DOI: https://doi.org/10.54393/pbmj.v8i3.1202

PAKISTAN BIOMEDICAL JOURNAL
https://www.pakistanbmj.com/journal/index.php/pbmj/index
ISSN (E): 2709-2798, (P): 2709-278X
Volume 8, Issue 03 (March 2025)

Original Article

OPEN ACCESS

Association of Pelvic Floor Dysfunction with Conception Challenges Among PCOS Female

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ARTICLE INFO

Keywords:
Pelvic Floor Dysfunction, Polycystic Ovary Syndrome, Conception Challenges, Miscarriages

How to Cite:
Fatima, N., Mustafa, M., Alam, A., Rafi, A., Tahir, H., & Khan, S. (2025). Association of Pelvic Floor Dysfunction with Conception Challenges Among PCOS Female: Pelvic Floor Dysfunction with Conception Challenges among Females.Pakistan BioMedical Journal, 8(3),18 -22. https://doi.org/10.54393/p bmj.v8i3.1202

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Received date: 26th December, 2024
Revised date: 10th March, 2025
Acceptance date: 12th March, 2025
Published date: 31st March, 2025

ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder in women, often linked to reproductive challenges and pelvic floor dysfunction. **Objective:** To find out the association of pelvic floor dysfunction and with conception challenges among females with Poly Cystic Ovary Syndrome. **Methods:** A cross sectional descriptive study was conducted; data were collected from Jinnah Hospital, Central Park Hospital, Suraya Azeem teaching hospital and from private clinics of Lahore. Data were collected after getting approval from University Research Ethical Committee from July to October 2024 with a Reference number RE-085-2024. Non probability purposive sampling technique was used. Pelvic floor dysfunction was confirmed through pelvic floor dysfunction inventedry-20 along with some self-made questions for descriptive statistics.192 married female were included in the study and data were analyzed through SPSS version 22.0 software. **Results:** Out of 192 respondents were of age group 21-30(68.2%).In distribution of BMI, 91 (47.4%) were overweight, 163 (84.9%) were trying to get pregnant, 170(88.5%) were facing difficulty in getting pregnant, 169(88%) of female faced miscarriages, 72(37.5%) females had 2 miscarriages, 78(40.6%) had 1 stillbirth, 83(43.2%) had 1 preterm birth, 154 (80.2%) were taking treatment of PCOS. 115(59.9%) had severe pelvic organ prolapse, 135(70.3%) had mild colorectal anal distress and 97(50.5%) had mild urinary distress. **Conclusions:** The study concluded that there is a high prevalence of severe pelvic floor dysfunction among PCOS females. Moreover, pelvic organ prolapse is significantly associated with miscarriages in women with PCOS.

INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is very common health problem that is demonstrated as irregular periods, polycystic ovaries, and over production of androgens. Females with PCOS may experience a lot of issues like hirsutism, acne, mood swings, hair loss issues and other infertility issues [1]. Pelvic Floor Dysfunction (PFD) is a term that explains the impairment of muscles and connective tissues of the pelvic floor. The pelvic floor consists of group of muscles that act as a supportive sling to the pelvic organs, including the uterus, vagina, and in women, the bladder and rectum of particular interest, the influence of polycystic ovarian syndrome (PCOS) on PFD, this affects a significant portion of reproductive-aged women with prevalence rates of 5 to 15% [2]. Emerging research suggests that the hormonal disruptions may contribute to structural and functional changes in pelvic floor musculature [3]. Polycystic ovary syndrome is a syndrome that includes hormonal and reproductive problems. PCOS diagnosed females faces the problems like fertility, infertility and irregular feminine cycle [4]. PCOS diagnosed females faces the reproductive problems which causes higher rate of miscarriages, delays in conception, also minimizes the consequences of conception treatments. The literal meaning of infertility. According to American society of reproductive medicine practice committee is failure to conceive after 12 or more months of attempts of natural fertilization, it is also a major issue in the community [5]. The problems would include gestational diabetes, pre-eclampsia, fetal growth abnormalities and birth related issues like still births, preterm births and

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spontaneous abortions. The females with PCOS, faces a lot of pregnancy induced complications with higher risks of preterm births which increases fetal morbidity and mortality [6]. Approximately 50-70% women affected who has the symptoms of insulin resistance lead to other comorbidities High BP, sugar intolerance, dyslipidemia and diabetes [7]. Among infertile women negative emotions stress, anxiety is common. Infertility is associated with negative emotion and connected with poor quality of life [8]. Infertile women are more prone to mental illness, impaired quality of life and marital dissatisfaction [9]. Infertile women feelings and person quality of life profoundly affected by the lack of social support system [10]. Obesity related comorbidity directly affect the adipose tissue on sexual response. Infertile women lower satisfaction and sexual function as compare to fertile women due to many contributing factors like marital problem, intercourse time, and psychological burden of infertility [10]. Sexual dysfunctions are common among women with PCOS, with many experiencing reduced sexual desire, arousal issues, and painful intercourse [11].

