Prevalence and the degree of distress of pelvic floor disorders symptoms in women seeking primary health care at Ismailia governorate, Egypt

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Abstract

Pelvic Floor Disorders (PFDs) are common debilitating conditions among women worldwide, which have had a negative effect on women's quality of life and can be particularly bothersome. The objective of this study was to assess the prevalence of PFDs and the degree of bother of PFDs symptoms among women seeking primary health care. A cross sectional study was conducted in primary health care settings affiliated with Ministry Of Health and Population (MOHP) in Ismailia city, Egypt. The study was carried out from October 2019 to May 2020 on 500 women who were recruited by two-stage cluster random sampling. A semi-structured questionnaire was used to collect data on demographic, and reproductive characteristics. PFD was assessed based on symptoms reporting by women. A short-form version of the Pelvic Floor Distress Inventory (PFDI-20) was used to assess the severity of pelvic floor symptoms. The prevalence of pelvic floor disorder was (41%), with over active bladder being the most prevalent type (32.8 %) followed by stress urinary incontinence (29.2%). Age, obesity, vaginal delivery 4 times or more, caesarean delivery, and history of abortion were positive predictors of PFD prevalence (p<0.001). More than one third (35.6%) of women who had urinary incontinence and (81.8 %) of women who had pelvic organ prolapsed reported their symptoms as severe. The study highlights the magnitude of pelvic floor disorder prevalence. This stresses for urgent action to improve prevention, diagnosis and treatment services to decrease the suffering of women from pelvic floor disorders.

Introduction

Pelvic Floor Disorders (PFDs) were described as having symptoms of Urinary Incontinence (UI), Anal Incontinence (AI), and Pelvic Organ Prolapse (POP), which that can coexist or present separately.[1] PFDs are common debilitating conditions among women worldwide, with prevalence ranging from 12% to 42%. Symptoms of PFDs is most frequently seen in late adulthood, however, the symptoms may appear as early as 20 years of age. One in every four women experience at least one or more PFDs, and as the elderly female population grows, PFDs are expected to become more prevalent.[2] PFDs prevalence appears to embrace a wide range of values, it was reported that 67.5% of Turkish women had PFDs,[3] while among women in United states 23,7% had PFDS.[4] PFDs are predicted to be more prevalent among women living in in Low-/Middle-Income Countries (LMICs) than high-income countries because of high parity with early marriage and childbearing, more vaginal deliveries, and frequent heavy weight lifting.[5] Prevalence among general population in high-income countries is near 25%,[2] but a considerable variation of prevalence was reported in low and middle-income countries. A systematic review found an overall pooled prevalence of PFDs in LMICs of 25% (95% CI 22–29%).[6]

PFD is a common condition among Saudi women. A cross-sectional study in Riyadh reported that 60.2% of the participants had PFD.[7] while another study estimated that the prevalence of PFD was 36.3% among Saudi women attending Primary Health Care Centers (PHCCs) across 13 regions of Saudi Arabia.[8]

Information about PFDs in Egypt and other Middle East countries is scarce; however, a recent study in Egypt reported that, prevalence of stress urinary incontinence and over active bladder was (22.2%, 39.0%) respectively.[9] There are no published studies regarding prevalence of PFDS in primary care setting in Egypt.

Previous research reported that, the most common PFDs were UI with a reported prevalence ranging from 10% to 46% in different populations,[10] POP with an estimated prevalence of 2.9%-20%,[11] and AI with an estimated prevalence of 0.2-13%.[12] Studies also suggest that PFDs often coexist; almost a third of symptomatic PFDs women had two or more disorders.[12] Although suffering of many women with PFDs, there is low level for seeking health care service. In a population-based sample of women 40 years or older, the prevalence of UI was 41%, but only 25% of symptomatic women sought care, 23% received some care, and 12% received subspecialty care.[13] In a community-based internet survey of women older than 45 years, 19% reported accidental bowel leakage but only 29% of those had sought care. Thus, the incidence of care seeking provides an underestimate of the public health burden of PFDs among US women.[14] While PFDs are distressing and cause serious discomfort, women in developing countries are often silently suffering from the pain and discomfort and many are not seeking health care for the problem.[15] A

combination of anatomical, physiological, genetic, lifestyle and obstetric events contributes to PFDs.[16] The etiology of PFDs is known to be multifactorial; PFDs prevalence depends on factors such as ethnicity, family history, medical morbidities, Body Mass Index (BMI), increased age, and behavioral factors among women. In addition, it is now established that the pregnancy itself, mode of delivery, the use of episiotomy, and parity are significant risk factors in the etiology of PFDs.[17]

