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Assessing Women's Knowledge and Practice Regarding Urinary Incontinence and Pelvic Floor Muscles Exercises

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Abstract

Background: Urinary incontinence is a serious problem that deteriorate women's life at any age specially if neglected. However, there are many actions to solve this problem the most important is pelvic floor muscles exercises which is registered as an effective method for improving urinary function. **Aim:** The study aimed to evaluate women's knowledge and practice regarding urinary incontinence and pelvic floor muscles exercises. **Study design:** A descriptive design was used in this study. **Setting:** The study was conducted at outpatient clinics of Aga central hospital, Dakahlia Government, Egypt. **Sample:** A purposive sample technique was used to select 177 women. **Tools:** A structured interviewing questionnaire was used for data collection; It contained four parts: **Part I:** Women's socio-demographic characteristics. **Part II**: women's medical history. **Part III:** Women's knowledge regarding urinary incontinence and pelvic floor muscle exercises. **IV:** Women's practice regarding pelvic floor muscle exercises. **Results:** The study results revealed that, 40.2% of women had poor level of knowledge about urinary incontinence and 64.1% of them had poor knowledge about pelvic floor muscles exercises. Regarding women practice about (kigel 60.2%, squat 87.4%, bridge 71.3%, tabletop 81.1%, bird-dog 66.7%) was unsatisfactory. **Conclusions:** Studied women have poor level of knowledge regarding urinary incontinence and pelvic floor exercises. Also, they had unsatisfied reported practice regarding pelvic floor muscles exercises for Kigel, squat, bridge, tabletop, and bird-dog exercises so an educational program for improving women's knowledge and practice regarding urinary incontinence and pelvic floor exercises is recommended.

Recommendations: This study recommended implementation of education programs to improve women's knowledge, practice about urinary incontinence and pelvic floor muscles exercises.

Key words: *Urinary incontinence, Pelvic floor muscles exercises.*

Introduction

Urinary incontinence (UI) is an urgent complaint threatening women's life all over the world. UI affects more than one third of women which is bound to elevate in old age to reach more than half

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of them due to nerve deterioration, decreased bladder efficiency or chronic diseases as diabetes, hypertension or disabilities. **Fauzey et al., (2021)** study revealed that 15% of women worldwide have urinary incontinence problem, and showed simultaneous sedentary habits. The overall prevalence of stress, urge, and mixed incontinence was 5.4%, 11.3%, and 7.0% among studied women. In contrast, the stress urinary incontinence (SUI) type among women was prevalently high, which is 80%, followed by mixed urinary incontinence (MUI) with 16%, and the least was urge urinary incontinence (UUI) with 4%. Women tend to get UI in their childbearing years, either during pregnancy or postnatal and in menopause women.

The most common type of UI is stress, urgency, mixed, functional, and neurological. Stress UI is defined as involuntary loss of urine while doing effort, coughing, or sneezing**.** Urgency is sudden urination while desiring to evacuate bladder before reaching toilet. Mixed is complain of dropping urine with exertion as well as unable to delay urination for few times. Functional is leakage associated with body system deterioration as urinary system defect. Neurological is cognitive disabilities or diseases **(Burgio et al., 2019)**.

The incidence of UI increases with age and it is more frequent in women, commonly amongst elderly women in residential care. Childbirth, smoking, chronic bronchitis, and obesity also act as risks factors. Estimates of the prevalence of urinary incontinence in women vary from 10% up to 40%. Irrespective of old age, 15% to 30% of women are influenced by urinary incontinence in all aspects of their lives; physical, mental and social with ensuing weakening in personal satisfaction (**Islam et al., 2018)**.

UI diagnosis is through combination of data acquired from personal and family history, signs & symptom, risk factors and physical examination. Laboratory results screening for determining presence of urinary tract infection, high level of blood creatinine, urea or acetone are indicators of kidney diseases. The etiology of the SUI is not entirely clear, but the injuries that occur in the pelvic floor during pregnancy and childbirth are suggested as the main risk factor. Although SUI is a common problem, the estimates of its prevalence obtained through epidemiological studies vary considerably and may be between 3.6% and 15% before pregnancy and 28% to 64% during pregnancy **(Bezerra et al., 2016).**

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Prevention of urinary incontinence focus on urinary system related functions include periodic assessment, raising women awareness about the complications of this problem through continues education and application of programs their goals are improving women's knowledge and practice regarding control of UI **(Sujindra et al., 2019).**

Pelvic Floor Muscle Training (PFMT) is recommended as a first-line treatment to decrease incontinence levels, PFMT may contribute to increased physical activity and better QoL. The pelvic floor muscles play an important role in the maintenance of continence. This is why impaired pelvic floor muscle function, due to fibrosis and nerve damage, following radiotherapy treatment may contribute to UI **(Horst et al., 2017).**

