

Knowledge of Pelvic Floor Dysfunction in College-Going Young Females Aged 18–22 Years: A Cross-Sectional Study

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Abstract—Background: Pelvic floor dysfunction (PFD), comprising urinary incontinence (UI) and pelvic organ prolapse (POP), affects a large proportion of women and is strongly linked to low levels of awareness. Symptoms can begin as early as the third decade of life, yet knowledge among young women remains largely unstudied. **Objective:** To assess the knowledge of pelvic floor dysfunction among college-going young females aged 18–22 years. **Methods:** A descriptive cross-sectional study was conducted on 184 college-going female students (non-health-science) aged 18–22 years from SIA College of Higher Education and surrounding colleges in the Kalyan, Dombivli, Navi Mumbai region, selected through convenient sampling. Knowledge was assessed using the validated Prolapse and Incontinence Knowledge Questionnaire (PIKQ), administered through Google Forms and analysed using SPSS. **Results:** Of 184 participants (mean age 19.4 ± 0.76 years), 54.9% answered the urinary incontinence domain correctly, while only 42.2% answered the pelvic organ prolapse domain correctly. Awareness of treatment options such as pelvic floor exercises was comparatively higher, whereas knowledge of diagnostic methods and specific treatments (e.g., pessary) was poor. **Conclusion:** College-going young females demonstrate poor overall knowledge of pelvic floor dysfunction, particularly of pelvic organ prolapse. Targeted awareness and preventive education programmes are needed for this population.

Index Terms—cross-sectional study, knowledge, pelvic floor dysfunction, pelvic organ prolapse, urinary incontinence, young females.

I. INTRODUCTION

The pelvic floor is a musculofascial structure comprising muscles, ligaments, and fascia that supports the bladder, uterus, and rectum while maintaining continence, pelvic organ position, and stability during everyday activities such as standing, lifting, and physical exertion; when this system is compromised, the resulting pelvic floor dysfunction (PFD) encompasses a range of clinical disorders, most commonly urinary incontinence (UI) and pelvic organ prolapse (POP), which frequently coexist [1]. In a large observational study from Spain, UI was reported by 55.8% of women, symptomatic uterine prolapse by 14.0%, and pelvic pain by 18.7%, confirming that PFD is highly prevalent even outside pregnancy and older age groups [1]. Population-based data from the United States similarly estimate that at least one symptomatic pelvic floor disorder affects roughly one in four women, with prevalence rising sharply with age [2]. A large community-dwelling cohort of over 12,000 women aged 25 to 84 years further demonstrated that these disorders frequently co-occur, with stress incontinence, overactive bladder, and prolapse often present together in the same individual [3]. Longitudinal surveillance data additionally suggest that the burden of symptomatic PFD has been rising over time, in part reflecting an ageing population [4]. Childbirth, and particularly vaginal delivery, has been consistently identified as one of the most important risk factors for these conditions, with prolapse risk

remaining elevated even two decades after delivery [5]. A tertiary-centre study from Malaysia reported that 80.4% of pregnant women had a low level of knowledge of UI and 45.0% had a low level of knowledge of POP, illustrating that poor awareness accompanies this high prevalence even in populations most exposed to risk [6]. Although PFD is rarely life-threatening, it negatively affects the social, domestic, sexual, physical, psychological, and occupational aspects of women's lives, and because it develops gradually and is frequently under-reported, its true burden in younger, non-pregnant populations is likely underestimated.