Primary Care Providers (PCPs) may be responsible for the delay in women seeking treatment, particularly if they are unfamiliar with PFD. Of women with UI symptoms, 75% did not have the proper diagnosis documented in their medical records, possibly resulting from the lack of diagnostic confidence reported by general practitioners. Furthermore, when women do voice concerns, the majority is not referred to an appropriate specialist. With PCPs often being the first contact with the healthcare system, it would likely be a public health benefit to encourage providers to screen for and recognize PFDs.[18] Information about PFDs in Egypt is scarce, identifying the prevalence and relevant risk factors of PFD will help to design appropriate prevention strategies to promote women's health. Thus, this study aimed to assess the prevalence of PFD and the degree of bother of PFDs symptoms in Egyptian women seeking primary health care.

Materials and Methods

Study design and setting

A Cross-sectional study was conducted in PHC settings affiliated with MOHP in Ismailia governorate, Egypt. The study was carried out from October 2019 to May 2020.

Study participants

The study was conducted on females aged 18 years or older, who had been married and agreed to participate in the study. Informal written consent was sought from the women to participate in the study, after clarifying the aim of the research. Pregnant women were excluded and unmarried women were excluded as in our traditional culture, the interviewing unmarried women about their gynecological problems is not acceptable.

Sampling

Sample size

It was planned to take a sample suffi-cient enough to demonstrate a 43% prevalence of PFD among women aged 30-60 years old in Saudi Arabia.[19] To ensure that the 95% confidence interval, power 80, and estimate of the proportion of sample is within 5% of the true proportion, so, by calculation, the sample size is equal to 377+10% drop out, so the total sample was 415 participants. The sample was extended to be 500 women.

Sample technique

Participants were recruited by two-stage cluster random sampling. In the first stage, 5 centers were randomly selected by a simple random sampling approach from a sampling frame consisted of 18 PHC settings affiliated with MOHP in Ismailia governorate by a computer program. In the second stage, the study design and purpose were explained in a simple language to all women who visited PHC settings included in the first stage and showed interest to participate in the study. After assessing eligibility criteria, an equal numbered list of 400 women was made from each PHC by the researchers. Then 100 women were selected using simple random sampling technique from each list.

Study tools

Each participant was assessed by semi-structured questionnaire consists of three parts. The questionnaires were administered by the interviewer.

Socio-demographic, clinical characteristics, and reproductive health history

Socio-demographic and clinical characteristics included: age, marital status, educational status, residency, employment status, history of chronic diseases (diabetes mellitus, hypertension), and current BMI was calculated as kg/m2 and dichotomized as less than 18.5 (underweight) 18.5 to 25.0 (normal weight), 25.0 to 29.9 (overweight), and 30.0 or more (obese). Reproductive health history included: number of child birth, history of abortion, mode of delivery, number of vaginal deliveries, number of cesarean deliveries, history of any pelvic surgeries, and current use of contraception.

Pelvic floor disorder assessment

PFD was assessed based on symptoms reporting by women. Each PFD [over active bladder (OAB), stress urinary incontinences (SUI), pelvic organ prolapse (POP), and anal incontinence (AI)] was categorized as present or absent according to the responses to each symptom domain.

OAB was evaluated by the following three questions: i) Do you experience urination frequently; ii) Do you rush to urinate so that you do not have urine leakage; iii) Have you experienced urine leakage associated with feeling of urgency?

SUI was evaluated by the following two questions: i) Do you experience urine leakage (drops) in small amounts; ii) Do you experience leakage of urine associated with coughing, sneezing or exercise.

POP was evaluated by one question (do you have a sensation that there is something is falling out from your vagina or a bulge in your vagina?), and AI was determined by the following three questions: i) Do you lose gas from your rectum outside your control; ii) If the stool is loose or liquid, do you lose stool beyond your control; iii) Do you lose well-formed stool outside your control?