Community health nurses (CHN) play a vital role in prevention and treatment of UI through educating women about healthy ways to avoid UI as maintaining healthy lifestyle, healthy food consumption and seeking medical help while condition uncontrolled. The nurse should investigate urinary symptoms, since many women do not report their complaints because they believe that the loss of urine is normal and transient. CHN as health professionals should encourage women to adopt and maintain healthy living standards. Therefore, the nurse has a prominent role in the multidisciplinary team, acting as a catalyst element of the changes necessary for better quality of life of women. An exercise program for the pelvic floor muscles can teach women the function of these muscles as a control mechanism for urinary continence. Prenatal consultation, assessment of the strength of the pelvic floor muscles, questioning about the loss of urine, and training about PFME increase strength and muscle resistance help support the bladder and urethral closure **(Frawley et al., 2017).**

Significance of the study

In Egypt, half of Egyptian women had UI **(Central Agency for Public Mobilization and Statistics (CAPMAS), (2021):**. This may due to not seeking medical help. Although UI has become a medical issue with high incidence level, relatively few sufferers seek medical help due to feeling of embarrassment. Due to neglection of symptoms this problem is still underestimated. **Elserafy et al., 2019** study which was conducted in Egypt revealed that prevalence of UI among the studied women was 67%. The prevalence of mixed, stress, and urgency UI was 31 %, 27 %, and 9 %, respectively. Its severity among the studied women ranged from slight (11%) moderate (55.5%), severe (30.1%), and

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very severe (3.4%). The mean age was significantly higher among the incontinent group (67.55 ± 7.12). There was a significant association between UI and diabetes mellitus, hypertension, and urinary tract infection (odds ratio = 20.44, 13.63, 6.07, respectively). Obesity and constipation were significantly associated with stress incontinence and mixed incontinence. Lack of adherence to a guided program to improve women's knowledge and practice regarding urinary incontinence and pelvic floor muscles exercises cause UI more complicated so the current study recommends application of educational program.

Aim of the study

The aim of this study is to assess women's knowledge and practice about urinary incontinence and pelvic floor muscles exercises.

Research question

1. What are women's knowledge regarding urinary incontinence and pelvic floor muscles exercises?
2. What are women's reported practices regarding urinary incontinence and pelvic floor muscles exercises?

Subjects and methods

Subjects and methods for this study are presented under four main items:

Research design:

A descriptive design was used in this study.

Research setting:

The study has been carried out in five outpatient clinics of Aga central hospital, Dakahlia Government, Egypt, which compromise (obstetric, chest, medical, surgical, and urology clinics).

Subjects:

A purposive sample was used to select 177 women for this study.

Sampling technique:

Women were selected based on inclusion criteria as complaining from urinary incontinence due to stress or urge or mixed, and not receiving treatment for urinary incontinence. The study sample consisted of 195 women and after exclusion of 10% (18) women who were in the pilot study, the final sample become 177 women who attended to the above-mentioned outpatient clinics and met the inclusion criteria.

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Tools for data collection:

Two tools were used for data collection in this study:

1st tool is a structured interviewing questionnaire: It was developed by the researchers after reviewing the national and international related literature. It contained the following four parts:

Part I: Women's socio-demographic characteristics as age, place of residence, level of education, occupation, and marital status. It is composed of 7 closed ended questions (Q1 – Q7).

Part II: **Women's present medical history** as: Family medical history, subject's medical, surgical, pharmacological, reproductive history. It is composed of 10 closed ended questions and 2 open questions (Q8 – Q19).

Part III: Women's knowledge regarding:

A) Urinary incontinence as: Meaning, causes, risk factors, symptoms, types, ways of overcoming urinary incontinence, prevention and treatment of urinary incontinence. It is composed of 8 closed ended questions (Q 20- Q27).

B) Pelvic floor muscle exercises (PFME) as: Meaning, importance, types, uses, contraindications, suitable times for practicing pelvic floor muscle exercises and source of knowledge about PFME. It composed of 7 closed ended questions (Q 28- Q34).

Scoring system for knowledge items: Complete answer was scored as 2 points; incomplete answer was scored as 1 point and wrong answer or don't know was scored zero. Total scores were 30 points for 15 items.

The scores for each item were summed up and converted into percentage score as following:

Poor knowledge 0- < 50 % (< 15)

Fair knowledge 50- < 75% (15- 22)

Good knowledge ≥ 75% (23- 30)

Part IV: Women's reported practice regarding: Kegels, squats, bridge, split tabletop, and bird dog pelvic floor muscle exercise as: Before each exercise evacuate bladder, identify the correct muscles of the pelvic floor after urination. For Kegles exercises: Assessing women reported practice regarding: Discover of pelvic floor muscles, stretching and relaxing of pelvic muscles. For squat exercises: Standing straight, flection and extension of knees. For bridge exercises: Stay in flat position, raising leg with knee at angle 90, arms and foot on floor. For tabletop exercises: Flat position with knee flexed, legs straight and parallel with the back. For bird dog exercise: Sitting on knees and hands, shoulders parallel to legs, right arm forward with left leg back and the opposite is the same. It composed of 40 closed questions.

Scoring system for reported practice items: Scores ranged from (Yes= 1, No= 0). Total scores were 40 points for 40 items.

