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Urinary Incontinence in Late Pregnancy: - Women's Experiences

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ABSTRACT
Background: Involuntary urination, or urinary incontinence, is a prevalent disorder that affects 17–45% of women globally. **Aim of the study**: This study aimed to describe women's experiences of urinary incontinence in late pregnancy. **Study Subjects and design**: A descriptive cross-sectional study design inspects condition in a definite population at a period of time. **Setting**: The study was conducted at an Outpatient Antenatal Clinic at New Obstetric and Gynecological Hospital, Mansoura University, Egypt **Tool of data collection**: One tool was used, A Structured Interviewing Questionnaire .**Results**: The current study showed that 67.7% of studied pregnant women who had urinary incontinence suffered in silence, 66.6% of them ate high fiber diet, 52.1% of them avoided laxatives for long time, 49% of them treat cough, 44.8% of them maintain healthy weight and empty bladder completely and 41.7% of them decrease performance of domestic activity. **Conclusion**: suffering in silence, eating high fiber diet, avoiding laxatives for long time, treating cough, maintaining healthy weight and emptying bladder completely and decreasing performance of domestic activity were women's experiences of urinary incontinence in late pregnancy. **Recommendations**: Every pregnant woman should get a UI screening as part of their prenatal care. Moreover, teaching pregnant women who experience pee incontinence healthy lifestyle choices, appropriate toileting techniques, frequent exercise, a high-fiber diet, and water consumption.
Keywords: *Action taken, Late Pregnancy, Urinary Incontinence, and Women Experiences*.

1. Introduction

Around the world, urinary incontinence affects 17–45% of women, or 27.7% of the total population. Egypt. The overall prevalence rates of UI in the United Arab Emirates, Qatar, Riyadh, Saudi Arabia, and the Middle East were 20.6%, 20.3%, 41.4%, and 29%, respectively. Many expectant mothers choose not to seek medical help because they are unaware that UI is curable. Because they believe it is culturally sensitive, pregnant women are frequently reluctant to talk about it. **(Elattar et al., 2022).** The complaint of involuntary urine loss is known as urinary incontinence (UI). Urinary incontinence was divided into three different subtypes by the International Continence Society (ICS). Urine leakage during physically demanding tasks, such coughing or sneezing, is known as stress urinary incontinence (SUI). The involuntary leakage of urine, usually accompanied or immediately preceded by an abrupt need to urinate, is the hallmark of urgency urinary incontinence (UUI). When a patient has symptoms that are consistent with both stress and urgency urine incontinence, it is called mixed urinary incontinence (MUI). **(Shaikh et al., 2024).** The following factors can make a woman more likely to experience incontinence during pregnancy: a history of pelvic floor muscle weakness; constipation that puts pressure on the pelvic floor; urinary tract infections; diabetes; obesity and heart disease; multiple pregnancies; smoking; a sedentary lifestyle; having a large baby; and more. **(Rajavuori et al., 2022).**

Significance of the Study

The prevalence of UI increases with pregnancy lengthening and peaks, typically, in the third trimester **(Caruso, Schreiner, Todescatto, Crivelatti & Oliveira, 2021).** During pregnancy, urinary incontinence was a major issue. Although there are no fatalities, there are more morbidities, such as persistent skin irritation, local infections, and

upsetting psychological effects. **(Ting & Cesar, 2020).** Even though UI is not a fatal condition, it can cause social isolation and erode one's confidence in social interactions. Many pregnant women suffer in silence as a result of the dearth of knowledge on UI, and the shame attached to the condition often prevents it from being reported **(Erkal Aksoy, Akin & Dereli Yilmaz, 2021).**

Pregnancy-related UI prevalence ranges from 36-76% in Europe, 53-68% in North and South America, and 55% in Pakistan. **(Mostafaei et al., 2020).** About 27.7% of pregnant women in developing country (like Egypt) have UI, and because of social standards, most women feel ashamed and embarrassed when they report having UI. **(Wasfy, Soltan, Abdelwahab, & Salama, 2021).**

Due to the risk factors that include multiparity, inadequate health infrastructure, lack of UI intervention, and a negative attitude about UI, women in low-income countries are more susceptible to these issues. Pregnant women may experience UI more frequently than reports indicate which could have a more negative impact on their daily lives **(Ting & Cesar, 2020).** Due to limited local data on urinary incontinence especially during pregnancy and we need to know magnitude of the problem in local community. So, this study was conducted.

