Quality of Life among Women with Polycystic Ovary Syndrome: A Cross-sectional Study

Faculty of Medicine

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled

QUALITY OF LIFE AMONG WOMEN WITH POLYCYSTIC OVARY SYNDROME

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DECLARATION

This work has not previously been accepted in substance for any degree and isn't concurrently submitted in candidature for any degree. This dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy.

I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority. I confirm that the electronic copy is identical to the bound copy of the Thesis.

In case of dissemination the finding of this project for future publication, research supervisor will highly concern, it will be duly acknowledged as graduate thesis and consent will consent taken from the physiotherapy department of Bangladesh Health Professions Institute (BHPI).

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Acronyms

- **Qol** : Quality of life.
- **PCOS** : Polycystic ovary syndrome.
- **PCOSQ** : Polycystic ovary syndrome questionnaire.
- **MPCQOSQ** : The modify polycystic ovary syndrome questionnaire.
- **HRQoL** : Health related quality of life questionnaire.
- **SCMST** : Saic college of medical science and technology.
- **SPSS** : Statistical Package for Social Science.
- **WHO** : World Health Organization

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Abstract

Background: Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders among women of reproductive age. Physical symptoms in PCOS cause depression and decrease the Quality of Life (QoL). ***Objective:*** Objective of the study to assess the level of quality of life among women with polycystic ovary syndrome in different areas of Bangladesh. ***Methods:*** The cross sectional study was conduct from January to June 2023.PCOS Questionnaire used for assessing quality of life and a pre-tested structured questionnaire was used to collect socio-demographic information. SPSS 25 was used for statistical analysis. ***Results:*** A total of 101 participants completed the survey questionnaires. The mean and SD of age and BMI was 27.01±6.932 and 26.210±4.3153 respectively. The correlation between BMI and total score of the participant's correlation co-efficient (r) -0.342 and p value 0.000 that was highly statistically significant. ***Conclusions:*** PCOS is a multi-symptomatic disease, which entails a number of consequences, both physical as well as psychological. Depression, irregular menstrual period, muscle cramps and high BMI decrease the quality of life.

Key word: *Polycystic ovary syndrome, PCOSQ, Quality of life, Women*

CHAPTER – I INTRODUCTION

1.1 Background

Polycystic ovary syndrome is one of the common endocrine disorders in women of reproductive age. It is estimated that 5-10% of women afflicted by the disease. The symptoms typically related to PCOS, including amenorrhea, oligomenorrhea, hirsutism obesity, infertility, anovulation and acne, can result in temper disturbances together with symptoms of depression, marital and social maladjustment and impair sexual functioning (Bazarganipour et al., 2013). Understanding the elements that make contributions to health related quality of life(HRQOL) is essential for growing the maximum suitable interventions for enhancing or preserving the HRQOL in polycystic ovary syndrome (Bazarganipour et al., 2014).

PCOS is the most common hormonal disturbance inflicting lifelong bodily and financial burden and may have an effect on women's fitness even after menopause (Puurunen et al., 2011). It is taken into consideration as main reason of infertility and is associated with adverse clinical complications including reproductive (menstrual irregularity,infertility), metabolic (insulin resistance, diabetes mellitus, cardiovascular risk), and mental disability (anxiety, depression) (Blay et al., 2016). These threatening complications can cause mood disorder, consuming disorders, social and marital conflicts and sexual dysfunction. All have been mentioned as motives for extensive discount in quality of life in multiple research and meta-analyses (Balikci et al., 2014).

Obesity and weight growth are the environmental elements linked to the disclosure of PCOS. Clinical symptoms are influenced by the hormonal makeup as well as the target tissues' susceptibility to steroid hormones and the presence of obesity. This complex etiology accounts for the variety and varying degrees of severity of clinical manifestations (Ramos et al., 2012). Quality of life is a wide and multidimensional concept. It is described as an individual's perception of their very own lifestyles within side the context in their culture and value systems, and their non-public goals, requirements and concerns (Theofilou,P., 2013).

Studies at the quality of life of people identified with persistent illnesses are of interest to the health care professionals. They allow to them to learn about the

subjective impact of the disease on the patient's life and wellbeing, as well as its impact on care and the diagnostic and therapeutic interventions made (Didarloo,A.,and Alizadeh,M., 2016). Majority of women present with irregular periods but women with regular menses may have anovulation which makes PCOS the major cause of anovulation-associated infertility (Fauser BCJM., 2012). Diagnosis of PCOS includes a heterogeneous group of women patients with regular ovulatory cycles with relatively normal weight as well as in women with fully developed clinical symptoms: the impact on psychosocial functioning largely is concerned among the second group of women (Moran et al., 2010).

The World Health Organization has defined quality of life as the individuals perceptions and emotions regarding his/her lifestyles situation in the framework of the culture and fee structures and primarily based on the individuals ideals, priorities, expectations, standards, and interests that this perception and feelings have various scopes (mental, physical, social relationships, level of independence, environmental, and personal opinions). It is a totally subjective count number that cannot be found with the aid of using others and relies upon at the individual's perception of the various aspects of life. (Lucas-Carrasco., 2012; Power and Green., 2010). In general, health related quality of life has been defined in the form of multiple conceptions including the physical, emotional, and social aspects of health that are related to special disease or their treatments (Jones et al., 2011).

Polycystic ovary syndrome (PCOS) happens in all ethnic groups with differing occurrence depending on weight, diet, lifestyle, and ethnic background.(Boyle etal.,2012). But the significance of its dimensions varies in societies replying at the religious, racial, culture and social factors (Wijeyaratine et al., 2013). Excessive frame weight has been extensively mentioned as an critical difficulty to women with PCOS.(Kaczmzrck et al., 2016). Hirsutism is round in about 70% of women with PCOS and is frequently mentioned through sufferers as being one of the maximum stressful components of PCOS (Fauser et al., 2012). Women with PCOS who experience hirsutism have often expressed that they feel "unfeminine".