The scores of each item were summed up and converted into percentage score as following:

Unsatisfactory practice= < 75% (< 30 points)

Satisfactory practice= ≥ 75% (30-40 points)

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Validity:

The validity of the tool was tested through a panel of 5 experts of Community Health Nursing staff from Faculty of Nursing at Helwan University to review relevance of the items of the tool for comprehensiveness, understanding, and applicability.

Reliability:

Reliability of the tools were tested to determine the extent to which the items related to each other. Test- re- test reliability for knowledge was (0.82) using Cronbach's Alpha for reported practice and efficiency of urinary system reliability was 0.890.

Pilot study:

The pilot study has been conducted to test the clarity, applicability, and understandability of the tools. It has been conducted on 10% of women (18). Women had been selected from settings similar to those chosen for the study. The result of the pilot helped in refining the interview questionnaire and to schedule the time framework. Based on these results, simple modifications were done so subjects included in the pilot study were excluded from the main study sample.

Filed work:

Before conducting the study, permission was obtained from the director of Aga central hospital to carry out the study.

The researchers met the women, and the aim of the study was explained. Their verbal and written consents were secured before collecting data.

Preparatory phase:

It included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee, Faculty of Nursing, Helwan University. Participation in the study was voluntary and subjects had been given complete full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information was maintained. Ethics, values, culture and beliefs were respected.

Statistical analysis:

Data collected from the studied women was revised, coded, and entered using Personal Computer (PC). Computerized data entry was used and Statistical Package for the Social Science (SPSS), version 24 was used to deal with collected data. Data were represented using descriptive

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statistics in the form of frequencies, percentage, mean ± standard deviation (± SD), chi-square test (x^2) was used for comparison between qualitative variables. Paired (t) test was used to determine strength and direction of association between ranked variables. The p-value is the degree of significance and the probability that an observed difference is due to chance and not a true difference. When p-value ≤ 0.05 it is considered statistically significant level, and when p-value was ≤ 0.001 it is considered highly statistically significant.

Results:

Part I: Table (1 & figure1)

Table (1): Distribution of studied women regarding socio-demographic characteristics (n=177).

Characteristics	Study group N=177		x^2
	No	%	
Age (year)			
18-35	119	67.2	51.881
36-53	11	6.2	
54 and more	47	26.6	
Mean± SD 18.932±.88135			
Place of residence			
Rural	140	79.1	193.909
Urban	37	20.9	
Level of education			
can't read or write	28	15.8	243.153
Read and write	46	26.1	
Primary	48	27.1	
Preparatory	32	18.1	
Secondary	13	7.3	
University	10	5.6	
Occupation			
Worked	82	46.3	27.130
Housewife	95	53.7	
Marital status			
Married	92	52.0	24.960
Widow	38	21.5	
Single	30	16.9	
Divorced	17	9.6	
Family monthly income			
Enough	94	53.1	127.746
Not enough	37	20.9	
Enough and save	46	26.0	
Crowding index			
< 1	111	62.7	66.994
1-2	56	31.7	
>2	10	5.6	

Table (1) shows that the mean age of the women was 18.932±.88135 years. 79.1% of study group their place of residence was rural where 20.9% were urban. Regarding level of education 46.3% of women have preparatory education. 53.7% of study group were housewife. In relation to

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marital status 52.0% of study group were married. On the other hand, 53.1% of study group reported that their monthly income was enough.

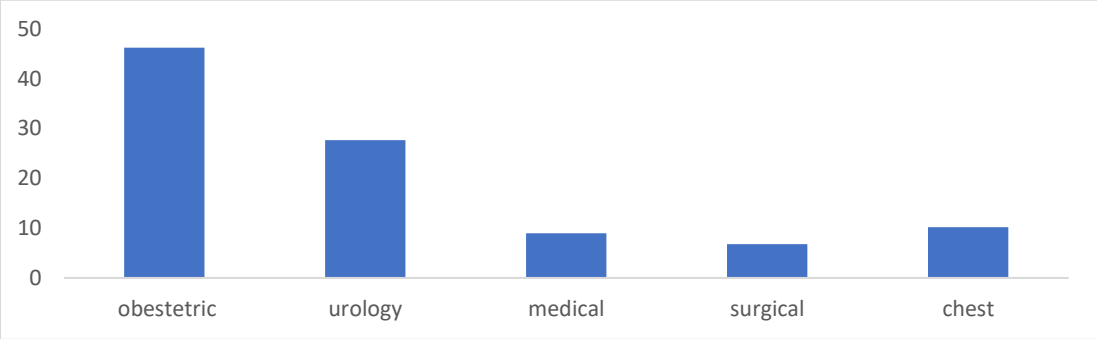

Figure (1): Distribution of studied women in the selected clinics

Figure (1): Reflects that 27.7% of women attended urology clinic and 10.2% attended chest clinic, where 46.3% attended obstetric clinic in which 6.8% of them attended surgical clinic.

Part II: Tables (2 &3)

Table (2): Distribution of studied women regarding family and medical history (n=177).

