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URINARY PROBLEMS AMONGST GYNECOLOGICAL CONSULTATIONS. ASSOCIATION BETWEEN PROLAPSE, GYNECOLOGICAL SURGERY AND DIABETES

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ABSTRACT

Background: Urinary incontinence is the inability of a woman to maintain bladder control. Symptoms range from urgency, frequency, nocturia to urge incontinence (1). It limits functional and social activities and leads to depression and social withdrawal. (2). This observational study aimed to describe the common urinary problems amongst gynecological consultations. It also describes the relationship of urinary incontinence with history of diabetes, previous gynecological surgery and prolapse.

Methods: The study was conducted as a descriptive cross sectional study from Jan-May 2015 at Qassim University Clinic, Buraidah. Women with urinary problem and those without urinary problems were compared for risk factors including diabetes, prolapse and previous gynecological surgery. The Statistical Package for the Social Sciences 22 (SPSS 22) was used to conduct proportion z-tests to determine the association of prolapse, gynecological surgeries and diabetes with urinary incontinence. To test the hypothesis, differences between two groups on the aforementioned factors were examined. The groups included participants that reported having urinary problems (n = 111) and those who do not have urinary problems (n = 100). **Results:** The most frequent complaints of participants with urinary problems were urgency (n = 66, 59.46%), Stress incontinence (SI) (n = 65, 58.56%) and frequency (n = 62, 55.86%). For participants with a urinary problem, 89.19% have not had a gynecological surgery (n = 99) and the remaining 10.81% of participants had a gynecological surgery (n = 12). For participants without a urinary problem, 97.0% have not had a gynecological surgery (n = 97) and the remaining 3.0% had a gynecological surgery (n = 3). For participants with a urinary problem, 72.97% did not have diabetes (n = 81) and the remaining 27.03% of participants did have diabetes (n = 30). For participants without a urinary problem, 92.0% did not have diabetes (n = 92) and the remaining 8.0% did report having diabetes (n = 8). For participants with a urinary problem, 91.89% had not experienced a prolapse (n = 102) and the remaining 8.11% of participants had experienced a prolapse (n = 9). For participants without a urinary problem, 98.0% have not experienced a prolapse (n = 98) and the remaining two participants had experienced a prolapse. **Conclusion:** Gynecological conditions such as prolapse of the uterus, surgery involving the pelvic floor as well as medical conditions such as diabetes mellitus are some of the key risk factors for urinary incontinence. Therefore control of these risk factors can avoid development of urinary incontinence. Bladder retraining, Kegel exercises, drinking of less fluids are some of the preventive measures to avoid development of this embarrassing condition.

Key words: Urinary incontinence, Saudi Arabia, Prolapse.

1. INTRODUCTION

Urinary incontinence is the inability of an individual to maintain bladder control. This is an embarrassing problem that normally results in the loss of self-esteem. The intensity of incontinence ranges from occasional leaks in urine when one coughs or sneezes to having an urgent and sudden urge to urinate that is strong in a manner that an individual cannot get to the toilet in good time to relieve herself (1).

Urinary incontinence is a problem that is usually associated with most gynecological conditions that have a direct impact on the bladder as well as its muscles and valves (2). Prolapse is one of the major gynecological conditions that results in urinary incontinence. The two common types of prolapse are the bladder prolapse (Cystocele) and urethral prolapse (urethrocele). Bladder prolapse occurs when the walls of the bladder presses and moves against the vaginal walls while

urethral prolapse occurs when the tissues surrounding the urethra sags down the vagina. Both conditions diminish the volume of the bladder as well as the adequate function of the bladder muscles resulting in urine incontinence (3). A research conducted by the United States national library of medicine, national institute of health on the relationship between urinary incontinence and gynecological surgery revealed that patients after gynecological surgery procedures make up 30% of all cases of urinary incontinence. According to the study, abdominal hysterectomy and reconstructive vaginal operations are the lead gynecological surgeries associated with urinary incontinence (4). Additionally, medical condition that is associated with gestation such as diabetes is pointed at as the causes of urinary incontinence. Diabetes type two results to the accumulation of unhealthy weight that pressurizes the pelvic floor leading to incontinence, thus a person with diabetes is at an increased risk of urinary incontinence (5).

2. PATIENTS AND METHODS

The study was conducted as a descriptive cross sectional study from Jan-May 2015 at Qassim University Clinic, Buraidah. All women who presented to the Qassim University Clinic for gynecological consultations were interviewed using a self-structured proforma. Women who did not consent were excluded from the study. Data was kept anonymous for privacy.