Aim of the Study

This study aimed to determine Urinary Incontinence in Late Pregnancy: - Women's Experiences.

Research questions

What are experiences of women suffering from urinary incontinence in late pregnancy?

2. Material and methods

2.1.Design

A descriptive cross-sectional study was used to define a population at a specific point of time without attempting to draw any interference **(Polit, Beck & Owen, 2022).**

2.2 Setting

The study was conducted at an Outpatient Antenatal Clinic at New Obstetric and Gynecological Hospital, Mansoura University, Egypt, it is affiliated To Ministry of Higher Education. This clinic is opened five days per week from 9am to 2pm with average of 50 pregnant woman per day

Sample type

A systematic random sample was used.

Study subjects

The study sample consisted of (233) pregnant women in their third trimester during the period of 6 months from March 2022 to August 2022 according to the following criteria.

Inclusion criteria:

- A third trimester healthy pregnant women.

Exclusion criteria:

- Pregnant women who complain of any kidney disease or urethral infection which might causing UI.

Sample size calculation:

Based on data from literature (Yaqub, Habib & Shaheen, 2019) to calculate the sample size with precision/absolute error of 5% and type 1 error of 5%, the sample size for the study is 233. Sample size = [(Z1-α/2)2. P (1-P)]/d2

Where,

Z1-α/2 = is the standard normal variate, at 5% type 1 error ($p<0.05$) it is 1.96.

P = the expected proportion in population based on previous studies.

d = absolute error or precision.

So,

Sample size = [(1.96)2. (0.321). (1-0.321)]/ (0.06)2 =232.6

Based on the above formula, the sample size required for the study is 233 pregnant women.

2.3 Data Collection Tool

One tool was utilized for data collection: Structured Interviewing Questionnaire. This tool was developed from **(Nigam et al., 2016 & Ibrahiem, Abd-Elmoneim& Mohamady, 2020).** It is a simplified, valid form. It consisted of two parts:

Part (1): Obstetric and Gynecological data of the studied pregnant women, such as: gravidity, parity, previous abortion, mode of last delivery, baby weight at last delivery, previous perineal tear /laceration, previous dilation &curettage, previous medical history, previous surgical history, types of previous surgery , onset of initial AN visits in current pregnancy, number of AN visits in current pregnancy, presence of urinary incontinence, pre-pregnancy urinary incontinence, types of urinary incontinence & onset of urinary incontinence.

Part (2): Action taken when pregnant women have urinary incontinence, such as: Suffering in silence UI, engaged in regular pelvic floor muscle exercise, decrease fluid intake, decrease performance of domestic activity, using perineal pad, empty bladder completely when voiding, timely voiding, maintain healthy body weight, eat high fiber diet, treat cough early as possible and avoid laxative for long period of time.

Validity of the study tool:

The tool were reviewed by three juries of woman`s health and midwifery nursing experts from the faculty of nursing, Mansoura University. These experts assessed the tools for clarity, relevance, application, comprehensive, and understanding. According to their comment's modification was considered as certain sentences were simplified to be easily understood by the women.

Field work

The actual field work of the study was conducted over a period of six months from the beginning of March 2022 to the end of August 2022. It was carried out through two stages: Preparatory stage which included three phases (administrative phase, reviewing literature & developing tools and pilot phases) and operating stage which included two phases (data collection and data analysis).

1. Administrative phase: This phase was started by obtaining all forms of approval from the concerned authorities, head of department, Research Ethics Committee at the Faculty of Nursing, Mansoura University and an official letter from the Faculty of Nursing, Mansoura University was directed to the director in the previous mentioned study setting after explaining the study's aim.

2. Reviewing literature and developing tool phases: Tool for data collection was designed after reviewing the national and international related literatures. The review collected was a guide for developing the tool for data collection.