History	No	%	x^2
Family history			
Any member in the family complains of urinary incontinence?			182.249
Yes	140	79.1	
No	37	20.9	
Family members who complain of chronic disease?			
Yes	127	71.8	322.723
No	50	28.2	
Personal history			
Medical history			
Type of chronic disease of subjects (N= 90)			
Diabetic	30	16.9	233.825
Chest disease	28	15.8	
Heart disease	22	12.4	
Uterus prolapse	10	5.6	
Surgical history of subjects			
Operation type (N= 94)			
Cesarean section	49	27.7	388.475
Appendectomy	12	6.8	
Bone fixation	7	4.0	
Oophorectomy	11	6.2	
Partial hysterectomy	15	8.5	
Pharmacological history of subjects			
Drug intake			
Estrogen	47	26.6	
(Diuretics, insulin, anti-hypertensive drugs)	82	46.3	116.486
No response	48	27.1	

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Table (2) presents that 79.1% of women had family history of urinary incontinence. According to medical history, 50.8% complained from chronic diseases, diabetic affects 16.9% of them. And 27.7% had caesarian section. Regarding to drug intake 26.6% of study group took estrogen, where 46.3% took other drugs as diuretics, insulin, or anti-hypertensive drugs.

Table (3): Distribution of studied women regarding their gynecological history (n=177).

Gynecological history	Study group N=177		x^2
	No	%	
Age at marriage(N=147)			323.424
13-16	57	32.2	
17-20	38	21.5	
21-23	52	29.4	
Mean± SD 15.729±.353			
Pregnant			23.910
Yes	80	45.2	
No	97	54.8	
Gestational age (N=80)			1277.130
1-3	39	22.0	
4-6	26	14.7	
7-9	15	8.5	
Number of previous births (N= 147)			322.299
1-3	63	35.6	
4-6	37	20.9	
7-10	47	26.6	
Type of delivery (N= 147)			175.237
Normal	58	32.8	
Caesarian	73	41.2	
Both together	16	9.0	

Table (3): The mean age of marriage was 15.729±.353 6 for study. 45.2% were pregnant. Regarding gestational age 22.0% were in first trimester. According to number of previous births 35.6% of women stated that they had one to three births. Regarding to type of delivery 41.2% of them had caesarian section.

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Table (4): Distribution of studied women according to their knowledge regarding urinary incontinence (N =177).

Knowledge about urinary incontinence	No	%	x^2
Meaning of urinary incontinence			202.473
Complete correct answer	34	19.2	
Incomplete answer	56	31.6	
Don't know	87	49.2	
Causes of urinary incontinence			92.422
Complete correct answer	22	12.4	
Incomplete answer	87	49.2	
Don't know	68	38.4	
Risk factors of urinary incontinence			376.733
Complete correct answer	33	18.6	
Incomplete answer	112	63.3	
Don't know	32	18.1	
Symptoms of urinary incontinence			441.165
Complete correct answer	79	44.6	
Incomplete answer	98	55.4	
Don't know	0.0	0.0	
Types of urinary incontinence			144.051
Complete correct answer	66	37.3	
Incomplete answer	93	52.5	
Don't know	18	10.2	
Ways of overcoming urinary incontinence			1050.781
Complete correct answer	91	51.4	
Incomplete answer	0.0	0.0	
Don't know	86	48.6	
Prevention of urinary incontinence			923.710
Complete correct answer	14	7.9	
Incomplete answer	91	51.4	
Don't know	72	40.7	
Treatment of urinary incontinence			1032.198
Complete correct answer	30	16.9	
Incomplete answer	60	33.9	
Don't know	80	45.2	

Table (4): Shows that 19.2% of women stated the meaning of urinary incontinence as complete correct answer, 49.2% enumerate causes of urinary incontinence incompletely, where 12.4 % of them enumerated causes correctly, 63.3% of them incompletely identify risk factors of urinary incontinence.

Part III: Tables (5 & 6):

Table (5): Distribution of studied women according to their level of knowledge regarding pelvic floor muscles (No=1

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Knowledge about pelvic floor muscles exercises	No	%	x^2
Meaning of pelvic floor muscles exercises			148.611
Complete correct answer	42	23.9	
Incomplete answer	61	34.6	
Don't know	74	41.5	
Importance of pelvic floor muscles exercises			787.740
Complete correct answer	0.0	0.00	
Incomplete answer	96	54.2	
Don't know	81	45.8	
Types of pelvic floor muscles exercises			368.015
Complete correct answer	86	38.4	
Incomplete answer	31	17.5	
Don't know	78	44.1	
Uses of pelvic floor muscles exercises			602.031
Complete correct answer	62	35.0	
Incomplete answer	12	6.8	
Don't know	103	58.2	
Contraindication of performing pelvic floor muscles exercise			373.160
Complete correct answer	74	41.8	
Incomplete answer	17	9.6	
Don't know	86	48.6	
Times when exercises practiced			926.036
Complete correct answer	45	25.5	
Incomplete answer	33	18.6	
Don't know	99	55.9	

Table (5): Shows that 23.9% of women stated the meaning of pelvic floor muscles exercise as correct and complete. Whereas, 41.8% of them mentioned the contraindications of pelvic floor muscles exercise correctly and complete, and 38.4 % mentioned types of pelvic floor muscles exercises correct and complete.

