



A Study On Selected Physical And Physiological Parameters Of Women Having Ovarian Cyst

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Abstract

Nowadays ovarian cysts are a common threat in reproductive women throughout the world. The present study was conducted to find out the physical and physiological problems may be faced by the women who have ovarian cyst. To carry out this study, total 30 adult female subjects (23-28 years) having ovarian cysts were selected. Selected Physical and physiological variables were Body mass index (BMI), fat percentage, fat mass, lean body mass and problems related with menstruation cycle. The selected methods for the evaluation of physical and physiological variables were, BMI was measured by formula weight in kg and height in meter square; and fat percentage, fat mass and lean body mass were calculated by using method YMCA skin fold Caliper. Physiological variables were determined by using questionnaire. The present study revealed that the value of Fat percentage (30.39%) of the patients having ovarian cysts was significantly high that may be considered in danger category. From the study, it was also observed that most of the female subjects faced irregular menstrual cycle, acne, abdominal pain, sleeping problem, anxiety, anger etc. Most importantly, a challenging problem, infertility, was being observed among the patients. It can be concluded that the ovarian cysts may have a negative impact on physiology of menstrual cycle and create undesired effects on obesity, fertility and behavioral changes of the patients.

Keywords: Ovarian cyst; Infertility; Menstrual cycle; Body composition

Introduction

Ovarian cyst is a common problem of the reproductive women [1]. It is mostly observed in women throughout their lifetime [2]. Ovarian cysts may occur at any stage of life but the chances of facing problem is high in menarchal phase of a female due to high production of endogenous hormone. The treatment with tamoxifen may increase the incidence of ovarian cysts in premenopausal patients and immunosuppressive drugs are also associated with a high prevalence of formation ovarian cysts whereas estrogen contraception reduces the risk of functional cysts development (3). Ovarian cysts are fluid-filled structures that may be simple or complex [4]. Formations of most ovarian cysts are related to ovulation, being either corpus luteum cysts or follicular cysts. Another type of cyst may be formed due to endometriosis, dermoid cysts, and cystadenomas. Many small cysts occur in both ovaries in polycystic ovary syndrome. Pelvic inflammatory disease may also result in cysts [5]. They are divided into three main groups: functional, benign and malignant. Approximately 1 in 25 women will have an ovarian cyst causing symptoms at some point in their lives. . In a premenopausal patient, the overall incidence of malignancy in ovarian cysts is 1 in 1000 and 3 in 1000 at the age of 50 [2]. About 95% of ovarian cysts is benign but not cancerous [6]. About is affecting 5 to 10% of women of reproductive age are suffered from Polycystic ovary syndrome which is one of the primary causes of infertility [4]. Prevalence is estimated between 14 and 18 percent in postmenopausal women and around 7 percent in asymptomatic women of childbearing age. Their incidence during pregnancy is between 0.2 and 5 percent and varies within the term of pregnancy [3]. In United States, alone a quarter million women per year have been diagnosed with ovarian cyst [1]. In 2012, ovarian cysts presumed benign have caused nearly 45,000 hospitalizations in France, bringing the annual risk of hospitalization for a woman residing in France to 1.3 percent [3]. So, the present study was conducted to find out the physical and physiological changes may be faced by the women due to presence of their ovarian cysts.

Methods and materials

For conducting this study total 30 women those who suffering from ovarian cyst for at least 1 year, were selected from different district of West Bengal, India. Among them 11 were married and 19 subjects were unmarried. The age of the subjects ranges from 23 to 28 years. Selected criteria were height, weight, BMI, Body fat percentage, fat mass and lean body mass and physiological changes in menstruation. Body Mass Index was calculated by using formula $\text{Body mass (kg)} \div \text{Stature (m)} \times \text{Stature (m)}$ [7]. Body fat percentage was measured by using YMCA Skinfold caliper calculator [8]. Physiological changes were findout by using faced valid Questionnaire.

Results and Discussion

Table – 1: Mean and standard deviation (SD) of personal data (age in year, height in cm and weight in kg) of the subjects.