Positive answer to at least one of those questions regarding the PFD categories defined the existence of the problem. Women were classified to "have PFD" if they had at least one pelvic floor disorder.[12]

The Pelvic Floor Distress Inventory (PFDI-20)

The PFDI-20 is a set of 20 symptom questions, answered on a 4-point Likert scale. The mean values of all answered items are multiplied by 25 to determine the scale score (range 0-100). A summary score is also reported (range 0-300). Higher scores denote a greater symptom. Severity of the symptoms among women with PFD was determined based on distress score ranges from 1-100 and categorized into three part as 'mild symptoms' if the total score was 1-99, 'moderate' if the score was 100-199, and 'severe' if the score was 200-300. In addition to that, each PFDI-20 subscale was categorized into three part as 'mild symptoms' if the total score was 1-33, 'moderate' if the score was 34-66 and 'severe' if the score was 67-100. (PFDI-20) was suitable and validated to assess symptoms of Arabic women suffering from symptomatic PFD.[20]

Translation of questionnaire

The translation of the questionnaire was done using accepted guidelines for translation–back-translation. The questionnaire was translated into Arabic. It was back-translated into English by a bilingual consultant, and then both translators counsel for necessary modifications, restatement, and rewording then the questionnaire faced validity by three expert opinions with no major modifications. A pilot study carried out on 30 patients before the study to assess the feasibility and reliability of the questionnaire, with acceptable Cronbach's α of 0.72.

Statistical analysis

Data was analyzed by version 20 of Statistical Package for Social Sciences (SPSS). Descriptive characteristics were outlined as means, Standard Deviations (SD) for

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continuous variables and percentages for categorical variables. Pearson's Chi-square test was used to compare independent categorical data. Logistic regression analysis was used to examine predictors of PFD. P value was considered significant if <0.05.

Research ethics

The Ethics Committee of Faculty of Medicine, Suez Canal University approved the study (code 3930#). Informed consent was obtained from all participants included in the study.

Results

A total of 500 ever married Egyptian women participated in the study. More than three-quarter (86.4%) of the participants were less than 55 years old with mean age (35.6±11.7) years. The majority (84.2%) of participated women were currently married. More than half (55.6%) of the sample live in urban areas, and 47.8% of the participated women had completed either preparatory or secondary school. Among our participants, more than half (53.6%) were housewives, and the majority)71%) reported no history of chronic disease. The mean of BMI was 31.7±6.29 kg/m², with the majority of patients were either overweight (32%) or obese (49.6%). Regarding the reproductive history, nearly two thirds (61.4%) of the participated women reported one to three times giving birth, while 19.4% reported history of abortion. Among the women who reported ever giving birth, 43.6% had at least one vaginal delivery, and 33.6% had at least one cesarean delivery. History of prior pelvic floor surgical procedure was reported in 3.2% of participated women. Out of 500 ever married Egyptian women who participated in the study, 205 (41%) of the women had experienced at least one type of PFD. Of 205 study subjects experiencing PFD, OAB was the most prevalent type (32.8 %) followed by SUI (29.2%), then AI (19.6%), while the frequency of POP was 2.2% of participated women.

Table 1 demonstrates the prevalence of pelvic floor disorders by demographic categories. There was significant difference in (PFD, OAB, and AI) frequencies found between different groups of the patients

Table 1. Prevalence of pelvic floor disorders by demographic categories in the study sample (n=500).