Mental fitness is particularly applicable in polycystic ovary syndrome management as its far important to self-efficacy round a healthful lifestyle (including physical activity). Therefore optimization of physical activity as a treatment for PCOS, as endorsed by the primary evidence primarily based totally guideline for the assessment and management of PCOS (Teede, et al., 2011). The prevalence of

polycystic ovary syndrome in better amongst Pakistani women (52%) than amongst western Caucasian women, e.g. 20%-25% in UK (Akram.M and Roohi.N., 2015). The Indian Fertility Society reported a prevalence of 3.7%-22.5% in India (Malik et al., 2014).

Another characteristic of PCOS is infertility, which has been associated with poor mental symptoms and reduced fine of lifestyles in affected women. Menstrual irregularities together with amenorrhea are not unusual pace reviews among women with PCOS (Moran et al., (2015). Semi-structured interviews with women with PCOS found out that menstrual irregularities are related to low feminine identity. Sociocultural elements can also additionally lead some women to perceive menstrual problem and infertility as extra complex than different capability of polycystic ovary syndrome. Therefore, the purpose of cross-sectional research was to assess quality of life and determine factors related to its impairment among women, affected by polycystic ovary syndrome (Moran et al., (2015).

1.2 Rationale

Polycystic ovary syndrome is a complex heterogeneous endocrine disorder. Women with Polycystic ovary syndrome (PCOS) have experienced adverse social, physical, emotional, and psychological consequences that impacted their quality of life. PCOS can be caused by a variety of reasons. It can be caused by either genetics or a poor lifestyle, or a combination of both. In Bangladesh, a significant percentage of women have been suffering from PCOS. Individuals with PCOS have to face many psycho-social problems. Among the few studies that were found locally not sufficient to present the real picture of the situation due to shortage of information and study were conducted long before which does not represent the present situation in this regard. However, there are no such studies in Bangladesh that adequately evaluated the quality of life in women suffering from PCOS. Sociocultural factors may lead some women to perceive menstrual problems and infertility as problematic as other features of PCOS. The determinants of the quality of life of women with polycystic ovary syndrome are not fully understood. The aim of the study is to assess the level of quality of life among women with polycystic ovary syndrome. For this reasons, one study is necessary to conduct on this topic to take the preventive measures and minimized the gap of the knowledge in this regard. Therefore, the purpose of the cross-sectional research to assess quality of life and determine factors related to its impairment among women affected by the syndrome. That's why I want to do this research. I think if someone wants to do research on this topic in the future my research will inspire him or her and can learn a lot from this research.

1.3 Research Question

What is the level of quality of life among women with polycystic ovary syndrome different areas of Bangladesh?

1.4 Objectives of the study

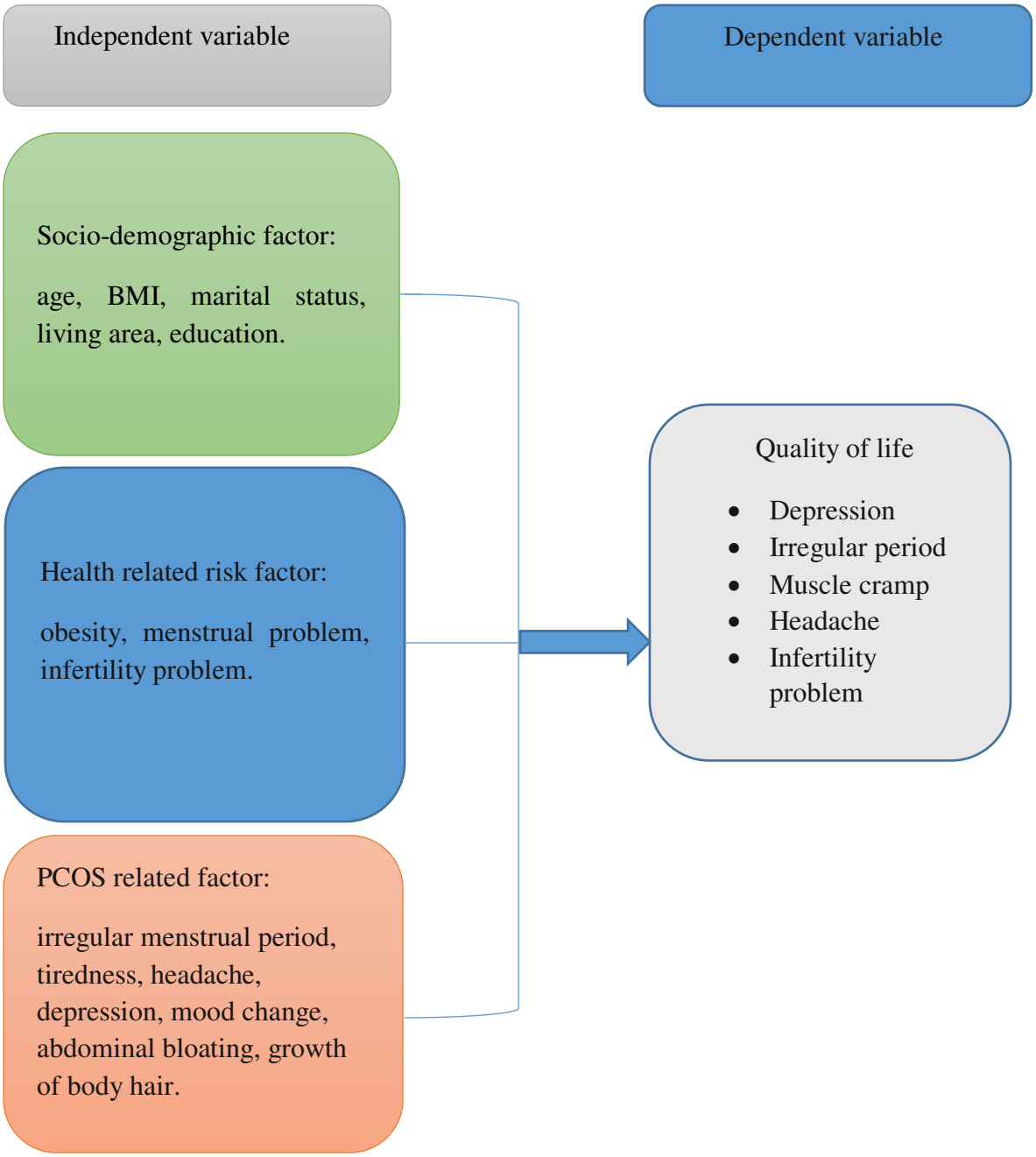
1.4.1 General objective:

- To assess the level of quality of life among women with polycystic ovary syndrome in different areas of Bangladesh.