3. Pilot phase: a pilot study was conducted prior data collection on 24 pregnant women 10% of the sample size to evaluate the clarity and applicability of tool, ensure that questions were consistently delivered to pregnant women and that they carry out intended meaning that were designed to achieve. It also helped to estimate what was needed to complete the questionnaire to be clear and relevant. The pilot study was excluded from the study sample.

Statistical Analysis

The statistical analyses were performed using SPSS for windows version 20.0(SPSS Chicago, IL) version 20.0. Continuous data were expressed in Mean ±standard deviation (SD). Categorical data were expressed in number and percentage. Chi-square test was used for comparison of variables with categorical data. Cronbach's alpha test was performed to test for the internal consistency of the tool used in the study. Statistical significance was set at $p<0.05$.

Results

Table 1: Presents that nearly 25% of the studied pregnant women were having more than 3 gravid& nearly 13% had more than 3 para. The majority (81.9%) of the studied pregnant women were had C.S and nearly 16% of the studied pregnant women were had oversized baby.

Table 2. Presents that nearly 70% UI experiencing women were suffered in silence, only 27.1% were engaged in regular pelvic floor muscle exercise, 41.7% decreased the heavy domestic activities, nearly 40% were used perineal pads & nearly 50% were using cough medication.

Table 3. Presents that the gravidity>3, parity2-3, C.S and baby over weight at last delivery were associated factors of urinary incontinence.

Table 4. Shows that initial antenatal visit in current pregnancy, bronchial asthma, chronic cough and sneeze, lower segment caesarean section surgery, constipation, caffeine drinking and amount of drinking were also associated factors of urinary incontinence.

Figure (1) Illustrates that 41.2% of studied pregnant women had prevalence of urinary incontinence.

Figure (2) Illustrates that 56.3% of studied pregnant women had stress urinary incontinence and 32.3% of them had mixed UI, while only 11.4% of them had urge UI.

Discussion

The present study aimed to descripe women's experiences of urinary incontinence in late pregnancy. The results of the study answered the study question that were more than two third of studied pregnant women who had urinary incontinence suffered in silence and ate high fiber diet, more than half of them avoided laxatives for long time, less than half of them treat cough, maintain healthy weight , empty bladder completely and decrease performance of domestic activity. The current study findings show that nearly one quarter of the studied pregnant women had more than three times gravidity. In accordance with study done by **Ibrahiem, Abd-Elmoneim & Mohamady (2020)** who assess the urinary incontinence's risk factors among pregnant women in Helwan and found that about one quarter of the pregnant women were 3 times gravidity. This may be due to more than half of the studied sample was aged from 25-30 years old and reproductive age in Egypt is about 25 to 45 years.

While the present study results were in contrary to study done by **Aydin, Kocaoz & Kara (2020)** who study the prevalence of lower urinary tract symptoms in pregnant adolescents and the influencing factors, it found that the majority of the studied pregnant women had 1 time gravid. This may be due to cultural differences between developing countries as Egypt and developed countries.

The current study findings showed that the majority of the studied pregnant women had a history of caesarean section. In accordance with study done by **Jaffar et al. (2020)** who study urinary incontinence and its association with pelvic floor muscle exercise among pregnant women attending a primary care clinic in Malaysia and found that more than three quarter of the studied pregnant women had a history of caesarean section among the multi-gravida women. This may be due to the number of caesarean section (C-section) deliveries has been growing rapidly in many countries such as Egypt with rate of (72.2%) that is an emerging global epidemic.

While the current study findings were disagreeing with study done by **Yaqub, Habib & Shaheen (2019)** who assess the frequency of urinary incontinence (UI) and its associated risk factors in pregnant population in Pakistan and found that the majority of the studied pregnant women were parous women with vaginal delivery. This may be due to differentiation of sample size between current and other study.

Regarding to action taken when the studied pregnant woman had urinary incontinence, the current study findings revealed that two third of studied pregnant women suffered in silence from urinary incontinence followed by ate high fiber diet, then more than one third had used perineal pad and decrease fluid intake. This may be due to more than half of studied pregnant women lived in rural area with intermediate level of education and were embarrassed.