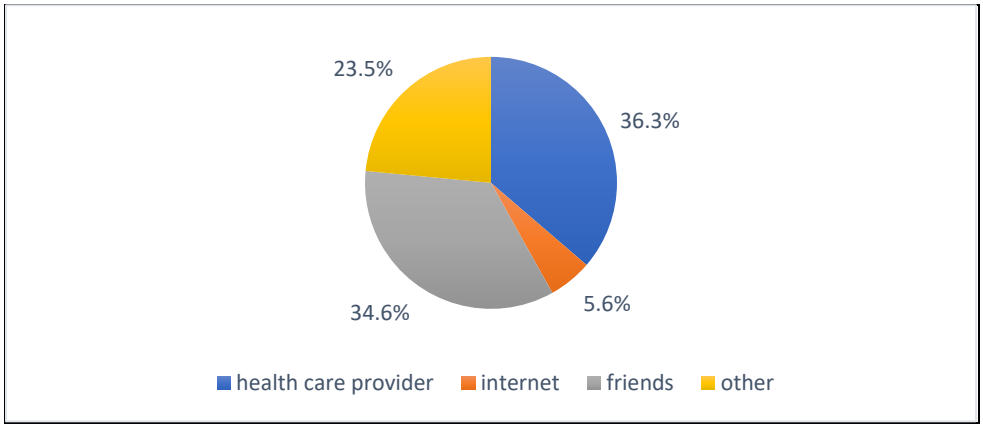

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Figure (2): Distribution of women according to their sources of knowledge about pelvic floor muscles exercises (No=177).

Figure (2) shows that slightly more than third of studied women had their source of knowledge about urinary incontinence and pelvic floor muscles exercises from health care providers.

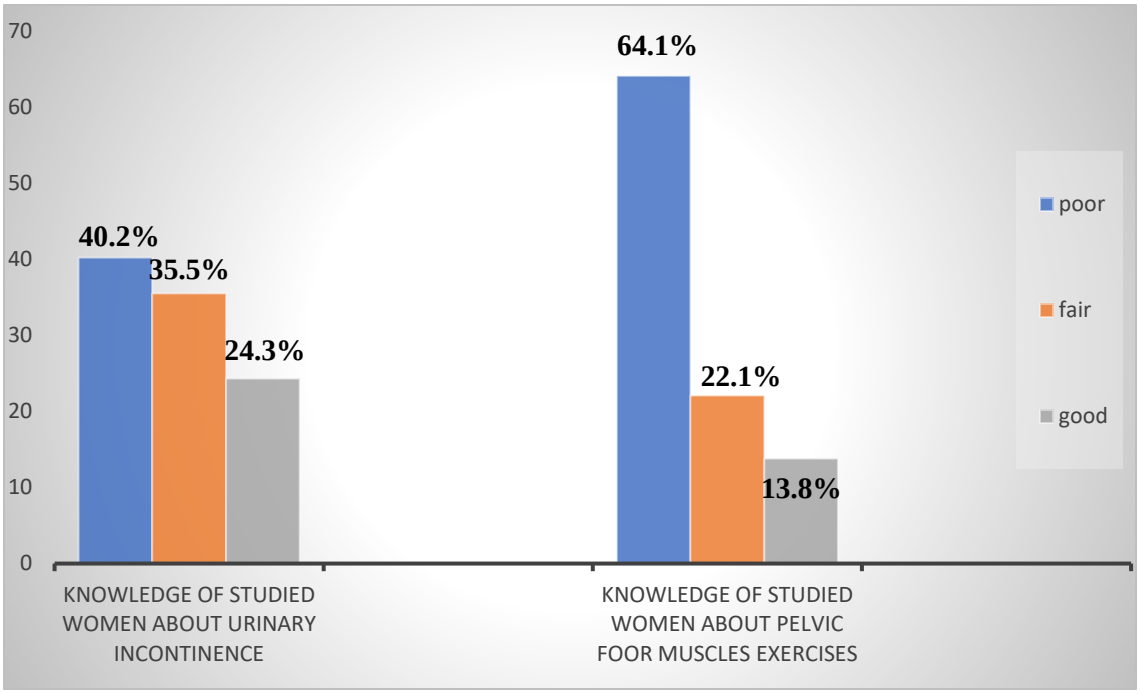

Figure (3): Displays studied women total knowledge regarding urinary incontinence, 24.3% of women had good level where, 40.2% of them had poor level of knowledge where, total knowledge regarding pelvic floor muscles exercises were 13.8% of women had good level where, 64.1% of them had poor level of knowledge.

<u>Part IV</u>: Tables (6,7,8)

Table (6): Distribution of studied women concerning reported practice regarding pelvic floor muscles exercise (Kigel) (No=177).