1.4.2 Specific objectives:

- To determine the different health issues concerning polycystic ovary syndrome among the women.
- To examine the association between quality of life with age and BMI of polycystic ovary syndrome.
- To assess the socio-demographic information of women with polycystic ovary syndrome.

1.5 List of variables of the study



1.6 Operational definitions of the variables

Polycystic ovary syndrome (PCOS): Polycystic ovary syndrome (PCOS) is a condition in which the ovaries produce an abnormal amount of androgens, male sex hormones that are usually present in women in small amounts. The name polycystic ovary syndrome describes the numerous small cysts (fluid-filled sacs) that form in the ovaries.

Quality of life (QOL): Quality of life (QOL) is defined by the World Health Organization as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".

Polycystic ovary syndrome questionnaire (PCOSQ): The PCOSQ consists of five domains, each relating to a common symptom of PCOS; body hair, emotions, infertility, menstrual problems and infertility. Each question on the PCOSQ is associated with a 7- point scale in which 7 represents optimal function and 1 the poorest function.

CHAPTER – II LITERATURE REVIEW

Polycystic ovary syndrome (PCOS) impacts 5-10% of the population of the women. The exact etiology of PCOS stays unclear, however it's far believed to end result from complicated interactions among genetic, behavioral and environmental factors. The spectrum of its signs and symptoms such as hirsutism, skin problems, obesity and finally infertility has a large terrible effect on the individuals mental and interpersonal functioning. Polycystic ovary syndrome symptoms can lead to significant deterioration in quality of life and be highly stressful negatively affecting mental health and sexuality. Fear signs and symptoms like palpitation, being out of breath and anxiety is probably due to many somatic diseases. Moreover, detection and continuous considering infection can cause massive bad effect on individual functioning in society. PCOS can be a component doubtlessly favoring the incidence of temper disorders and depression. Biological, social and mental results of PCOS amongst women of reproductive age are opening a new perspective on management of women's health in these patients (Agnieszka et al., 2015).

The World Health Organization has described quality of life as the individuals perceptions and emotions regarding his/her lifestyles situation with inside the framework of the cultural and value system and based on the individuals ideals, priorities, expectations, standards, and pastimes that this perception and emotions have numerous scopes (mental, physical, social relationships, degree of independence, environmental, and private opinions). It is a very subjective count number that can't be located by others and depends on the individual's notion of the various aspects of life (Lucas-Carrasco., 2012; Power & Green., 2010).

Hyperandrogenism and oligoovulation are included in the 1990 National Institutes of Health (NIH) diagnostic criteria for PCOS but other conditions that mirror PCOS such as adult-onset congenital adrenal hyperplasia, hyperprolactinemia, and androgen-secreting neoplasms are not. The Endocrine Society advises, however, that PCOS be identified when adult women exhibit two of the symptoms listed below: excessive androgen production, anovulation, and pearl-sized ovarian cysts (Legro et al ., 2013).

Many chronic illness have intellectual fitness impacts and are associated with reduction in quality of life and will increase in depressive signs and symptoms

(Hedayati et al., 2012). Irregular menstrual cycles were also a predictor of quality of life in these women, as women with menstrual cycle disorders experienced lower quality of life than women with normal menstrual cycles. This result is consistent with 2 studies conducted in Malaysia and Hong Kong, in which menstrual disorders in women affected health-related quality of life (Nur Azurah et al., 2012). In PCOS signs and syndrome and co-morbidities growth the danger of adverse intellectual fitness consequence. Coping with the situation itself, fears concerning infertility, lack of femininity and sexuality, body image concerns and decrease self-confidence might also additionally all make contributions to poorer intellectual fitness outcomes (Deeks et al., 2011).

Mental fitness is particularly applicable in polycystic ovary syndrome management as its far important to self-efficacy round a healthful lifestyle (including physical activity). Therefore optimization of physical activity as a treatment for PCOS, as endorsed by the primary evidence primarily based totally guideline for the assessment and management of PCOS (Teede, et al., 2011). The prevalence of polycystic ovary syndrome in better amongst Pakistani women (52%) than amongst western Caucasian women, e.g. 20%-25% in UK (Akram.M and Roohi.N., 2015). The Indian Fertility Society reported a prevalence of 3.7%-22.5% in India (Malik et al., 2014).

Prevalence of loneliness, generalized anxiety disorder and depressive disorder amongst the women with PCOS has been 71%, 88%, and 60%, respectively. Among the mental illness, mild, moderate, and severe cases were 39%, 18%, and 14% for loneliness; 39%, 23% and 26% for generalized anxiety disorder; 35%, 18%, and 7% depressive disorder. According to the prevailing findings, obesity, financial condition, physical exercise, mealtime, meals habit, everyday water consumption, birth control method, and long-time period oral contraceptive pills contribute to growing mental health disorder among women with PCOS in Bangladesh (Moynul et al., 2022).

PCOS is related to massive short and long period fitness problems; those consist of many metabolic and cardiovascular complications in addition to mental disorders including depression, anxiety, sexual dysfunction, and social problems, which have an effect on woman's identification and health related quality of life (QOL) (Hung et al., 2014). Global research has shown that PCOS has a negative impact on the quality of life (QoL) in patients with PCOS. Hence, there has been an increasing focus on this aspect. However, there are very few studies done in India

with a perspective on depression and its correlation with different factors of QoL in PCOS. Hence, this study was undertaken to study the prevalence of depression in females suffering from PCOS and to assess its correlation with QoL (Fauser,B.C.J.M., 2012). Mean age of the patients was 26.39 (SD=5.80) years. Of the 84 patients, 22 (26.2%) were primary school graduates, 19 (22.6%) were secondary school graduates, 28 (33.3%) were high school graduates, and 15 (17.9%) were university graduates (Atilla et al., 2018).