Statistical analysis

The Statistical Package for the Social Sciences 22 (SPSS 22) was used to conduct proportion z-tests to determine the association of prolapse, gynecological surgeries and diabetes with urinary incontinence. To test the hypothesis, differences between two groups on the aforementioned factors were examined. The groups included participants that reported having urinary problems ($n = 111$) and those who do not have urinary problems ($n = 100$).

3. RESULTS

Participants without urinary problems stated that they never experienced stress incontinence (SI), urgency, nocturia, frequency, urge incontinence and urinary tract infection (UTI).

Results indicated that the most frequent factor occurring to participants with urinary problems was urgency ($n = 66$, 59.46%), and the majority of participants had experienced SI ($n = 65$, 58.56%) and frequency ($n = 62$, 55.86%). Additionally, the percentage of participants that had experienced nocturia (47.75%) and urge incontinence (44.14%) were only slightly less than the overall sample of participants with urinary problems ($n = 111$). Furthermore, 25.23% of participants experienced UTI ($n = 28$),

3.1. Previous Gynecological Surgery

Proportion z-tests were conducted to determine if a significant difference in the proportion of participants with urinary problems and those without existed between participants' who have previously had a gynecological surgery and those who have not. For participants with a urinary problem, 89.19% have not had a gynecological surgery ($n = 99$) and the remaining 10.81% of participants have had a gynecological surgery ($n = 12$). For participants without a uri-

Variable	With urinary problem	
	Frequency	Percent
SI		
Yes	65	58.56
No	46	41.44
Urgency		
Yes	66	59.46
No	45	40.54
Nocturia		
Yes	53	47.75
No	58	52.25
Frequency		
Yes	62	55.86
No	49	44.14
Urge incontinence		
Yes	49	44.14
No	62	55.86
UTI		
Yes	28	25.23
No	83	74.77

Table 1. Frequency and Percent Statistics for Participants with Urinary Problems across Factors

nary problem, 97.0% have not had a gynecological surgery ($n = 97$) and the remaining 3.0% have had a gynecological surgery ($n = 3$). Displayed in Table -1 is a cross tabulation of urinary problem groups (with and without) by whether or not participants' have had a gynecological surgery.

Previous Gynecological Surgery	Group		Total
	With urinary problem	Without any urinary problem	
Yes	12	3	15
No	99	97	196
Total	111	100	211

Table 2. Cross Tabulation of Previous Gynecological Surgery and Participants with Urinary Problems and those without Urinary Problems

Results from the proportion z-tests indicated that significant differences in the frequency of urinary problems did exist between participants that have had a gynecological surgery and those who have not. That is, for participants who have had a gynecological surgery, there was a significantly ($p = 0.028$) larger proportion of participants with urinary problems ($n = 12$, 10.81%) than those without urinary problems ($n = 3$, 3.0%). However, for participants that have not had a gynecological surgery, there was a significantly

Previous Gynecological Surgery	Proportions (%)				
	With urinary problem (I)	Without any urinary problem (J)	Difference (I-J)	Z	Probability (2-tailed)
Yes	10.81	3.00	7.81	2.205	0.028
No	89.19	97.00	-7.81	-2.205	0.028

Table 3. Summary of Proportion z-Tests between Urinary Problem Groups and Previous Gynecological Surgery

larger amount of participants without urinary problems than those with urinary problems ($p = 0.028$). A summary of the proportion z-tests is displayed in Table -3.

3.2. Diabetes

Proportion z-tests were conducted to determine if a significant difference in the proportion of participants with urinary problems and those without existed between participants' who have diabetes and those that do not. For participants with a urinary problem, 72.97% did not have diabetes ($n = 81$) and the remaining 27.03% of participants did have diabetes ($n = 30$). For participants without a urinary problem, 92.0% did not have diabetes ($n = 92$) and the remaining 8.0% did report having diabetes ($n = 8$). Displayed in Table -4 is a cross tabulation of urinary problem groups (with and without) by whether or not participants' had diabetes.