The present study findings similarly with study done by **Erkal, Aksoy, Akin, Dereli & Yilmaz (2021)** who study urinary incontinence experiences of pregnant women in Turkey and found that strategies to take precautions consists of social isolation, using pads/ changing clothes and reducing fluid intake. While the present study results were dissimilarly with study done by **Yusoff, Awang, & Kueh (2019)** and found that the most strategies used by female to minimize the occurrence of urine leakage were having timely schedule for going toilet and emptying the bladder completely when voiding then use absorbent. This may be due to cultural differences.

Regarding associated factors of urinary incontinence among studied pregnant women, the present study findings revealed that there was highly statistical significance relation between the prevalence of urinary incontinence and gravidity, the present study findings were in agreement with study done by **Fareed et al. (2023)** who study prevalence ratio of urinary incontinence and its association with parity and gravidity and found that there was a statistically relation between the prevalence of UI and gravidity.

While, a contrary study done by **Elserafy, Shaheen, Khalil & Abdelrahman (2019)** who study urinary incontinence among pregnant women attending a rural family health center in Gharbiya Governorate, Egypt and found that there was no statistically significant relationship between urinary incontinence and gravidity.

Moreover, the present study results revealed that there was a highly statistical significance relation between the prevalence of urinary incontinence and parity. The current study findings were dissimilarly with study done by **Torgbenu, Aimakhu, Morhe & Ameyaw (2023)** they found that the parity ≥3 times was independent risk factors for new onset of urinary incontinence. This may be due to difference of sample size of parous women ≥3 in two studies.

Furthermore, the present study results revealed that there was a highly statistical significance relation between the prevalence of urinary incontinence and mode of last delivery. In accordance with **Chen, Luo, Chen, Xjin & Cai (2020)** who study development of predictive risk models of antepartum urinary incontinence for primiparous and multiparous women and found that there was a relation between urinary incontinence and mode of delivery.

While the present study findings were dissimilarly with study done by **Fareed et al. (2023)** who found that the vaginal delivery was independent risk factors for postoperative new-onset UI. Also the study findings disagree with study done by **Tahtinen et al. (2019)** who study long-term risks of stress and urgency urinary incontinence after different vaginal delivery modes and found that there was no association of urinary incontinence with mode of delivery.

Also, the present study results revealed that there was a highly statistical significance relation between the prevalence of urinary incontinence and baby weight at last delivery. In agreement with study done by **Xu et al. (2023)** who study establishment and validation of a simple mammogram for predicting early postpartum stress urinary incontinence among women with vaginal delivery in China and found that there was statistical significance relation between the prevalence of urinary incontinence and baby weight at last delivery. This may be regarded to baby weight at time of delivery cause pelvic floor stretch and remain stretched for some time. In addition to, the combination of hormones and stretched muscles means the muscles that control of bladder is weakened. This can lead to an accidental leak of urine.

The present study results revealed that there was a highly statistical significance relation between prevalence of urinary incontinence and bronchial asthma, chronic cough and sneeze. In accordance with **Abufaraj et al. (2021)** who study the prevalence and risk factors of urinary incontinence in pregnant females in India and found that there was a strong relation between urinary incontinence and chronic cough. This may be due to chronic cough causing an irritation to myofascial muscle of the diaphragm, intercostal muscles, and transverse abdominal muscle and thus,

may cause the intra-abdominal pressure increases which will pressurize the pelvic floor and overload PFM producing involuntary urine leakage.

While the present study finding was dissimilarly with study done by **Ajith et al. (2019)** who study prevalence and factors of urinary incontinence among postmenopausal women attending the obstetrics and gynecology outpatient service in a tertiary health care center in Indian and found that chronic cough, recurrent urinary tract infections (UTI) and prolonged duration of labor were independent risk factors associated with urinary incontinence.

The present study results found that there was a highly statistical significance relation between prevalence of urinary incontinence and constipation, this was in accordance with study done by **Lian et al. (2019)** who study constipation and risk of urinary incontinence in women in China and found that the constipation was significantly associated with the risk of urinary incontinence in women. Also, study done by **Ural, Gucuk, Ekici & Topcuoglu (2021)** who study prevalence and risk factors of urinary incontinence among pregnant women in Sydney and found that the constipation was risk factors associated with urinary incontinence. This may be due to increased intra-abdominal pressure resulting from bearing down during constipation thus enhancing occurrence of urinary incontinence.