Practice items	Not done		Done		x^2
	N	%	N	%	
Kigle exercises					
Do exercise standing, setting, or flat	94	53.1	83	46.9	633.229
Knee flection	131	74.0	46	26.0	226.570
Gluteal relaxation	119	67.2	58	32.8	524.092
Stretch and hold pelvic muscles	120	67.8	57	32.2	618.595
Inward and upward tension of pelvic muscle	96	54.2	81	45.8	764.880
Evaluate tone of pelvic muscles extension	89	50.3	88	49.7	14.840
Avoid abdominal tension or bearing glutes during the exercise	102	57.6	75	42.4	675.160
Hold pelvic muscles 3-6 sec at first exercise and relax 10 sec	91	51.4	86	48.6	385.489
Repeat 10-20 extension, 3-4 ex per day perfectly	110	62.1	67	37.9	755.221

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Table (6): Illustrates that 37.9% of women perform and repeated procedure 3-4 times per day. This reflects unsatisfied practice.

Table (7): Distribution of studied women concerning reported practice regarding pelvic floor muscles exercise (squat) (No=177).

Practice items	Not done		Done		x^2
	N	%	N	%	
Squat exercise					
Do exercise in standing position	117	66.1	60	33.9	633.229
Feet wide	88	49.7	89	50.3	226.570
Flat toes	110	62.1	67	37.9	524.092
Knees bended and thigh with back downward	85	48.0	92	52.0	618.595
Chain forward and neck straight	105	59.3	72	40.7	764.880
Wide the bended knees outward	89	50.3	88	49.7	14.840
Hold knees inward and straight your body	102	57.6	75	42.4	675.160
Bend knees 15 times per exercise	97	54.8	80	45.2	385.489
Repeat 2-3 exercise per day perfectly	120	87.8	57	32.2	755.221

Table (7): Presents that 32.2% of women performed and repeated 2-3 exercises per day. This reflects unsatisfied practice.

Table (8): Distribution of studied women concerning reported practice regarding pelvic floor muscles exercise (bridge) (No=177).

Practice items	Not done		Done		x^2
	N	%	N	%	
Bridge exercise					
Do exercise in flat position	110	62.1	67	37.9	350.160
Bend knees with angle 90	89	50.3	88	49.7	264.511
Hands and feet on floor	103	58.2	74	41.8	191.532
Elevation of leg, thigh, and glutes upward	98	55.4	79	44.6	1.471
Stay elevated for 30-60 sec	127	71.8	50	28.2	412.466
Downward with body straight on the floor	108	61.0	69	39.0	403.063
Repeat 10-15 elevation for 2-3 exercise per day perfectly	93	52.5	84	47.5	644.784

Table (8): Shows that 47.5 % of women performed and repeated 2-3 exercises per day. This reflects unsatisfied practice.

Table (9): Distribution of studied women concerning reported practice regarding pelvic floor muscles exercise (tabletop) (No=177).

Practice items	Not done		Done		x^2
	N	%	N	%	
Tabletop exercise					
Do exercise in flat position	138	78.0	39	22.0	.104
Bend knee with thigh straight	161	91.0	16	9.0	61.410
Inward and outward movement of bended knees	71	40.1	106	59.9	71.919
Rest bended knees on the floor	120	67.8	57	32.2	14.117
Return to the first position	76	42.9	101	57.1	52.764

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Repeat 10-15 flection and extension, one exercise per day perfectly	119	67.2	58	32.8	9.691

Table (9): shows that 32.8 % of women performed and repeated 2-3 exercises per day. This reflects unsatisfied practice.

Table (10): Distribution of studied women concerning reported practice regarding pelvic floor muscles exercise (bird-dog) (No=177).

Practice items	Not done		Done		x^2
	N	%	N	%	
Bird-dog exercise					
Sit on the two knees	108	61.0	69	39.0	350.160
Arms Parel to hip bone	85	48.0	92	52.0	264.511
Back and neck straight	158	89.3	19	10.7	191.532
Push the right hand forward and left leg backward	120	67.8	57	32.2	1.471
Relax 2 sec	96	54.2	81	45.8	412.466
Push the left hand forward and right leg backward	89	50.3	88	49.7	403.063
Repeat 10-15 elevation for 2-3 exercise per day perfectly	102	57.6	75	42.4	644.784

Table (10): shows that 42.4 % of women performed and repeated 2-3 exercises per day. This reflects unsatisfied practice.