Variables	Frequency n (%)	One or more PFD n (%)	OAB, n (%)	SUI, n (%)	POP, n (%)	AI, n (%)
Overall prevalence		205 (41)	164 (32.8)	146 (29.2)	11 (2.2)	98 (19.6)
Age group						
18-34	239 (47.8)	27 (13.2)	18 (11)	19 (13.)	0 (0)	10 (10.2)
35-55	193 (38.6)	119 (58)	91 (55.5)	79 (54.1)	2 (18.2)	51 (52)
>55	68 (13.6)	59 (28.8)	55 (33.5)	48 (32.9)	9 (81.8)	37 (37.8)
χ^2		196.5^2	170.4^2	126.8^2	27.8^2	94.4^2
P		<0.001	<0.001	<0.001	<0.001	<0.001
Marital Status						
Currently married	421 (84.2)	169 (82.4)	133 (81.1)	116 (79.5)	6 (54.5)	80 (81.6)
Widow/Divorced	79 (15.8)	36 (17.6)	31 (18.9)	30 (20.5)	5 (45.5)	18 (18.4)
χ^2		0.811	1.761	3.491	7.431	0.601
P		0.37	0.18	0.06	0.01	0.44
Educational Status						
Illiterate/ Primary school	79 (15.8)	56 (27.3)	51 (31.1)	43 (29.5)	5 (45.5)	31 (31.6)
Prep./Secondary school	239 (47.8)	92 (44.9)	73 (44.5)	65 (44.5)	5 (45.5)	46 (46.9)
High education	182 (36.4)	57 (27.8)	40 (24.4)	38 (26)	1 (9.1)	21 (21.5)
χ^2		36.4^2	43.9^2	28.7^2	7.28^2	24.7^2
P		<0.001	<0.001	<0.001	0.014	<0.001
Residence						
Urban	278 (55.6)	99 (48.3)	77 (47)	66 (45.2)	1 (9.1)	40 (40.8)
Rural	222 (44.4)	106 (51.7)	87 (53)	80 (54.8)	10 (90.9)	58 (59.2)
χ^2		7.52^1	7.39^1	9.03^1	9.85^1	10.8^1
P		0.006	0.007	0.003	0.002	0.001
Employment status						
Housewife	268 (53.6)	112 (54.6)	91 (55.5)	82 (56.2)	9 (81.8)	59 (60.2)
Employed (governmental/ nongovernmental)	232 (46.4)	93 (45.4)	73 (45.5)	64 (43.8)	2 (18.2)	39 (39.8)
χ^2		0.149^1	0.350^1	0.545^1	3.60^1	2.14^1
P	0.69	0.55	0.460	0.06	0.14	
BMI						
Normal weight	92 (18.4)	3 (1.5)	0 (0)	3 (2.1)	0 (0)	2 (2)
Over weight	160 (32)	47 (22.9)	40 (24.4)	36 (24.7)	5 (45.5)	28 (28.6)
Obese	248 (49.6)	155 (75.6)	124 (75.6)	107 (73.2)	6 (54.5)	68 (69.4)
χ^2		126.4^2	104.13^2	56.93^2	2.67^2	34.03^2
P		<0.001	<0.001	<0.001	0.251	<0.001
History of chronic diseases						
No history of chronic diseases	355 (71)	90 (43.9)	66 (40.2)	65 (44.5)	1 (9.1)	37 (37.8)
DM	49 (9.8)	41 (20)	34 (20.7)	31 (21.2)	0 (0)	18 (18.3)
HTN	79 (15.8)	58 (28.3)	49 (29.9)	40 (27.4)	8 (72.7)	34 (34.7)
> 2 chronic diseases	17 (3.4)	16 (7.8)	15 (9.1)	10 (6.8)	2 (18.2)	9 (9.2)
χ^2		129.8^2	113.2^2	69.14^2	27.21^2	62.3^6
P		<0.001	<0.001	<0.001	<0.001	<0.001

[1]chi-square test analysis; [2]Fisher's Exact test analysis; Statistically significant at p<0.05. Abbreviations: PFDs; Pelvic floor disorders, OAB; over active bladder, SUI; stress urinary incontinence, POP; pelvic organ prolapse, AI; anal incontinence, BMI; body mass index, DM; diabetes mellitus, HTN; hypertension.

(p<0.05). The prevalence of PFD, OAB, and AI were higher in women aged 35-55 years, who had completed either preparatory or secondary school, live in rural area, obese women, and who reported no history of chronic disease. The rate of POP was higher among women older than 55 years, and in women suffering from hypertension. On the other hand, there is no significant relationship between prevalence of PFD and employment nor marital status (p>0.05).

Table 2 demonstrates the prevalence of pelvic floor disorders by reproductive categories. There was significant difference in PFD frequencies found between different groups of the patients (p<0.05). The prevalence of PFD was significantly higher in women with higher parity (four times or more), with no history of abortion nor prior pelvic floor surgery. It was observed that the prevalence of one or more PFD was higher in women exposed to vaginal delivery more than caesarean delivery (40 % *vs.* 30.7% in CS). A multivariate logistic regression analysis was conducted to investigate factors associated with pelvic floor disorder (Table 3). The analysis initially adjusted for age, education, obesity, and history of chronic disease (Model 1). In Model 2, reproductive variables as (number of child birth, vaginal delivery, caesarean delivery, history of abortion and history of prior pelvic floor surgery) were added. Both Model 1 and Model 2 were significant: Likelihood ratio=396.02, X2=280.8; p<0.001; Pseudo R2=0.579, and Likelihood ratio=207.15, X2=469.7; p<0.001; Pseudo R2=0.821. Of the predictor variables, age, obesity, history of chronic disease, vaginal delivery 4 times or more, caesarean delivery, history of abortion and history of prior pelvic floor surgery were positive predictors of PFD prevalence while education was negative predictors.