Despite this burden, awareness of PFD remains poor even among educated young populations: a cross-sectional survey of 768 female university students found that respondents, particularly those outside the health sciences, had poor knowledge of PFD and especially of pelvic organ prolapse [7]. A community-based survey of racially and socioeconomically diverse women similarly found a widespread lack of knowledge proficiency about both UI and POP, with embarrassment and limited awareness of available treatment identified as barriers to timely care-seeking [8]. This gap is not confined to patients: a narrative review of nurses' beliefs concluded that UI remains an underestimated problem in clinical practice partly because nurses themselves often lack adequate education in continence promotion, limiting the guidance available to women [9]. Even at the level of basic body awareness, young women have been shown to have an inaccurate perception of their own pelvic floor muscle contraction when compared against physical assessment, a mismatch that may reduce their ability to recognise dysfunction early or adhere to preventive exercise [10]. Consistent with this, evidence from pregnant women in Saudi Arabia points to a broader lack of awareness of the role of physical activity and pelvic floor muscle exercise in preventing and treating PFD, underscoring those poor consultation rates may stem as much from limited awareness of effective preventive options as from the disorders themselves [11]. Educating young women before symptoms typically emerge offers a window to correct such misconceptions early and encourage timely care-seeking later in life. Given this substantial psychosocial and largely unaddressed knowledge gap, the present study was undertaken to assess the

knowledge of pelvic floor dysfunction among college-going young females.

II. AIM AND OBJECTIVES

Aim: To assess the knowledge of pelvic floor dysfunction among college-going young females aged 18–22 years.

Objective: To assess the knowledge of pelvic floor dysfunction among college-going young females using the Prolapse and Incontinence Knowledge Questionnaire (PIKQ).

III. MATERIALS AND METHODOLOGY

A. Study Design and Setting

A descriptive cross-sectional study was conducted over a period of 1 year and 6 months among college-going female students at The SIA College of Higher Education and colleges in and around Mumbai (Kalyan, Dombivli, and Navi Mumbai). The study protocol was reviewed and approved by the Institutional Review Board and Ethics Committee.

B. Participants

Inclusion criteria were college-going young females aged 18–22 years. Medical students and participants unwilling to take part voluntarily were excluded. Participants were recruited using convenient sampling.

C. Sample Size

Sample size was calculated using Cochran's formula for a continuous variable, $N = 4Z\alpha^2S^2/W^2$, based on a standard deviation of 6.92 for PIKQ scores reported among university students, a 95% confidence level ($Z\alpha = 1.96$), and a confidence interval width of 2. The minimum estimated sample size was 184, all of whom were recruited [12].

D. Tools

The Prolapse and Incontinence Knowledge Questionnaire (PIKQ), a valid and reliable instrument (construct validity, $P < 0.001$), was used to assess knowledge [13]. It comprises 24 statements across two domains of 12 items each (a urinary incontinence scale and a pelvic organ prolapse scale) evaluating basic understanding of the epidemiology, pathogenesis, diagnosis, and treatment of both conditions. The tool

has since been cross-culturally adapted and validated in other languages, further supporting its use as a comprehensible and responsive measure of patient knowledge in this domain [14]. Data were collected using a structured Google Form comprising demographic details, informed consent, and the two PIKQ sections.

E. Procedure

Eligible participants were recruited online after being informed about the purpose of the study, and informed consent was obtained with an assurance of confidentiality. Each participant completed the PIKQ by selecting "Agree," "Disagree," or "Don't Know" for each statement. Responses were entered in Microsoft Excel and analysed using SPSS. Frequencies, percentages, cross-tables, bar diagrams, and pie charts were used for data summarisation. As this was a descriptive cross-sectional study, no hypothesis testing or statistical significance testing was applicable; results are presented as mean $\pm$ SD for continuous variables and as percentages for categorical variables.

IV. RESULTS

A total of 184 college-going females aged 18–22 years were recruited (mean age 19.4 ± 0.76 years); the largest proportion (37%) were 19 years old.

A. Urinary Incontinence Domain

Knowledge of UI was comparatively better across items. A majority of participants correctly identified that certain exercises can help control urine leakage (78.3%), that many things can cause urine leakage (77.7%), and that surgery is not the only treatment for urine leakage (62%). However, misconceptions persisted: 58.2% incorrectly believed UI is more common in young women than older women, and 43.5% incorrectly believed nothing besides pads and diapers can help treat leakage. Overall, 101 participants (54.9%) answered the majority of UI items correctly, while 83 (45.1%) did not.