One of the most prevalent endocrine disorders that have the potential to significantly lower quality of life is polycystic ovarian syndrome (PCOS). The goal of this study was to identify the factors that influence a woman with PCOS's quality of life. In 2015, 174 PCOS-afflicted women who visited both public and private reproductive clinics in Uremia (West Azerbaijan, Iran) participated in this cross-sectional study. The socio-demographic and obstetrical features, quality of life, and Beck Depression Inventory II questionnaires were used to collect the data. The effect rate of the independent factors (depression and socio-demographic features) on the dependent variable (quality of life) was estimated using multivariate linear regression. In this study, a total quality of life score of 45.8 (11.3) was derived as the mean (standard deviation) of total score of the quality of life was obtained, 45.8 (11.3) in the range 0- 100. The highest and lowest mean scores were in the subdomains of weight and hirsutism. The variables of depression, body mass index, woman's job, menstrual cycle intervals, and sexual satisfaction were predictors of the quality of life in women with PCOS. Because of various effective factors on quality of life in these women such as depression, necessary strategies must be implemented to control these factors and improve the quality of life (Aliasghari et al., 2017).

In this research, quality of life in women with PCOS who experienced menstrual cycle disorders was lower as compared with those with regular menstrual cycles. This finding is in line with those of studies performed in Hong Kong (Chung, Chan, Yiu, Lao, & Chung, 2011), Malaysia (Azurah, Sanci, Moore, & Grover, 2013), and England (Jones et al., 2011) on women with PCOS that found menstrual cycle disorders were related to quality of life. Bazarganipour and her colleagues in a cross-sectional study on 300 married Iranian women with PCOS showed that infertility and menstrual domains were the most affected areas of HRQoL (Bazarganipour et al., 2013).

The BMI variable was another predictor of quality of life in women with PCOS; quality of life in overweight women was significantly lower as compared with those with normal BMI (18.5- 24.9) women with PCOS that concluded limited energy in the diet of women with PCOS who were overweight was one of the factors that improved symptoms of depression and HRQoL. Moreover, it concluded that exercise, compared to diet alone, had identical effects in improving quality of life and depressive symptoms (Thomson et al., 2010) Therefore, the strategies such as nutritional education, consultation sessions should be used for these women.

In addition, as the infertility and irregular menstrual cycles are more important in married women, the cause of the observed contrast may probably be due to difference in marital status of participants in the present study and the study conducted in Germany. In our study, only about one-fifth of participants (22.98) were single but in the above mentioned study, half of women (50%) were single (Mirghafourvand et al., 2017).

Aliasghari et al indicated that the total score for quality of life in the studied women was average, and they obtained the highest and lowest mean scores in the subdomains of weight and hirsutism, respectively. The variables of depression, BMI, woman's job, menstrual cycle intervals, and sexual satisfaction were predictors of the quality of life in women with PCOS (Aliasghari et al., 2017).

Occupations of women with PCOS were another predictor of their quality of life in this study; housewives enjoyed better quality of life compared to employed women. A study conducted in Brazil on 2054 workers showed that exposure to adverse psychosocial conditions of work has a negative impact on HRQoL among financial service workers (Silva & Barreto, 2012).

This study aimed to evaluate the clinical signs and health hazards of polycystic ovarian syndrome (PCOS) in Pakistan and how they affect people's quality of life (QOL). Women of reproductive age who visited the gynecology, obstetrics, and endocrinology departments at primary and tertiary care hospitals in Abbottabad, Kohat, and Islamabad were the subject of a thorough cross-sectional study on PCOS. 440 patients in total who met the inclusion criteria were included. Symptoms and health hazards, such as adverse drug reactions, problems, illogical prescription or under prescription, and drug-drug interactions, were particularly listed on a checklist. The QOL of PCOS patients was assessed using the Short Form-12 questionnaire. The chi-square test, analysis of variance, and post hoc analysis were used to evaluate the

data for descriptive and inferential statistics. Patients displayed the five hallmarks of PCOS, including obesity (n = 352, 80%), acne (n = 296, 67.3), hirsutism (n = 299, 68%), hyperglycemia (n = 278, 63.2%), and irregular menstruation (n = 316, 71.8%). 268 individuals (61%) had numerous cysts measuring more than 10 mm in diameter, according to ultrasonography. Untreated PCOS patients had a high prevalence of health risks, including hypertension (n = 87, 19.8%), diabetes (n = 268, 60.9%), sleep apnea (n = 11, 2.5%), infertility (n = 146, 33.2%),increased endometrial thickness (n = 21, 4.8%), miscarriages (n = 68, 15.5%), high cholesterol level (n = 85, 19.3%), and hyperandrogenism (n = 342, Depression was the main cause of low QOL in the majority of patients (n = 374, 85%).hyperandrogenism (77.2%) in n = 342. The majority of patients (n = 374, 85%) had low QOL scores, with depression being the main cause of low QOL. In addition to novel findings, this study discovered a link between low QOL and depression in PCOS patients, indicating the need to reevaluate management guidelines and psychological health assessments of PCOS patients (Sidra et al., 2019).

A total of 440 PCOS patients were examined; of these, 274 (62.3%) were between the ages of 15 and 30 and 166 (38%) were between the ages of 31 and 44. Weight measures showed that most of the patients (74.5%) were normal to almost obese, over a quarter (24.5%) was morbidly obese, and only small percentages (0.9%) were underweight. Among the study participants, 76 (17.3%) were single, compared to 364 (82.7%) who were married.(Sidra et al., 2019). Quality of life is primarily based totally at the notion of lifestyles and is quite subjective (Mirghsfourvand et al., 2016).

The quality of life questionnaire (Cronin et al., 1998) for women with PCOS (PCOSQ) consists of 26 items in which the quality of life was assessed for dimensions of emotions, hirsutism, weight, infertility, and menstrual disorders. All gadgets are scored primarily based totally on likert scale starting from 1 (strongly/all of the time) to 7 (no problems/never). Validity and reliability of the Persian questionnaire turned in to showed by Amini, Ghorbani, and Montazeri (2012) Cronbach a coefficient in all dimensions changed into better than 7 (Aliasghari et al., 2016).