The present study revealed that there was a highly statistical significance relation between prevalence of urinary incontinence and caffeine drinking specially cola and amount of drinking specially3 – 4 cups per day. In accordance with **Razzaq et al. (2022)** who studied prevalence of urinary incontinence in pregnant women study in Pakistan and found that there was a highly statistical significance relation between prevalence of urinary incontinence and drinking cola and with nearly one liter per day. This may be due to caffeine being able to irritate the bladder and increase in flow rate and frequency of urination.

The current study showed that less than half of studied pregnant women had prevalence of urinary incontinence**.** The study findings were agree with study done by **Ghani et al. (2022)** who study the prevalence of urinary incontinence in pregnant women and found that the prevalence of urinary incontinence was nearly half studied pregnant women.

While the present study findings were in contrast with study done by **Wuytack, Moran & Begley (2021)** who studied prevalence of urinary incontinence and association between multiple deliveries and obesity during pregnancy and they found that prevalence of UI was less than one fourth of total sample.

Regarding to type of urinary incontinence, the present study revealed that more than half of studied pregnant women had stress urinary incontinence, followed by mixed type and then urge urinary incontinence. The current study results were inagreement with study done by **Moossdorff-Steinhauser, Berghmans, Spaanderman & Bols (2021a)** who study urinary incontinence during pregnancy: prevalence, experience of bother, beliefs, and help-seeking behavior in Netherlands and found that more than half of the studied pregnant women were stress urine incontinence. Also, study done by **Jaffar et al. (2022)** found that the stress urinary incontinence is the most prevalent type of UI in two third of studied pregnant women. This may be due to more than half of studied sample had constipation thus increase intra-abdominal pressure so stress incontinence occurred.

While the present study results were disagreed with study done by **Soliman, Omar, Zarzour & El Azab (2020)** who study the urinary incontinence among pregnant women in an Egyptian primary health center and found that the studied pregnant women suffered from urge urinary incontinence & stress urinary incontinence respectively.

Conclusion

Suffering in silence, eating high fiber diet, avoiding laxatives for long time, treating cough, maintaining healthy weight and emptying bladder completely and decreasing performance of domestic activity were women's experiences of urinary incontinence in late pregnancy.

Recommendation

- Every pregnant woman should get a UI screening as part of their prenatal care.
- Teaching pregnant women who experience urinary incontinence healthy lifestyle choices, appropriate toileting techniques, frequent exercise, a high-fiber diet, and water consumption.

Further study

- Explore the effect of C. section on prevalence of urinary incontinence.
- Assessment the knowledge about UI and behaviors among pregnant women.
- Effect of applying self-management mobile App on urinary incontinence in pregnant women.

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Disclosure

The authors state that there is no conflict of interests regarding this study.

Tables and graphs

Table 1. Number & percentage distribution of the studied pregnant women according to their obstetric data

Items	n = (233)	%
Gravidity		
Primigravida	51	21.9
2 – 3	**124**	**53.2**
>3	58	24.9
Parity		
Nulliparous	51	21.9
Primiparous	52	22.3
2 – 3	**100**	**42.9**
> 3	30	12.9
Mode of last delivery (n=182)		
Spontaneous vaginal delivery (SVD)	6	3.3
vaginal delivery with episiotomy	27	14.8
Caesarean section (C.S)	**149**	**81.9**
Baby weight at last delivery (n=182)		
2.5 < 3 kg	97	53.3
3 < 3.5 kg	56	30.8
3.5 > 4 kg	**29**	**15.9**

Table 2. Number & Percentage distribution of the studied pregnant women according to their action taken when they are having urinary incontinence.