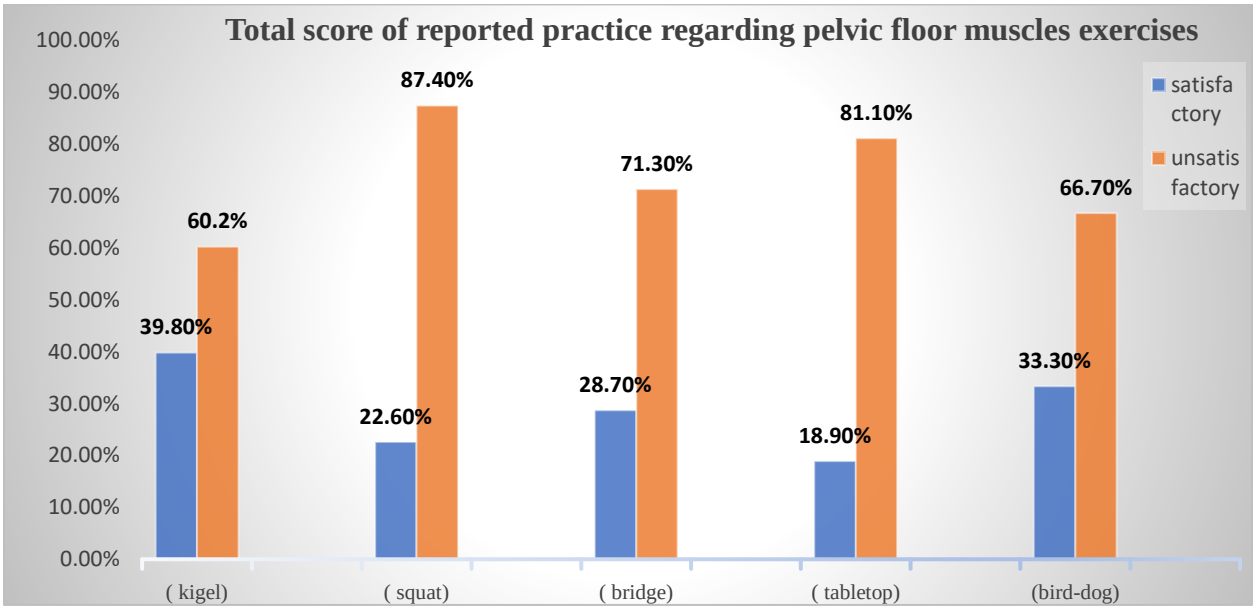

Figure (4) presents total scores of studied women about reported practice regarding pelvic floor muscles exercises was unsatisfied (Kigel 60.2%, squat 87.4%, bridge 71.3%, tabletop 81.1%, bird-dog 66.7%).

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Discussion

Female Urinary incontinence (UI) is a major public health problem, due to its' high prevalence and the physical, psychological and social impact on the lives of women. PFMT (pelvic floor muscle training) are effective strategies both in prevention and treatment of UI during prenatal care. When used in conjunction with cognitive and behavioral strategies, these approaches, are likely to produce the greatest potential results. Behavioral, cognitive and social strategies all showed positive effects in the treatment and prevention of urinary incontinence **Nathan et al., (2017).**

Regarding to demographic characteristics of the present study the mean age of studied women was 18.932± 0.881. This is in contrast with a study by **Khatun et al., (2021)** in Dhaka, Bangladesh about "Effect of Maximum Repetition of Pelvic Floor Stabilization Exercise in Stress Urinary Incontinence." who found that mean age of participants was 48.32±12.04 years, with the minimum age 30 years and maximum 75 years.

Concerning place of residence, the current study indicated that more than three quarter of studied women their place of residence was rural, half of them had preparatory education with enough income. More than half of studied women were married and were housewives. This is in the same line with **Mahmoud et al., 2018** who conducted a study in Egypt about "Women's Knowledge Regarding pelvic Organ Prolapse". they indicated that 79.1 % of studied women were married and from rural area 54.5%, their income wasn't enough, 48.2% were illiterate and almost three quarters of them (73.6%) were housewives.

Regarding gynecological history, the current study stated that one third of studied women had one to three pregnancies and had normal deliveries. About half of them had cesarean section delivery. This is in agreement with **Khatun et al., (2021)** study who stated that more than half of the studied women (52.7% and 50.5% respectively) had from one to three pregnancies and had 1-3 normal deliveries. While slightly more than three quarters of the studied women (75.9%) didn't have a history of C.S delivery and slightly more than four fifths (82.2%) didn't have a history of vaginal delivery.

Regarding sources of knowledge about pelvic floor muscles exercises, the current study shows that slightly more than one third of studied women had their source of knowledge about pelvic floor muscles exercises from health care providers. This is in agreement with **Okeke H., et al (2020)** who conducted a study in Nigeria about "Knowledge and practice of pelvic floor muscle exercises among pregnant women in Enugu metropolis, Nigeria". They stated that the majority (74.3%) of women said they have heard of PFME. However, not all (71.0%) said they have actually been taught PFME.

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Regarding studied women total knowledge about urinary incontinence, the current study indicated that 24.3% of women had good level of knowledge where, 40.2% of them had poor level of knowledge. Regarding total knowledge about pelvic floor muscles exercises, 13.8% of women had good level of knowledge, where, 64.1% of them had poor level of knowledge. This is in contrast with **Monica et al., (2017)** who conducted a study in Santiago, about "Factors influencing long-term adherence to pelvic floor exercises in women with urinary incontinence". About three quarters of study group had good level of knowledge where only 37.0% had poor knowledge of pelvic floor exercises.