Diabetes	Group		Total
	With urinary problem	Without any urinary problem	
Yes	30	8	38
No	81	92	173
Total	111	100	211

Table 4. Cross Tabulation of Diabetes and Participants with Urinal Problems and those without Urinary Problems

Results from the proportion z-tests indicated that significant differences in the frequency of urinary problems did exist between participants that have diabetes and those that do not. That is, for participants with diabetes, there was a significantly ($p < .001$) larger proportion of participants with urinary problems ($n = 30$, 27.03%) than those without urinary problems ($n = 8$, 8.0%). However, for participants that do not have diabetes, there was a significantly larger amount of participants without urinary problems than those with urinary problems ($p < .001$). A summary of the proportion z-tests is displayed in Table -5.

Diabetes	Proportions (%)			Z	Probability (2-tailed)
	With urinary problem (I)	Without any urinary problem (J)	Difference (I-J)		
Yes	27.03	8.00	19.03	3.591	<0.001
No	72.97	92.00	-19.03	-3.591	<0.001

Table 5. Summary of Proportion z-Tests between Urinary Problem Groups and Diabetes

3.3. Prolapse

Proportion z-tests were conducted to determine if a significant difference in the proportion of participants with urinary problems and those without existed between participants' that have experienced a prolapse and those that have not. For participants with a urinary problem, 91.89% had not experienced a prolapse ($n = 102$) and the remaining 8.11% of participants had experienced a prolapse ($n = 9$). For participants without a urinary problem, 98.0% have

Prolapse	Group		Total
	With urinary problem	Without any urinary problem	
Yes	9	2	11
No	102	98	200
Total	111	100	211

Table 6. Cross Tabulation of Prolapse and Participants with Urinary Problems and those without Urinary Problems

not experienced a prolapse ($n = 98$) and the remaining two participants had experienced a prolapse. Displayed in Table -6 is a cross tabulation of urinary problem groups (with and without) by whether or not participants' had diabetes.

Results from the proportion z-tests indicated that significant differences in the frequency of urinary problems did exist between participants that have experienced a prolapse and those that have not. That is, for participants that have experienced a prolapse, there was a significantly ($p = 0.047$) larger proportion of participants with urinary problems ($n = 9$, 8.11%) than those without urinary problems ($n = 2$, 2.0%). However, for participants that have not experienced a prolapse, there was a significantly larger amount of participants without urinary problems than those with urinary problems ($p = 0.047$). A summary of the proportion z-tests is displayed in Table -7.

Prolapse	Proportions (%)			Z	Probability (2-tailed)
	With urinary problem (I)	Without any urinary problem (J)	Difference (I-J)		
Yes	8.11	2.00	6.11	1.993	0.047
No	91.89	98.00	-6.11	-1.993	0.047

Table 7. Summary of Proportion z-Tests between Urinary Problem Groups and Prolapse

4. DISCUSSION

Urinary incontinence is classified into four main types as; stress incontinence, urge incontinence, mixed incontinence, and overflow incontinence. The common etiologies of urinary incontinence are urinary tract infection, abnormal growths such as polyps as well as other conditions associated with the pelvic support problem. According to the data presented in the results section, it is evident that a number of gynecological conditions are associated with urinary incontinence, in relation to diabetes mellitus; it is evident from the research that Diabetes mellitus increases the risk of development of urinary incontinence (6). This is because diabetes leads to neuropathies that weaken the muscles of the pelvic floor thus resulting in the inability of these muscles to control effectively urine in the bladder (7). Nevertheless, the results indicate that both prolapse of pelvic organs and previous gynecological surgeries have increased chances of association to urinary incontinence. Owing to the statistics of women who had urinary incontinence, vaginal wall prolapse predisposes to urinary intolerance (8). Gartland stated that in contrary to gynecological surgeries obstetrical surgery (cesarean section) does not carry an increased risk for development of urinary incontinence as compared to vaginal delivery at 4 years postpartum with an adjusted odds ratio of 0.4, 95% confidence interval 0.3-0.6 (9). Additionally, medical conditions associated with gynecological conditions like diabetes mellitus increases the risk of development of urinary incontinence, Hoelzler & Lidbetter (10).

5. CONCLUSION

Gynecological conditions such as prolapse of the uterus, surgery involving the pelvic floor as well as medical conditions such as diabetes mellitus are

some of the key causes of urinary incontinence, (11). Being an embarrassing condition that has a psychological implication, urinary incontinence can be managed medical as well as surgically, as a means of restoring the functionality of the bladder as well as the esteem of the patient. Additionally, other non-medical processes such as bladder training, which encompasses urinating at a normal interval, weight loss, drinking of less fluids as well as physical exercise like the Kegel exercise can be employed in the management of urinary incontinence, Fong (12).

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