Items (*)	n= (96)	%
- Suffering in silence UI	65	67.7
- Engaged in regular pelvic floor muscle exercise	26	27.1
- Decrease fluid intake	16	16.7
- Decrease performance of domestic activity	40	41.7
- Using perineal pads	38	39.6
- Empty bladder completely when voiding	43	44.8
- schedual for voiding	36	37.5
- Maintain healthy body weight	43	44.8
- Eat high fiber diet	64	66.7
- Use cough medication	47	49.0
Note (*) Multiple choices are possible.		

Table 3. Associated factors of urinary incontinence among the studied pregnant women.

Associated factors	Prevalent (n=96)		Not Prevalent(n=137)		Significance test	
	n	%	n	%	X^2	P
Gravidity						
Primigravida	0	0.0	51	37.2		
2 - 3	42	43.8	82	59.9		
>3	54	**56.2**	4	2.9	102.981	**<0.001****
Parity						
Nulliparous	0	0.0	51	37.2		
Primiparous	19	19.8	33	24.1		

2 - 3	47	**49.0**	53	38.7		
>3	30	31.3	0	0.0	80.404	**<0.001****
Mode of last delivery (n=182)						
Spontaneous vaginal delivery (SVD)	1	1.2	5	5.2		
Spontaneous vaginal delivery with episiotomy	27	31.4	0	0.0		
Caesarean section (C.S)	58	**67.4**	91	94.8	36.536	**<0.001****
Baby weight at last delivery (n=182)						
2.5 < 3 kg	30	**31.3**	67	69.8		
3 < 3.5 kg	27	28.1	29	30.2		
3.5 > 4 kg	29	30.2	0	0.0	42.764	**<0.001****

Table 4. Continue, associated factors of studied pregnant women with urinary incontinence

	Prevalent (n=96)		**Not Prevalent(n=137)**		**Significance test**	
Initial AN visit in current pregnancy						
First trimester	69	71.9	78	56.9		
Second trimester	7	7.3	41	29.9		
Third trimester	20	20.8	18	13.1	18.085	**<0.001****
Medical history						
Diabetes	13	13.5	8	5.8	4.083	**0.043***
Hypertension	22	22.9	29	21.2	0.101	0.750
Bronchial asthma	22	22.9	7	5.1	16.425	**<0.001****
Chronic cough and sneeze	29	30.2	13	9.5	16.399	**<0.001****
Surgical history						
Yes	90	93.8	74	54.0		
No	6	6.3	63	46.0	42.757	**<0.001****
Types of previous Surgeries (n=164)						
Lower segment caesarean section	60	85.8	89	94.7		
Salpinges oophorectomy	5	7.1	5	5.3		
Laparotomy and cystectomy	5	7.1	0	0.0	7.288	**0.026***
Constipation						
Yes	70	72.9	67	48.9		
No	26	27.1	70	51.1	13.434	**<0.001****
Caffeine drinking						
Yes	92	95.8	62	45.3		
No	4	4.2	75	54.7	64.435	**<0.001****
Type of drinking (n=154)						
Tea	42	67.7	60	65.2	0.106	
Chocolate	14	22.6	23	25.0	0.119	
Cola	39	62.9	42	45.7	4.421	
Nescafe	11	17.7	17	18.5	0.013	**0.035***
Amount of drinking per day (n=154)						
1 – 2 cups	17	27.4	40	43.5		
3 – 4 cups	45	72.6	38	41.3		