Two thirds (66.3%) of women who had experienced PFDs, reported mild degree of distress according to Pelvic Floor Disability Index (PFDI-20). Among different types of PFD, POP was found to be the most bothersome (81.8 %) with severe degree of distress according to Pelvic Organ prolapse Distress Inventory- 6 (POPDI-6). Urinary symptoms were severe in more than one third (35.6%) of women with (OAB & SUI) according to Urinary distress Inventory 6 (UDI-6; Table 4).

Table 2. Prevalence of pelvic floor disorders by reproductive categories in the study sample (n=500).

Variables	Frequency n (%)	One or more PFD n (%)	OAB, n (%)	SUI, n (%)	POP, n (%)	AI, n (%)
Overall prevalence		205 (41)	164 (32.8)	146 (29.2)	11 (2.2)	98 (19.6)
Number of child birth/parity						
None	35 (7.0)	4 (2)	3 (1.8)	4 (2.7)	0 (0)	1 (1)
One to three times	307 (61.4)	55 (26.8)	43 (26.2)	40 (27.4)	1 (9.1)	16 (16.3)
Four times or more	158 (31.6)	146 (71.2)	118 (72)	102 (69.9)	10 (90.9)	81 (82.7)
χ^2		275.9[2]	183.0[2]	134.9[2]	15.5[2]	138.8[2]
P		<0.001	<0.001	<0.001	<0.001	<0.001
History of abortion						
Yes	97 (19.4)	64 (31.2)	53 (32.3)	47 (32.2)	3 (27.3)	36 (36.7)
No	403 (80.6)	141 (68.8)	111 (67.7)	99 (67.8)	8 (72.7)	62 (63.3)
χ^2		31.04[1]	26.04[1]	22.4[1]	0.45[1]	23.4[1]
P		<0.001	<0.001	<0.001	0.50	<0.001
Mode of delivery						
None	35 (7)	4 (2)	3 (1.8)	4 (2.7)	0 (0)	1 (1)
Vaginal	218 (43.6)	82 (40)	71 (43.3)	56 (38.4)	10 (90.9)	48 (49)
Cesarean	168 (33.6)	63 (30.7)	48 (29.3)	45 (30.8)	1 (9.1)	22 (22.4)
Both	79 (15.8)	56 (27.3)	42 (25.6)	41 (28.1)	0 (0)	27 (27.6)
χ^2		443.7[2]	25.9[2]	25.37[2]	7.97[2]	22.55[2]
P		<0.001	<0.001	<0.001	.016	<0.001
Number of vaginal deliveries						
None	202 (40.4)	64 (31.2)	51 (31.1)	46 (31.5)	1 (9.1)	22 (22.4)
One to three times	211 (42.2)	58 (28.3)	43 (26.2)	44 (30.1)	1 (9.1)	29 (29.6)
Four times or more	87 (17.4)	83 (40.5)	70 (42.7)	56 (38.4)	9 (81.8)	47 (48)
χ^2		142.0[2]	104.4[2]	57.52[2]	21.34[2]	66.47[2]
P		<0.001	<0.001	<0.001	<0.0001	<0.0001
Number of cesarean deliveries						
None	252 (50.4)	86 (42)	73 (44.5)	60 (41.1)	10 (90.9)	48 (49)
One to three times	193 (38.6)	72 (35.1)	53 (32.3)	54 (37)	0 (0)	23 (23.5)
Four times or more	55 (11.0)	47 (22.9)	38 (23.2)	32 (21.9)	1 (9.1)	27 (27.5)
χ^2		52.01[2]	34.32[2]	23.75[2]	8.88[2]	32.23[2]
P		<0.001	<0.001	<0.001	0.018	<0.001
History of Pelvic Surgery						
Yes	16 (3.2)	14 (6.8)	12 (7.3)	12 (8.2)	1 (9.1)	8 (8.2)
No	484 (96.8)	191 (39.2)	152 (92.7)	134 (91.8)	10 (90.9)	90 (91.8)
χ^2		14.77[1]	13.35[1]	16.77[1]	1.26[1]	9.69[1]
		<0.001	<0.001	<0.001	0.262	0.002
Current use of contraception						
Yes	312 (62.4)	120 (58.5)	96 (58.5)	80 (54.8)	3 (27.3)	53 (54.1)
No	188 (37.6)	85 (41.5)	68 (41.5)	66 (45.2)	8 (72.7)	45 (45.9)
χ^2		2.21[1]	1.55[1]	5.08[1]	5.91[1]	3.59[1]
P		0.137	0.213	0.024	0.015	0.058