Groups	Age (year)		Height (cm)		Weight (kg)	
	Mean	SD	Mean	SD	Mean	SD
Patient with Cyst	25.93	±1.69	157.86	± 5.16	58.16	± 7.05

Age, height, and weight of the subjects have been considered as personal data and their means and standard deviations (SD) were presented in table-1. Mean values and standard deviations of age of the selected group was 25.93 ± 1.69 . Mean scores and standard deviations of height of selected group was 157.86 ± 5.16 . Table-1 also showed the mean values and standard deviation of weight of selected group: 58.16 ± 7.05 .

Table-2: Mean and Standard deviation of selected physical variables.

Variables	MEAN	SD
BMI (kg/m ²)	23.33	± 2.33
Fat percentage	30.397	±5.665
Fat Mass (kg)	17.931	±4.853
Lean Body Mass (kg)	40.226	±3.858

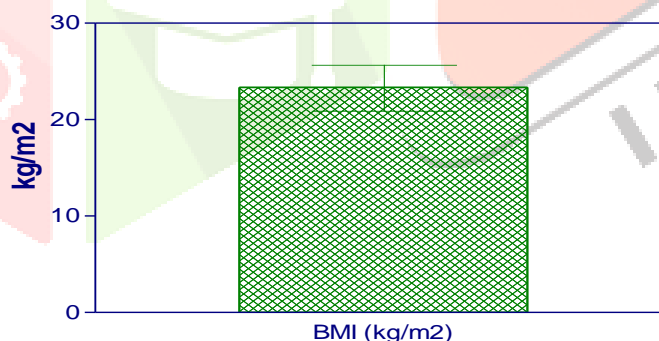


Figure1: Mean and standard Deviation of BMI

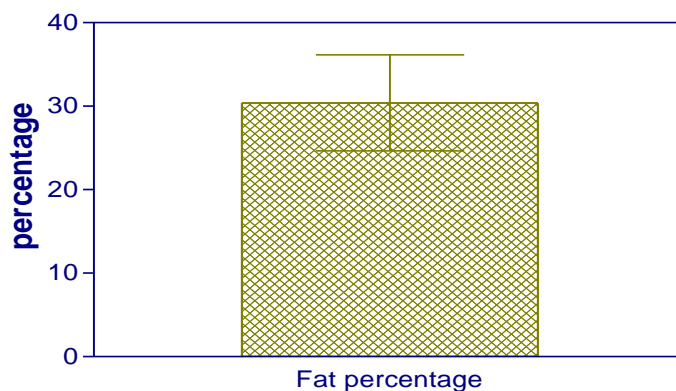


Figure 2: Mean and Standard Deviation of Fat percentage of selected group

Table- 2 showed the mean and standard deviation of selected physical parameters. From table- 2 it was found that mean and standard deviation of BMI of selected group was 23.33 and ± 2.33 ; for fat percentage it was 30.397 ± 5.665 . Percentage of storage fat that accumulates in adipose tissue, for male is about 12% of body mass and for female it is approximately 15% of body mass [7]. According to the standard body fat percentage chart made by Zawn Villines (2022), over 27.2% body fat is dangerously high for female of 20 to 29 years age [9]. According to the Body Mass Index scale the subjects were belonging in a healthy category, but on the consideration of body fat percentage they were belonged at dangerously high category (30.397%).

Table -3: Percentage of patient facing different selected Physiological problems for ovarian cyst.

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Q1.	Have patient facing regular menstrual period									
	Yes	No								
	40%	60%								
Q2.	No. of days patient facing bleeding in one menstrual cycle									
	Less than two days	Three to five days	More than five day	More than seven days						
	30%	50%	13.4%	6.6%						
Q3	Experience of following symptoms for last three days of menstrual cycle									
	Anger or irritability		Anxiety /tension		Sever abdominal pain		Difficulty with sleeping		Head ache	
	Yes-80%	No: 20%	Yes: 76.66%	No: 23.34%	Yes:80%	NO: 20%	Yes: 70%	No: 30%	Yes:80%	No: 20%
Q4	Any urinary problem faced by the patient									