B. Pelvic Organ Prolapse Domain

Knowledge of POP was markedly poorer. While 66.3% correctly recognised that certain exercises can help stop POP from worsening, awareness of diagnostic and treatment aspects was low in which

only 28.8% correctly identified that a pessary can be used to treat POP symptoms (64.1% were unsure), and only 33.2% correctly identified surgery as one treatment option. Nearly half (49.5%) incorrectly believed POP is more common in young than older women. Overall, only 77 participants (42.2%) answered the majority of POP items correctly, while 106 (57.7%) did not, reflecting substantially poorer knowledge of POP compared with UI.

TABLE I ITEM-WISE KNOWLEDGE OF URINARY INCONTINENCE (PIKQ PART A, N = 184)

Statement	Correct, n (%)	Incorrect, n (%)	Don't Know, n (%)
Urinary incontinence (loss of urine or leaky bladder) is more common in young women than in old women.	35 (19.0)	107 (58.2)	42 (22.8)
Women are more likely than men to leak urine.	93 (50.5)	21 (11.4)	70 (38.0)
Other than pads and diapers, not much can be done to treat leakage of urine.	46 (25.0)	80 (43.5)	58 (31.5)
It is NOT important to diagnose the type of urine leakage before trying to treat it.	90 (48.9)	46 (25.0)	48 (26.1)
Many things can cause urine leakage.	143 (77.7)	11 (6.0)	30 (16.3)
Certain exercises can be done to help control urine leakage.	144 (78.3)	5 (2.7)	35 (19.0)
Some medications may cause urinary leakage.	107 (58.2)	21 (11.4)	56 (30.4)
Once people start to leak urine, they are never able to control their urine again.	92 (50.0)	44 (23.9)	48 (26.1)

Doctors can do special types of bladder testing to diagnose urine leakage.	120 (65.2)	9 (4.9)	55 (29.9)
Surgery is the only treatment for urine leakage.	114 (62.0)	22 (12.0)	48 (26.1)
Giving birth many times may lead to urine leakage.	99 (53.8)	15 (8.2)	70 (38.0)
Most people who leak urine can be cured or improved with some kind of treatment.	130 (70.7)	7 (3.8)	47 (25.5)

TABLE II ITEM-WISE KNOWLEDGE OF PELVIC ORGAN PROLAPSE (PIKQ PART B, N = 184)

Statement	Correct, n (%)	Incorrect, n (%)	Don't Know, n (%)
Pelvic organ prolapse (bulging of vagina, uterus, bladder or rectum) is more common in young women than in old women.	27 (14.7)	91 (49.5)	66 (35.9)
Giving birth many times may lead to pelvic organ prolapse.	91 (49.5)	18 (9.8)	75 (40.8)
Pelvic organ prolapse can happen at any age.	99 (53.8)	15 (8.2)	70 (38.0)
Certain exercises can help to stop pelvic organ prolapse from getting worse.	122 (66.3)	10 (5.4)	52 (28.3)
Symptoms of pelvic organ prolapse may include pelvic heaviness and/or pressure.	100 (54.3)	10 (5.4)	74 (40.2)
A good way for a doctor to diagnose pelvic organ prolapse	128 (69.6)	14 (7.6)	42 (22.8)

is by examining the patient.			
Once the patient has pelvic organ prolapse, not much can be done to help her.	71 (38.6)	40 (21.7)	73 (39.7)
Heavy lifting on a daily basis can lead to pelvic organ prolapse.	74 (40.2)	24 (13.0)	86 (46.7)
Surgery is one type of treatment for pelvic organ prolapse.	61 (33.2)	55 (29.9)	68 (37.0)
Doctors can run a blood test to diagnose pelvic organ prolapse.	79 (42.9)	23 (12.5)	82 (44.6)
A rubber ring called a pessary can be used to treat symptoms of pelvic organ prolapse.	53 (28.8)	13 (7.1)	118 (64.1)
People who are obese are less likely to get pelvic organ prolapse.	28 (15.2)	48 (26.1)	108 (58.7)