[1]chi-square test analysis; [2]Fisher's Exact test analysis. Statistically significant at p<0.05. Abbreviations: PFDs; Pelvic floor disorders, OAB; over active bladder, SUI; stress urinary incontinence, POP; pelvic organ prolapse, AI; anal incontinence.

Discussion

This study revealed that 41% of randomly selected women attending primary healthcare experienced at least one or more PFD, with OAB being the most prevalent type (32.8 %) followed by SUI (29.2%). Age, obesity, vaginal delivery, caesarean delivery, and history of abortion were positive predictors of PFD prevalence (p<0.001). Symptoms were reported as severe in more than one third (35.6%) of women who had urinary incontinence and (81.8 %) of women who had Pelvic Organ Prolapsed. Interestingly, the prevalence of PFD in the present study was significantly higher in women aged 35-55 years, who had completed either preparatory or secondary school, live in rural area, were obese, and reported no history of chronic disease.

In this study the prevalence of PFDs was reported in (41%) of participants, this finding is consistent with a Saudi Arabian study by Al-Badr *et al.* which reported PFDs prevalence is (36%).[8] and a Lebanese study (42%).[11]

In contrast, other studies found higher findings as the prevalence that was reported by Tinetti *et al.* (67%).[21] The discrepancy between these two estimates may be related to the difference in the study population, where in the former study only post-menopausal women< 55 years old were included in the study while it represented by 13.6 % in our study. While others found lower prevalence as that conducted in northwest Ethiopia in 2013 (11.9 %).[22] The difference in researches findings could be explained by difference in study participants; in the Ethiopian study 67.6 % of the participants had average body weight while in our study more than three quarter of the participant 81.6% were overweight or obese.

Our results regarding risk factors of PFD were in agreement with findings of many studies that were carried out in Egypt,[23] Northwest Ethiopia[22] and Southern California.[24] High prevalence of PFD with these risk factors can be explained as vaginal delivery and higher parity pose a continuous strain on the pelvic floor muscles, obesity causes increase of intra-abdominal pressure leading to weakening of pelvic floor muscles and fascia, and women living in rural areas tend to marry at young age, to bear many children and have low educational level: all of these factors predispose women to PFD.

In the current research, multivariate logistic regression analysis was conducted to investigate factors associated with pelvic floor disorder and it was found that age, obesity, history of chronic disease, vaginal delivery 4 times or more, caesarean delivery, history of abortion and history of prior

Table 3. Multivariate logistic regression analysis of pelvic floor disorder.

Variables	Model 1				Model 2			
	B(SE)	Wald	OR (95% CI)	P	B(SE)	Wald	OR (95% CI)	P
Age group								
18-34	1	1	1	1	1	1	1	1
35-55	2.5 (0.31)	63.6	11.9 (6.5-21.9)	<0.001	2.5 (.49)	25.3	11.7 (4.5-30.3)	<0.001
>55	3.2 (0.58)	30.9	25.5 (8.1-80.0)	<0.001	2.6 (.91)	8.43	13.9 (2.4-82.2)	0.04
Educational Status								
Illiterate/Primary	1	1	1	1	1	1	1	1
Prep./Secondary	-0.01 (0.41)	0.08	0.89 (0.40-1.99)	0.785	-0.12 (0.57)	0.045	0.88 (0.29-2.73)	0.833
High education	0.48 (0.45)	1.16	1.6 (0.67-3.8)	0.282	1.4 (0.66)	4.43	3.9 (1.1-14.4)	0.035
Obesity (BMI≥30)	2.01 (.27)	55.63	7.4 (4.4-12.61)	<.001	2.18 (.41)	28.25	8.81 (3.9-19.7)	<0.001
History of chronic diseases	1.08 (0.32)	11.51	2.9 (1.8-5.46)	<.001	1.3 (0.49)	6.91	3.69 (1.39-9.7)	0.009
Number of child birth								
None					1	1	1	1
One to three times					-1.4 (1.0)	1.81	0.25 (0.03-1.89)	0.178
Four times or more					1.2 (1.4)	0.704	3.19 (0.21-48.1)	0.401
Vaginal deliveries								
None					1	1	1	1
One to three times					-0.17 (0.61)	0.077	0.84 (0.25-2.79)	0.781
Four times or more					3.92 (1.3)	9.13	50.6 (3.9-644.3)	0.003
Cesarean deliveries								
None					1	1	1	1
One to three times					2.8 (0.77)	13.44	0.51 (0.19-1.34)	<0.001
Four times or more					3.19 (1.09)	8.57	1.18 (0.41-3.38)	0.003
History of pelvic surgery					2.3 (1.11)	4.27	10.0 (1.1-88.8)	0.039
History of Abortion					1.85 (.52)	12.72	6.4 (2.3-17.6)	<0.001