Due to all these complications, there is a high need of care throughout the pregnancy and afterbirth as well [12].

METHODS

A cross-sectional descriptive study was carried out on married female with PCOS by students of DPT in University of Management and Technology for 4 months after getting approval from university Research Ethical Committee from July to October 2024 with Reference number RE-085-2024. Non probability purposive sampling technique was used to collect data and an informed consent was taken from each participant. Data were collected from Jinnah Memorial Hospital, Central Park Hospital, Surreya Azeem Teaching hospital and private clinics of Lahore. The sample size of 192 was calculated from RAO software with level of significance of 95% and expected margin of error of 5%. Married females with Age range (18 to 40 years) diagnosed with PCOS, were included whereas female with postmenopausal history or with any other endocrine disorder or who undergone Pelvic surgeries or with any other personality or Psychiatric disorder were excluded from the study. Those females who were not willing to participate were also excluded from the study. A structured questionnaire of pelvic floor dysfunction inventory-20 was used to confirm pelvic floor dysfunction along with self-made questions for demographics data and also included menstrual, medical and social history. Data were analyzed by software Statistical Packages of Social Sciences (SPSS) version 20.0 in the form of descriptive statistics including frequency tables, bar charts and bivariant chi square test was used to check association between variables pelvic organ prolapse with number of miscarriages. Data were kept confidential throughout the study.

RESULTS

Table 1 showed the demographics. According to the demographic data, majority of the participants were in between age range of 21-30 years (68.2%), BMI greater than 30 (52.1%) and marriage duration of 1-5 years (99%) were demonstrated.

Table 1: Demographic Characteristics of Study Participants

Variables	Frequency (%)
Age (Years)	
10-20	1 (0.5%)
21-30	131 (68.2%)
31-40	60 (31.3%)
BMI	
Underweight < 18.5	0 (0%)
Normal 18.6-24.9	1 (0.5%)
Overweight 25-29.9	91 (47.4%)
Obese >30	100 (52.1%)
Duration of Marriage (Years)	
1-5	99 (51.6%)
6-10	72 (37.5%)
11-15	16 (8.3%)
16-20	5 (2.6%)

Table 2 showed the medical history. According to the medical history, majority of the participants have gained weight, 79 (41.1%) 6-10kgs weight gained, 116 (60.4%) don't have hypertension, 183 (95.3%) don't have heart disease, 167 (87%) don't have thyroid issue, 168 (87.5%) don't have any surgery and 183 (95.3%) don't have gestational diabetes as demonstrated.

Table 2: Medical History of Study Participants

Variables	Frequency (%)
Experience Weight Gain	
No	31 (16.1%)
Yes	161 (83.9%)
Total Weight Gained (Kg)	
0	31 (16.1%)
1-5	46 (24%)
6-10	79 (41.1%)
11-15	23 (12%)
16-20	13 (6.8%)
Hypertension	
No	116 (60.4%)
Yes	76 (39.6%)
Heart Disease	
No	183 (95.3%)
Yes	9 (4.7%)
Thyroid Issue	
No	167 (87%)
Yes	25 (13%)
Surgeries	
No	168 (87.5%)

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Yes	24 (12.5%)
Gestational Diabetes	
No	183 (95.3%)
Yes	9 (4.7%)

Table 3 showed the fertility history. According to the fertility history, majority of the participants, 163 (84.9%) were trying to get pregnant, 170 (88.5%) are facing difficulty in getting pregnant, 169 (88%) had history of miscarriages, 72 (37.5%) had 2 miscarriages, 78 (40.6%) had 1 stillbirth, 83 (43.2%) had 2 preterm birth and 154 (80.2%) were taking PCOS treatment as demonstrated.