More than 4 cups	0	0.0	14	15.2	18.738	**<0.001****

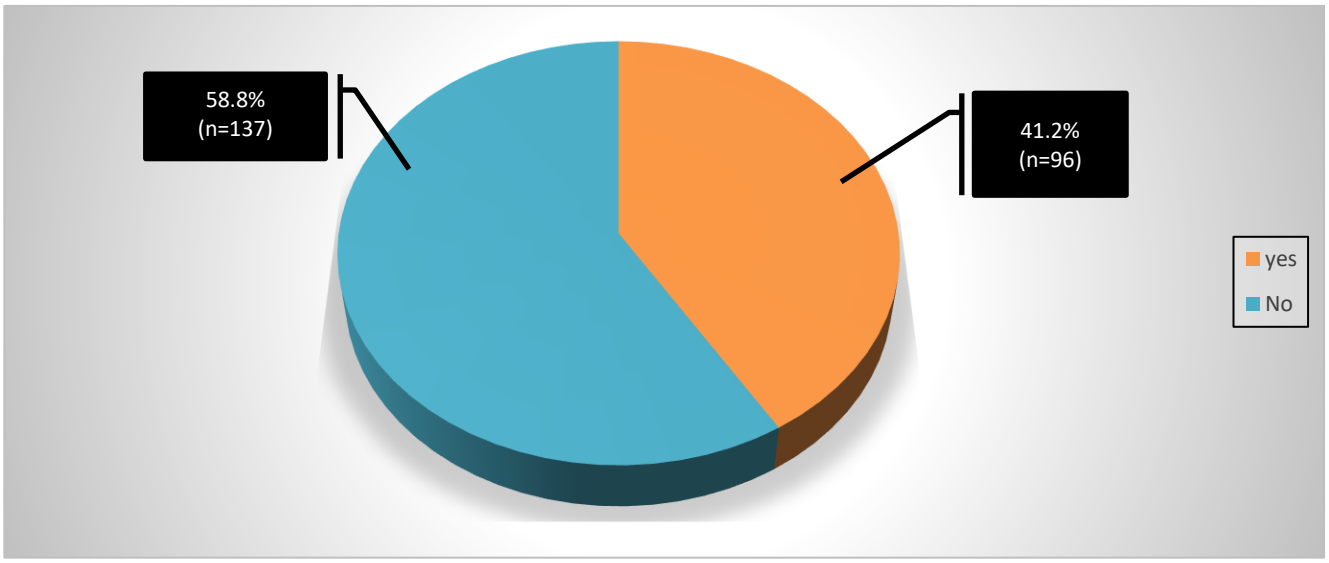

Figure 1. Prevalence of urinary incontinence among the studied pregnant women (n=233)

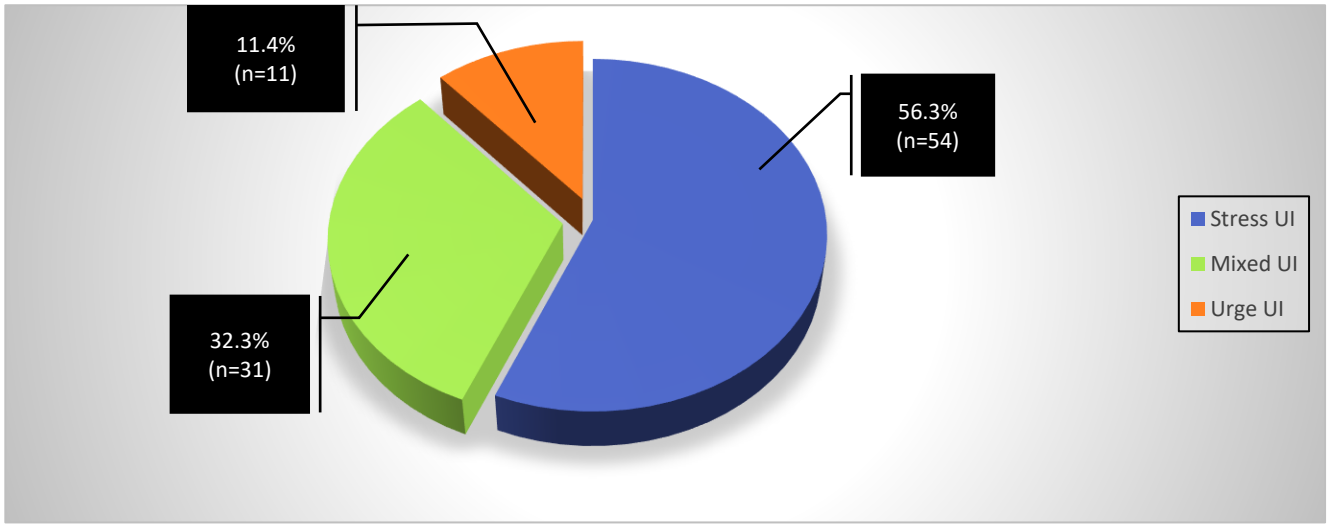

Figure 2. Types of urinary incontinence (n=96)

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