The prevalence of depression among with polycystic ovary syndrome is very excessive and varies from 28% to 64% (Deeks et al., 2010), such as different form of feeling sick, depressed mood, melancholy, sadness, no matter the reason of the disorder. The signs and symptoms of depression include: depressed mood, lack of

hobby and the capacity to enjoyment, strength discount main to intensified fatigue and lack of activity. Other common symptoms consist of bad awareness and attention, low self-esteen, sleep disturbances, lack of appetite, thougths, developments or even suicide attempts (Bazarganipour et al., 2013). Anxiety is another common disturbance in women suffering from polycystic ovary syndrome, varies from 34% to 57%. Multiple factors contribute to the excessive occurrence of depression and anxiety in women with PCOS. The maximum probably cause of psychological headaches id bodily signs skilled through sufferers with PCOS (Mansson et al., 2011).

Additionally, PCOS has medical implications throughout the lifespan and is applicable to associated own circle of individuals with elevated risk for metabolic situations pronounced in first-degree relatives (Teede et al., 2010). Long time period unfavorable fitness issues which include improved risk of insulin resistance, obesity, type 2 diabetes, hypertension, dyslipidemia, inflammation and subclinical cardiovascular disease (Moran et al., 2010). Diagnosis of polycystic ovary syndrome consists of heterogeneous group of women patients with everyday ovulatory cycles with tremendously normal weight in addition to in women with absolutely evolved clinical symptoms: the effect on psychosocial functioning in largely is concerned among the second group of women (March et al., 2010).

A current cross-sectional study among 300 Iranian women with polycystic ovary syndrome was done to estimate the superiority of mood disorders and to examine a range of predictors for mental well-being the use of the Hospital Anxiety and Depression Scale (HADS). In 32% of those women an increased HADS tension became shown, while despair changed into excessive in 5%. Quality of life in these women was significantly impaired in those women and the excessive occurrence of depression and anxiety in this population suggests that initial evaluation of all women with polycystic ovary syndrome should also include assessment of mental health disorder (Bazarganipour et al., 2013).

The Modified Polycystic Ovary Syndrome Health-Related Quality of Life Questionnaire (MPCQOSQ) is a valid measure of HRQoL in PCOS patients. It includes seven-factor Likert scale questions from six HRQoL region or domains: emotional disturbance (eight items), hirsutism (five items), infertility (four items), weight (five items), menstrual (four items), and acne (four items). The overall rating of every area is based on the score obtained divided by the number of questions asked in that field. In sum, the biggest HRQoL impaired in every discipline is indicated by

rating of 1, and 7 suggests no problems or difficulties (Cronin et al., 1998). The validity and reliability of this questionnaire have been confirmed in Iran (Bazarganipour et al., 2012). Multivariate analysis revealed hirsutism measured by a Ferriman-Gallwey scale as a significant predictor of psychological distress, suggesting that in South Asians psychological distress was related to hirsutism rather than obesity, which affects Europeans with PCOS. Another study conducted in Sri Lankan women with PCOS showed that hirsutism in women with PCOS is significantly associated with psychological distress (Kumarapeli et al., 2011).

The diagnosis of infertility is almost always accompanied to the great psychological distress, so-called ‘‘infertility stress’’. The consequences of such stress include: loss of interest in daily activities, depression, difficulty in maintaining interpersonal relationships and high levels of anxiety. In addition, this infertility stress leads to problems with concentration and attention, sleep disorders, substance abuse, a sense of helplessness, guilt, worthlessness and even thoughts of suicide (Moran et al., 2012).

CHAPTER – III METHODOLOGY

3.1 Study design

It was a descriptive type of cross-sectional study carried out with the objective of assessing the quality of life among the women with polycystic ovarian syndrome.

3.2 Study place

The relevant data for the present study were collected from the women with polycystic syndrome attending the obstetrical and gynecological society of Bangladesh (OGSB) hospital in Dhaka and Padma lab and clinic in Joypurhat district .

3.3 Study period

The duration of the study was 12 months from 1st July 2022 to 30th June 2023.

3.4 Study population

The women with polycystic ovary syndrome constituted the study population for the present study.

3.5 Sample size

Sample size for this study was calculated by the following equation.

$$n = \frac{z^2 pq}{d^2}$$

Here,

n=sample size

z= Confidence level at 95% (Standard value of 1.96).

p= prevalence 21.27% (Ritu et al., 2020).

q= 1-p

d= margin of error at 5% (Standard value of 0.05).

so,

$$n = \frac{z^2 pq}{d^2}$$

$$n = \frac{0.2127 \times (1-0.2127) \times (1.96)^2}{(0.05)^2}$$

$$n = \frac{0.2127 \times 0.7873 \times 3.84}{0.0025}$$

$$n = \frac{0.643041}{0.0025}$$

n=257.2164

n=258

So, sample size is 258.

The calculated sample size was 258. But data were collected from 101 participants.

3.6 Sampling technique

Convenience sampling technique was applied to select the study subjects for this study.

3.7 Eligibility criteria

3.7.1 Inclusion criteria

- Adult female patients in the reproductive age (18-45) years.
- Patients willing to give informed consent.
- Patients who have consulted a gynecologist or are already diagnosed as PCOS by self –report on history.

3.7.2 Exclusion criteria

- Patients with known psychiatric illness.
- Patients having a concurrent, significant medical illness.

3.8 Method of data collection

Data were collected through the face to face interviews with participants using the pretested questionnaire**.**

3.9 Instrument and tools of data collection

- PCOS questionnaire:

  It is a polycystic ovary syndrome questionnaire that contains the questions on relevant variables used for assessing the quality of life of the women with polycystic syndrome.
- A pre-tested structured questionnaire was used to collect socio-demographic information.

3.10. Procedure of data collection

Before collecting the data from the participants, the researcher obtained permission from the concerned authority of obstetrical and gynecological society of Bangladesh (OGSB) hospital in Dhaka and Padma lab and clinic in Joypurhat district. Then the women with polycystic syndrome were approached by the researcher herself and explained the aims and objectives of the study in details. The patients who agreed to participate were included for the study. Obtaining written informed consent, the

researcher started interview with the individual participant using PCOS questionnaire to elicit information on quality of life. After completing the interview the researcher thanked the respondents.