	Yes	No							
	20%	80%							
Q5	Married Patient facing problem of infertility								
	100% (36.66 % of total selected subject)								
Q6	Patient facing problem for blood in urine								
	Yes	No							
	6.66%	93.3%							
Q7	Pain killer must have taken by the patient								
	yes	No							
	40%	60%							
Q8	Patient ever been admitted to hospital for pain								
	Yes	No							
	30%	70%							
Q9	Patient facing problem for acne problem								
	Yes-	No-							
	63.33%	33.37%							
Q10	Patient facing problem for excessive growth of body hair								
	Yes-	No-							
	26.66%	73.44%							
Q11	Colour of period								
	Light red	Dark red	Light brown	Medium brown	Dark brown	Black			
	6.66%	23.34%	16.66%	33.34%	16.66%	3.34%			
Q12	Hormonal treatment taken by the patient within 3 month								
	Yes	No							
	70%	30%							

Table-3 showed the number and percentage of subjects facing selected physiological problems in menstruation. The total 40percent subjects have regular menstrual cycle but 60percent females faced irregular menstruation cycle. The total subjects have faced abnormal bleeding during menstrual cycle less than 2 days 30percent, three to five days 50percent, more than five days 13.34 percent and more than seven days 6.66percent.

From table-3 it was also found that, 80 percent subjects felt irritability, 76.66 percent realized anxiety, 80 percent faced severe abdominal pain, 70 percent subject realized sleeping difficulty and 80 percent faced head ache during menstruation. All the selected subjects faced more or less problems of menstruation cycle for last three days. All the selected married subjects faced the problem of infertility.

From table-3 it was observed that, only 20percent faced the urinary problem and only 6.66 percent subject faced the problem of blood release with urine. Table-3 showed that, total 70percent patient took the hormonal therapy as treatment procedure.

M. Sadia and A. Radu (2022),they studied on Ovarian Cyst and they found that moderate to severe sharp lower abdominal pain with or without nausea and vomiting is a common presentation of the patient's symptoms whenever an ovarian cyst is present. Present study also showed that 80 percent among the selected subjects faced severe pain, and 40 percent subjects were compelled to take painkiller where as 30 percent were compelled to take admission in hospital [4].

A.Marzieh and E. Forouzan (2017) studied on Psychosomatic aspects of polycystic ovarian syndrome: a review. They reviewed 130 articles from 1983 to 2016. They found that a number of disorders are associated with poly cystic ovarian syndrome like depression, anxiety, impaired body image and body dissatisfaction, eating disorder, sexual dysfunction and reduced quality of life. They also found that menstrual disturbances like irregular periods and hyperandrogenism (hirsutism or acne, and very often obesity). They also found that the majority of females with PCOS reported fertility problem, eating disorder, body weight and body image. Present study also revealed that female with Ovarian cyst faced problem of infertility [10]. S. West et al. (2014) found an irregular menstrual cycle and hyperandrogenism in adolescence seem to be early symptoms of PCOS. Importantly, girls presenting with menstrual irregularity at 16 years were more likely to suffer from infertility problems at 26 years than the non-symptomatic girls [11] . Hyperandrogenaemia is associated with menstrual irregularity, hirsutism and acne in women [12]. Treatment of PCOD in modern science stressed upon the management of obesity [3]. The medicinal therapy involves hormonal treatment. Present study also revealed that 60 percent female with cyst problem had taken hormonal therapy.

Follicular and Corpus Luteal cysts continue to grow because of hormonal stimulation either may be the excessive stimulator of FSH or the absence of the usual LH surge at mid-cycle. If the dissolution of the corpus luteum, secretes progesterone, does not occur, it may result in a corpus luteal cyst. Overstimulation in elevated human chorionic gonadotropin (hCG) forms Theca lutein cysts. Due to excess androgen hormones in the body creates the enlarged ovaries; which cause the ovaries to form cysts and increase in size means Polycystic ovary syndrome is a disorder affecting 5 to 10% of women of reproductive age and is one of the primary causes of infertility [4]. Hormones of the endocrine system are affecting virtually every organ in the human body. Human physiologic processes such as homeostasis, metabolic demand, development, and reproduction are all

possible because of hormones and the processes mediated by their actions [13]. So, hormonal imbalance may be the primary cause of ovarian cyst which ultimately alters the physiology of menstruation.

Conclusions:

Ovarian cyst may have impact on physical health of the patients and it also influenced the physiology of menstrual cycle negatively. It may also create many major problems like irritability, anxiety, obesity, abdominal pain, problem of infertility etc.

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