Abbreviations: B, Beta; SE, Standard Error; OR, Odds Ratio; CI, Confidence Interval *P < 0.05. Dependent Variable: Pelvic Floor Disorders. Model 1: Age, education, obesity, and history of chronic [Likelihood ratio=396.02, X2=280.8; p<0.001; Pseudo R2=0.579]. Model 2: Reproductive factors [Likelihood ratio=207.15, X2=469.7; p<0.001; Pseudo R2=0.821].

Table 4. Degree of distress of Pelvic Floor Disorders Symptoms among participating women with pelvic floor disorder (n=205).

Severity of PFDs symptoms (%)	PFDI-20	UDI-6	POPDI-6	CRAD-8
Mild	136 (66.3)	73 (35.6)	0 (0)	23 (23.5)
Moderate	59 (28.8)	59 (28.8)	2 (18.2)	56 (57.1)
Severe	10 (4.9)	73 (35.6)	9 (81.8)	19 (19.4)
Mean score	83.96±59.52	54.6±27.1	4.2±17.4	24.87±29.04

Abbreviations: Pelvic Organ prolapse Distress Inventory- 6 (POPDI-6); Colorectal-Anal distress Inventory- 8 (CRAD-8); Urinary distress Inventory 6 (UDI-6); Pelvic Floor Disability Index (PFDI-20).

pelvic floor surgery were positive predictors of PFD prevalence while education was a negative predictor. This is consistent with findings of many studies, including a Saudi Arabian study of UI prevalence,[25] and another study which was carried out in Bangladeshi in 2018 to determine prevalence and risk factors of PFD.[26] In our study caesarean delivery was associated with PFDs, in contrast, other studies found that caesarean delivery is not involved in the onset and development of PFDs.[27,28]

The present study found POP was the most bothersome (81.8%) one with severe degree of distress according to Pelvic Organ prolapse Distress Inventory-6 (POPDI-6). This study highlights the magnitude of pelvic floor disorder prevalence and the severity of symptoms of PFD among Egyptian women. This stresses for urgent action to improve prevention, diagnosis and treatment services to decrease the suffering of women from pelvic floor disorders. Primary care providers (PCPs) may be responsible for the delay in women seeking treatment, particularly if they are unfamiliar with PFD. With PCPs often being the first contact with the healthcare system, it would likely be a public health benefit to encourage PCPs to screen for and recognize PFDs as it may improve women's access to care. PCPs would likely benefit from education on how to diagnose, treat, and refer for pelvic floor disorder in order to optimize patient care. In the future, research could investigate the effect of training programs on PCPs' levels of comfort and competency in management PFDs in females.

There may be some possible limitations in this study. For example, the self-reported nature of the questionnaire meant that recall and reporting bias was inevitable. Another limitation to this study is selection bias, participants were approached in primary health care settings and so did not represent a truly community-based sample. These women were already active participants in their healthcare and thus seeking health care service for PFDs may be underestimated in our study. In addition, this research couldn't give data about PFD in unmarried women as interviewing unmarried women about their gynecological morbidity is inappropriate in our community, so they were excluded from this study. As a mater of fact, culture may be an important aspect of whether women feel comfortable discussing symptoms of PFD and they may have under reported symptoms due to social stigma and shame. Also, culture could be a barrier to help-seeking behavior among women suffering from PFD.

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