3.11. Data management:

At the end of the day the collected questionnaires were checked for any error or inconsistency. Necessary corrections were done accordingly.

3.11.1: Analysis of data:

Analysis of data was carried out according to the objectives. Descriptive statistics included frequency, percentage, mean and SD were used to describe quality of life. Spearman correlation was used to determine the association between total score with age and BMI of polycystic ovary syndrome.

3.12 Ethical consideration

The investigator obtained written permission from ethical review board (SCMST). Ethical review board informed by written document about aims and objectives of the study and that the patients of the study would not be harmed or the clients name, address and personal information would be kept confidential by the investigator and the dates would not be shared with others.

The present study was a descriptive one. No invasive technique was used in this research. Only interview technique was applied to collect information from the participants.

3.13 Limitations of the study

1. The calculated sample size was 258. But data were collected from 101 participants due to shortage of time of data collection. So the small number of participants affected the result of the study were not representatives of the study population.
2. Convenience sampling technique was applied to select the study subjects for this study. As a result the representatives of the participants could not be ensured. So generalization of the finding could not be achieved by the present study.
3. Data for the present study were collected from two places. It would be better if the participants could be selected from other parts of the country.
4. The researcher is a student of the 4^{th} year B.Sc. in physiotherapy. This thesis is her first research work. So a number of deficiencies are in the thesis.
5. In the initial stage of the data collection required number of participants was contacted. But latter on many participants did not take part in the interview despite repeated requests. As a result the number of the participants became less than estimated.

CHAPTER – IV RESULTS

The objective of the study was to assess the level of quality of life among women with polycystic ovary syndrome in different areas of Bangladesh. Data were collected through the face to face interviews with participants using a pretested questionnaire and PCOS questionnaire for quality of life**.** The data were analyzed with the Microsoft Office Excel 2010 with SPSS 25 version software program. In this study the researcher used frequency tables, bar chart, figure, pie chart and description of the variables to present the result of the study.

Table no.1 Frequency distribution of the respondents by age.

Age group in years	Frequency	
	N	%
18 - 24	43	42.6
25 - 31	37	36.6
32 - 38	12	11.9
39 - 45	9	8.9
Total	101	100
Mean ± SD	27.01±6.932	

It was revealed in the study that 43 (42.6%) participants belonged to the age group of 18 - 24 years. It was also found that 37 (36.6%) participants were in the age group 25 – 31 years, 12 (11.9%) participants belonged to the age group 32-38 years and 9 (8.9%) participants belonged to the 39 – 45 years age groups. The mean age and SD was 27.01 years and 6.932 respectively (Table no 1).

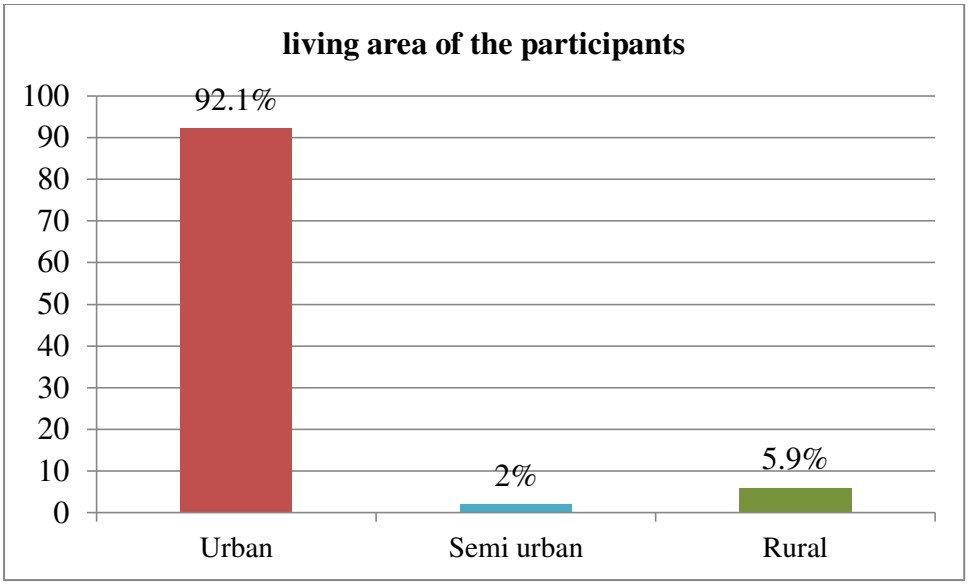


Figure No: 1 Living area of the participants

Regarding living area, it was found that 93 (92.1%) participants lived in urban area, 2 (2%) participants lived in semi-urban area and 6 (5.9%) participants lived in rural area (Figure no.1).

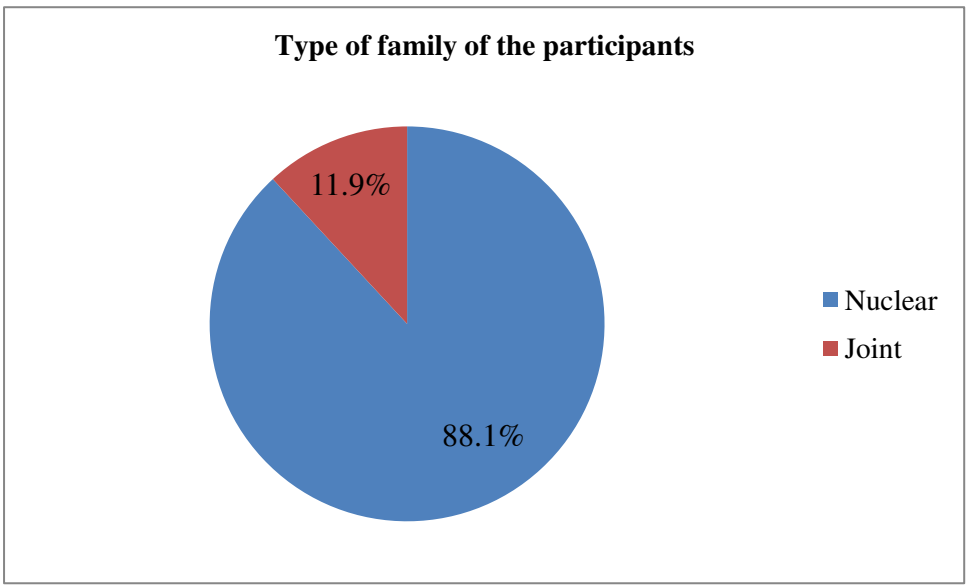


Figure No 2: Type of family of the participants

It was revealed that out of 101 participants, 89 (88.1%) participants belonged to the nuclear family and 12 (11.9%) participants belonged to the joint family (Figure no.2).