Table 3: Reproductive History of Study Participants

Variables	Frequency (%)
Trying To Get Pregnant	
No	29 (15.1%)
Yes	163 (84.9%)
Difficulty in Getting Pregnant	
No	22 (11.5%)
Yes	170 (88.5%)
Any Miscarriage	
No	23 (12%)
Yes	169 (88%)
Number of Miscarriages	
0	9 (4.7%)
1	34 (17.7%)
2	72 (37.5%)
3	42 (21.9%)
4	35 (18.2%)
Number of Stillbirths	
0	46 (24%)
1	78 (40.6%)
2	51 (26.6%)
3	15 (7.8%)
4	2 (1%)
Number of Preterm Births	
1	72 (37.5%)
2	83 (43.2%)
3	36 (18.8%)
4	1 (0.5%)
Taking PCOS Treatment	
No	38 (19.8%)
Yes	154 (80.2%)

Table 4 showed pelvic floor dysfunction. According to pelvic floor distress inventory, majority of the participants, 115 (59.9%) are facing severe pelvic organ prolapse, 135 (70.3%) with mild colorectal anal distress and 97(50.5%) with mild urinary distress as demonstrated.

Table 4: Prevalence of Pelvic Floor Dysfunction among Study Participants

Variables	Frequency (%)
Pelvic Organ Prolapse Distress inventory	
Mild	2 (1%)
Moderate	75 (39.1%)
Severe	115 (59.9%)
Colorectal Anal Distress Inventory	
Mild	135 (70.3%)
Moderate	51 (26.6%)
Severe	6 (3.1%)
Urinary Distress inventory	
Mild	97 (50.5%)
Moderate	66 (34.4%)
Severe	29 (15.1%)

Table 5 showed the Correlation test was applied between number of miscarriages and pelvic organ prolapse. The test indicates a positive correlation between pelvic organ prolapse and total number of miscarriages as P- value is less than 0.05.

Table 5: Correlation of Pelvic Organ Prolapse with Total Number Miscarriages

Total Number of Miscarriages	Pelvic Organ Prolapse			p-Value
	Mild	Moderate	Severe	
0	0	5	4	0.008
1	0	18	16	
2	0	26	46	
3	0	11	31	
4	2	15	18	
Total	2	75	115	

DISCUSSION

Pelvic Floor Dysfunction (PFD) presents a significant health challenge affecting women worldwide, particularly those grappling with Polycystic Ovary Syndrome (PCOS), a hormonal disorder commonly associated with infertility and other reproductive health issues [13]. This cross-sectional observational study was undertaken in Lahore, Pakistan, to investigate the prevalence of PFD among 192 married females aged 18 to 40 years who were clinically diagnosed with PCOS. No association of conception challenges was found with anorectal and urinary incontinence. The study by Taghavi *et al.*, provided insights into specific mechanisms linking PCOS and pelvic floor dysfunction, suggesting that hormonal disturbances and chronic inflammation may contribute synergistically to the development of PFD symptoms [14]. These findings complement these insights by demonstrating a notable burden of PFD symptoms among participants, reinforcing the clinical relevance of early detection and management strategies in this population [15]. The study by Antônio *et al.*, provided the results that there is no significance difference between case control groups in strength of

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pelvic floor muscles, in PCOS females [16]. Polycystic ovary syndrome (PCOS) is a complex endocrine disorder with systemic implications, including reproductive and metabolic challenges [17]. PCOS as an inflammatory and lifestyle-related endocrinopathy, affecting various physiological functions [18].The association between mental health and reproductive system disorders, emphasizing the psychological burden often experienced by women with PCOS. Furthermore, the impact of female reproductive disorders on sperm quality within the female genital tract, suggesting potential fertility complications [19].An in-depth analysis of the complications and challenges associated with PCOS, discussing its influence on conception and overall reproductive health.These studies collectively reinforce the significance of understanding the association between PCOS, pelvic floor dysfunction, and conception challenges, emphasizing the need for comprehensive clinical management [20]. The study is not generalized as it was only done in Lahore, due to limited time span.The study was done on married females only, but should also involve unmarried population for early detection and prevention of severity of the condition.

CONCLUSIONS

The study concluded that there is a high prevalence of pelvic floor dysfunction among PCOS females. Moreover, there is significant association of pelvic organ prolapse with miscarriages in female who are suffering from polycystic ovarian syndrome. Pelvic floor dysfunction in female can be minimized by educating female about strengthening exercises of pelvic floor muscle and so risk of miscarriages can be minimized.

Authors Contribution

Conceptualization: NF, MM
Methodology: AA, HT, SK, AR
Formal analysis: AR
Writing, review and editing: NF, MM

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The author received no financial support for the research, authorship and/or publication of this article.

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