscular weakness can impact continence and mobility in the elderly, and as a consequence, induce urgent UI due to the difficulty in reaching the bathroom, which was highly common in this research. Patients with UI especially those diagnosed with MUI showed a high association with a changed quality of life. These individuals reported more difficulties with emotional well-being, self-care, and mobility. The weight of anxiety and discomfort was also noticeable, highlighting the several effects of incontinence on daily life. The patients with mixed UI and other types experienced the greatest decline in quality of life, whereas those with Urgent UI had the best outcomes. Stress UI patients generally showed intermediate QoL levels, though they appeared to have poorer results in the anxiety/depression domain. A study was performed in Iran that included elderly women over 60 years, demonstrating a significant association between UI and QoL ($r = 0.585$, $p < 0.001$) (31). The correlation between urinary incontinence and mobility restrictions has been demonstrated in multiple investigations, supporting the hypothesis that urinary incontinence is a multifactorial syndrome associated with many basic functional activities (4, 32). In this study, we discovered a significant positive relationship between ICIQ-SF score and QoL domains with varying strength levels, with usual activities ($r = 0.395$, $p < 0.001$), mobility($r = 0.394$, $p < 0.001$), and self-care ($r = 0.361$, $p < 0.001$) showing a moderate relationship while pain/discomfort ($r = 0.263$, $p = 0.001$) and anxiety/depression ($r = 0.193$, $p = 0.012$) being weak. These findings are consistent with the results of Tian Z et al (33), which found a weak correlation between ICIQ-SF score and anxiety/depression domain of QoL (33). The results of logistic regression revealed further insights because they illustrate the impact of obesity in individuals with higher BMI on UI as a strong predicator. A systematic review of epidemiological studies found that each 5-unit increase in BMI is associated with about a 20% to 70% increase in the risk of UI which is consistent with the results of this study (34). HT, constipation, and fecal incontinence were also found to be strong risk factors for UI. Furthermore, a recent UTI within 30 days was considered a strongly associated factor, which could explain why the infection exacerbated bladder deterioration. Another systematic review and meta-analysis of observational studies discovered that obesity, HT, and UTI were associated with UI incidence (6). In contrast, age, diabetes, gender, and mental disease did play a statistically significant association with UI after the adjustment which might be due to the indirect effect.

These realizations help to underline the necessity of combined treatments addressing psychological effects as well as physical ones. The study emphasizes the multifarious character of urinary incontinence and its complicated interaction with comorbid diseases. Critical first steps toward bettering treatment for this vulnerable group are focused screening for at-risk individuals, early management of modifiable factors including obesity and constipation, and comprehensive support for quality-of-life issues.

5. Conclusion

Urinary incontinence was common amongst hospitalized elderly inpatients, in percent 56.1% of elderly hospitalized patients. Predominantly, urgent UI was the most common type. Different kinds of urinary incontinence have distinct effects on quality of life. Individuals with mixed and other types of UI exhibited the most pronounced deterioration across the majority of EQ-5D domains, in contrast to those with urge UI, who showed more positive results. UI is highly linked to obesity, HT, constipation, fecal incontinence, and recurrent UTIs. These health conditions are mostly preventable and controlled; highlighting the need for a variety of UI interventions. So the findings demonstrate the imperative for specific treatment approaches that address the complex characteristics of urinary incontinence, especially for patients exhibiting a mix of symptoms. Future research needs to utilize longitudinal designs and large sample sizes to confirm these correlations and investigate the underlying mechanisms of causality. The cross-sectional design and limited sample size are limitations of this study.

6. Declarations

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6.2 Ethical Considerations

This study was approved by the scientific committee at the University of Thi-Qar of Pharmacy. Consent was obtained from participant before starting the gathering of information. They were apprised of the study's aims and their prospective involvement in UI research prior to providing consent. The researchers followed the declaration of Helsinki as a set of ethical principles in the study conduct.

6.3 Authors' Contributions

Conceptualization, methodology, validation, supervision and project administration, Abbas.Okab; software and formal analysis, Fadhel. Shihab; investigation, resources, data curation, Hayder.Sameer; writing—original draft preparation, writing—review and editing, Abbas.Okab and Hussein. Alhazza.

6.4 Conflict of Interest

The authors declare no conflict of interest.

6.5 Fund or Financial Support

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6.6 Using Artificial Intelligence Tools (AI Tools)

The authors were not utilized AI Tools.

7. Publisher's Note

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