Table No 2: Educational level of the participants.

Educational level	Frequency	
	N	%
Illiterate	2	2.0
Primary	14	13.9
Secondary	15	14.9
Higher secondary	22	21.8
Graduate	35	34.7
Post graduate	11	10.9
Others	2	2
Total	101	100

About educational status of the participants, the study showed that 15 (14.9%) participants had secondary level of education, 22 (21.8%) participants passed Higher secondary level, 35 (34.7%) participants were graduate and 2 (2.0%) participants were illiterate (Table no.2).

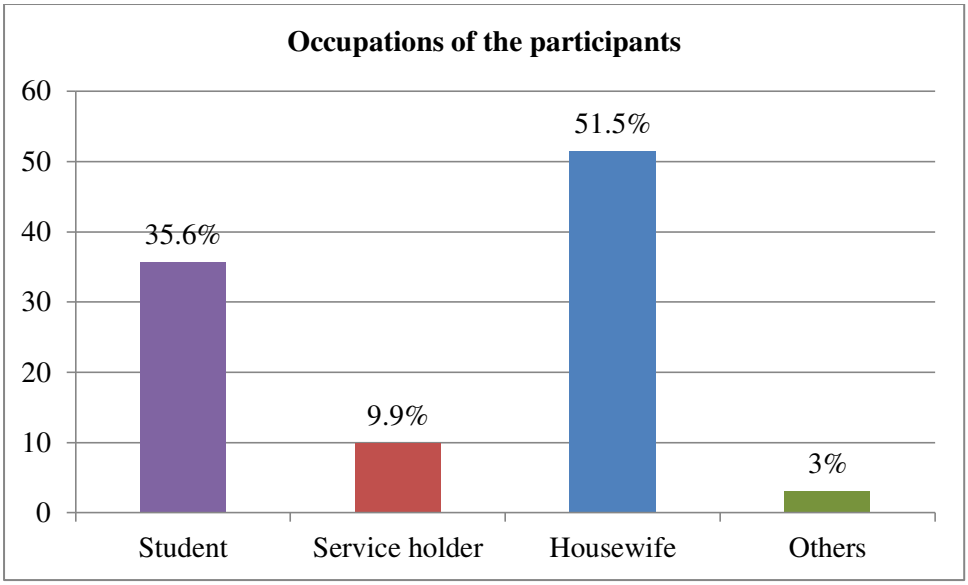


Figure No 3: Occupations of the participants

Regarding occupation of the participants, it was found that 52 (51.5%) participants were housewives, 36 (35.6%) participants were students and 10 (9.9%) participants were service holder (Figure no. 3).

Table no: 3 Frequency distribution of the respondents by BMI.

BMI	Frequency	
	N	**%**
Under weight (< 18.5)	3	3.00
Normal (18.5 – 24.9)	39	38.60
Over weight (25 – 29.9)	40	39.60
Obesity (> 30)	19	18.80
Mean ± SD	26.210±4.3153	

About BMI of the participants, it was revealed that 40 (39.60%) participants were overweight (25 – 29.9). It was also found that 39 (38.60%) participants had normal weight (18.5 – 24.9) and 19 (18.80%) participants were obese (> 30). The mean BMI was 26.21 and SD was 4.3153 (Table no. 3).

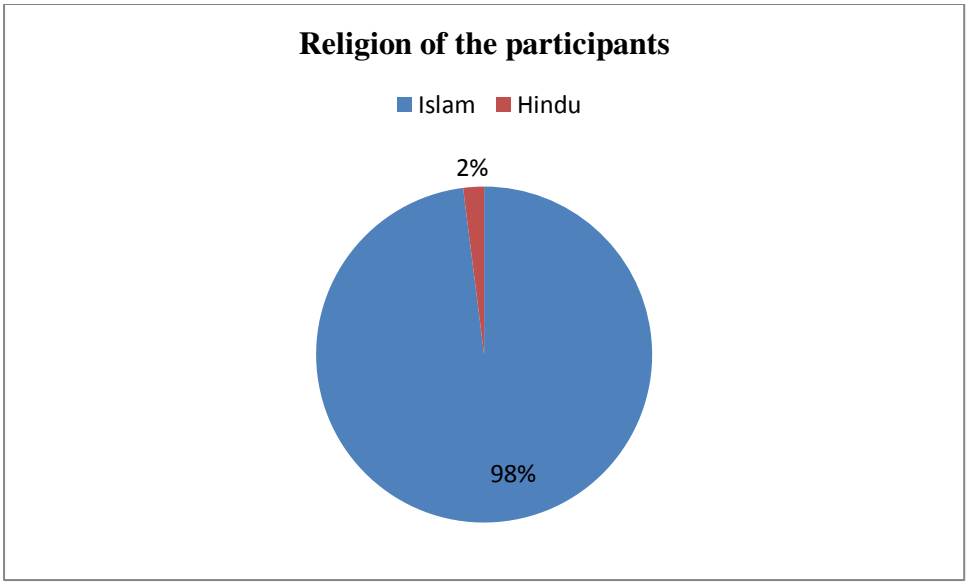


Figure No 4: Religion of the participants

The study showed that 99 (98%) participants were Muslim and 2 (2%) participants were Hindu (Figure no 4).