TABLE III OVERALL KNOWLEDGE PROFICIENCY BY DOMAIN (N = 184)

Domain	Correct n (%)	Incorrect n (%)
Urinary Incontinence	101 (54.9%)	83 (45.1%)
Pelvic Organ Prolapse	77 (42.2%)	106 (57.7%)

V. DISCUSSION

This study assessed the knowledge of pelvic floor dysfunction among 184 college-going female students aged 18–22 years (mean 19.4 ± 0.76 years) using the PIKQ. Unlike most existing research, which has largely focused on pregnant or menopausal women, this study specifically targeted young, non-health-science college students, a population in whom early awareness could meaningfully shape future health-seeking behaviour.

Participants demonstrated comparatively better knowledge of UI (54.9% correct) than of POP (42.2% correct), indicating an overall poor understanding of

pelvic floor dysfunction, particularly of POP. This finding is consistent with Bailón Queiruga et al., who reported poorer knowledge of POP than UI among 768 female university students [1]. Similarly, in a primary-care sample assessed with the same questionnaire, Chen et al. reported knowledge non-proficiency in 72.0% of women for UI compared with 53.6% for POP, a pattern of relatively greater UI awareness that mirrors the present results [15]. This gap may be explained by the relatively higher social visibility and everyday use of the term "urinary incontinence," compared with the less commonly used and less understood term "pelvic organ prolapse," as well as by the limited emphasis placed on pelvic floor health in general academic curricula outside health sciences. This pattern is echoed across culturally diverse settings, suggesting that poor PFD knowledge among women is a widespread rather than region-specific phenomenon. Among community-dwelling Korean American women with self-identified UI, respondents likewise showed limited knowledge and negative attitudes toward the condition, with the authors calling for targeted interventions to improve both [16]. In Nepal, over half of married women of reproductive age reported never having heard of uterine prolapse at all, and even among those who had, satisfactory knowledge was present in only about a third, indicating that basic awareness of POP-related conditions cannot be assumed even as a starting point in some populations [17]. A related study of parous women in Pokhara similarly found that only about one-fifth had ever heard of Kegel exercises, despite most participants demonstrating fair-to-good general awareness of uterine prolapse, pointing to a specific gap in preventive-exercise knowledge that mirrors the low recognition of the pessary and other POP treatment options observed among the present study's participants [18]. Not all populations show uniformly poor knowledge, however: a survey of women in the southern Appalachian region of the United States found reasonably high overall knowledge of both UI and POP, which the authors attributed to effective self-education or provider-led education in that setting [19]. Taken together, these comparisons suggest that the poor knowledge observed here is not inevitable, and that structured educational exposure, whether through curricula, community outreach, or provider counselling, can meaningfully narrow the gap.

As the study population consisted specifically of non-health-science students, the overall poor knowledge observed underscores the need for structured educational interventions targeting young women outside clinical or paramedical fields. Improved knowledge and understanding of pelvic floor dysfunction could help reduce prevailing misconceptions and enable women to seek timely care, while also equipping them to raise awareness within their families and communities.

VI. CONCLUSION

College-going young females aged 18–22 years demonstrated poor overall knowledge of pelvic floor dysfunction, with knowledge of pelvic organ prolapse being notably poorer than knowledge of urinary incontinence.

VII. CLINICAL IMPLICATION

Given the poor baseline knowledge observed among non-health-science female students, structured awareness and prevention programmes are needed, targeting young women specifically, to enable early implementation of preventive measures and reduce hesitancy in seeking medical care. Non-health-science students, in particular, should be prioritised in future educational initiatives given their comparatively greater lack of awareness.

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