Regarding studied women reported practice, the present study indicated that total score of studied women reported practice regarding pelvic floor muscles exercises was unsatisfied for Kigel 60.2%, squat 87.4%, bridge 71.3%, tabletop 81.1%, and bird-dog 66.7% exercises. This is in agreement with **Okeke H., et al (2020)** study which reflected that only 38.37% of women actually practiced the PFMEs as recommended by the physiotherapist.

Conclusion:

Based on the present study and findings it can be concluded that:

The current study presented that studied women have poor level of knowledge regarding urinary incontinence and pelvic floor exercises. Also, they had unsatisfied reported practice regarding pelvic floor muscles exercises for Kigel, squat, bridge, tabletop, and bird-dog exercises so an educational program for improving women's knowledge and practice regarding urinary incontinence and pelvic floor exercises is recommended.

Recommendations:

In the light of the findings of this study, the following points are recommended:

- Educational programs for women about different types of pelvic floor muscles exercises to alleviate pelvic floor disorders and decrease urinary incontinence.

Recommendation for future research:

- Ongoing research is required to study the neglected behavior toward urinary incontinence which affect women quality of life.
- Disseminating health education booklet to promote women's awareness about urinary incontinence and importance of pelvic floor muscles exercises.

References

1. **Bezerra, Rocha, Vasconcelos & Oliveira, 2016**. Online Brazilian Journal of Nursing, vol. 15, núm. 1, 2016, pp. 1-10 Universidade Federal Fluminense Rio de Janeiro, Brasil Available in: http://www.redalyc.org/articulo.oa?id=361453977008.
2. **Botros, C., Dalalo, N., Iyer, S., Lozo, S., Botros, S., Tomezsko, J., ... & Sand, P. K. (2017).** Prevalence of urinary incontinence symptoms: Looking beyond stress& urgency urinary incontinence. International Urogynecology Journal, 28, 163-164.
3. **Burgio, K. L., Robinson, J. C., & Engel, B. T. (2019).** The role of biofeedback in Kegel exercise training for stress urinary incontinence. American Journal of Obstetrics and Gynecology, 154(1), 58-64.
4. **Central Agency for Public Mobilization and Statistics (CAPMAS), (2021):** Population statistics and health issues in Egypt: Available at www.capmas.gov.eg. Access at: September, 2019.
5. **Fauzey, Nusee, Hassan & Nusee. (2021).** UNDERSTANDING URINARY INCONTINENCE AND PELVIC FLOOR MUSCLE TRAINING AMONG CHILDBEARING WOMEN. International Journal for Studies on Children, Women, Elderly and Disabled, Vol. 12, (Jan) ISSN 0128-309X. Malaysia, Email: fairuzfauzey@gmail.com
6. **Frawley, H. C., Haylen, B. T., Abramov, Y., Almeida, F. G., Berghmans, B., ... & Wells, A. (2017).** An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for the conservative and nonpharmacological management of female pelvic floor dysfunction. International urogynecology journal, 28(2), 191-213.
7. **Horst, W., Valle, J., Silva, J., & Gascho, C. (2017).** Pelvic organ prolapses: prevalence and risk factors in a Brazilian population. International Urogynecology Journal, 28(8), 1165-1170.
8. **Islam, R. M., Bell, R. J., Hossain, M. B., & Davis, S. R. (2018).** Types of urinary incontinence in Bangladeshi women at midlife: Prevalence and risk factors. Maturitas, 116, 18–23.
9. **Mahmoud, Fadel& El-Nemer (2018).** WOMEN'S KNOWLEDGE REGARDING PELVIC ORGAN PROLAPSE. Mansoura Nursing Journal (MNJ) vol.5, Special Issue - 2018 Nursing, Faculty of Nursing, Mansoura University, Egypt. E.mail address : 4498@yahoo.com
10. **Monica, Bernadita, Romina. (2020).** Factors influencing long term adherence to pelvic floor exercises in women with urinary incontinence. Neurol Urodyn 7 (1):1120–1127. monvenegas@gmail.com

11. **Nathan, G., Varghese, L., & Kanmani, J. (2017).** Effectiveness of STP on Knowledge Regarding Preventive Measures of Uterine Prolapse among Mothers. Journal of Clinical and Diagnostic Research, 11(12), 5-8.
12. **Okeke, Ifediora, and Christian. (2020).** Knowledge and Practice of Pelvic Floor Muscle Exercises Among Pregnant Women in Enugu Metropolis, Nigeria Humphrey Ogungbe3Women's Health Reports Volume 1.1, 2020 DOI: 10.1089/whr.2020.0030.
13. **Sujindra E, Buthapy A, Sugennya A, Draveena R.** (**2019).** Attitude and practice of exercise during pregnancy among antenatal others. Int J Educ Psychol; 1:234–237.
14. **Elserafy. F, Shahen. N, Khalil. N, Abdelrahman. (2019).** Urinary incontinence among elderly women attending a rural family health center in Gharbiya Governorate, Egypt. | Volume: 32 | Issue: 3 | Page: 955-960. Menoufia Med J 32:955-60 **http://www.mmj.eg.net/text.asp?2019/32/3/955/268832.**