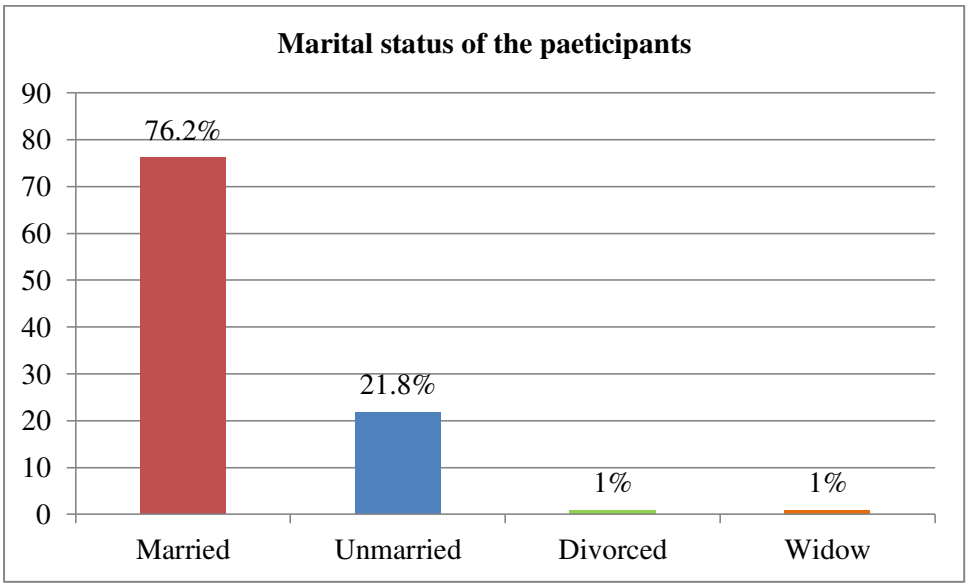


Figure No 5: Marital status of the group

It was found that out of 101 participants, 77 (76.2%) participants were married, 22 (21.8%) participants were unmarried, 1 (1%) participant was divorced and 1 (1%) participant was widow (Figure no 5).

Table No:4 Frequency distribution of the participants by monthly income

Taka	Frequency	
	N	**%**
Less than Taka 30000	44	43.60%
30000 - 60000 Taka	44	43.60%
60001-90000 Taka	3	3.00%
More than 90000 Taka	10	9.90%
Mean ± SD	43069.31±24428.777	

It was revealed that out of 101 participants, 44 (43.60%) participants monthly income was less than Taka 30000, 44(43.60%) participants monthly income were 30000-60000 Taka, 3(3.00%) participants monthly income 60001-90000 Taka, and 10(9.90%) participants monthly income more than Taka 90000. The mean of the participant's income was 43069.31 and standard deviation was 24428.77. (Table no 4).

4.2: Quality of life related PCOS question:

There are five domain of quality of life among women with polycystic ovary syndrome. They are

1. Emotions
2. Body hair
3. Weight
4. Infertility problems
5. Menstrual problems

It is composed of 26 items categorized into five sections: emotions (eight items), body hair (five items), weight concerns (five items), infertility problems (four items) and menstrual problems (four items).

Domain 1: Emotions: Items number in the PCOSQ (2, 4, 6, 11, 14, 17, 18, 20).

Table No 5: Depression of the participants having PCOS.

Depressed having PCOS of the participant	**Frequency**	
	N	**%**
All of the time	3	3
Most of the time	17	16.8
A good bit of the time	35	34.7
Some of the time	26	25.7
A little of the time	8	7.9
Hardly any of the time	7	6.9
None of the time	5	5
Total	101	100

The study showed that 35 (34.7%) participants had depression for a good bit of the time, 26 (25.7%) participants had suffered from depression some of the time and 17 (16.8%) participants suffered most of the time. (Table no 5).

Table no 6: Early tired of the participants.

Early tired of the participants	Frequency	
	N	%
All of the time	17	16.8
Most of the time	31	30.7
A good bit of the time	24	23.8
Some of the time	14	13.9
A little of the time	3	3.0
Hardly any of the time	1	1.0
None of the time	11	10.9
Total	101	100

The study revealed that 31 (30.7%) participants felt tired most of the time, 24 (23.8%) participants felt tired a good bit of the time, all of the time 17 (16.8%) participants felt tired all of the time and 14 (13.9%) participants felt tired some of the time (Table no 6).

Table No 7: Mood of the participants due to having PCOS.

Mood of the participants due to having PCOS	Frequency	
	N	%
All of the time	5	5.0
Most of the time	9	8.9
A good bit of the time	13	12.9
Some of the time	35	34.7
A little of the time	18	17.8
Hardly any of the time	14	13.9
None of the time	7	6.9
Total	101	100

The study found that 35 (34.7%) participants told they became moody some of the time due to having PCOS, 18 (17.8%) participants told they became moody a little of the time having PCOS and 13 (12.9%) participants told they became moody a good bit of the time having PCOS (Table no 7).

Table No:8 Low self-esteem of the participants due to having PCOS

Low self-esteem of the participants due to having PCOS	Frequency	
	N	%
Most of the time	2	2
A good bit of the time	10	9.9
Some of the time	27	27.7
A little of the time	19	18.8
Hardly any of the time	25	24.8
None of the time	18	17.8
Total	101	100

About low self-esteem of the participants due to having PCOS, it was found that 27 (27.7%) participants had it some of the time. It was also found that 25 (24.8%) participants told that it was hardly any of the time, 19 (18.8%) participants had it a little of the time (Table no.8).

Table no:9 Felt frightened getting cancer of the participants

Felt frightened getting cancer of the participants	Frequency	
	N	%
All of the time	3	3.0
Most of the time	17	16.8
A good bit of the time	31	30.7
Some of the time	15	14.9
A little of the time	7	6.9
Hardly any of the time	13	12.9
None of the time	15	14.9
Total	101	100

The study showed that 31 (30.7%) participants felt frightened a good bit of the time, 17 (16.8%) participants felt frightened most of the time, 15 (14.9%) participants felt frightened some of the time, 15 (14.9%) participants felt frightened none of the time and 13 (12.9%) participants felt frightened hardly any of the time (Table no 9).

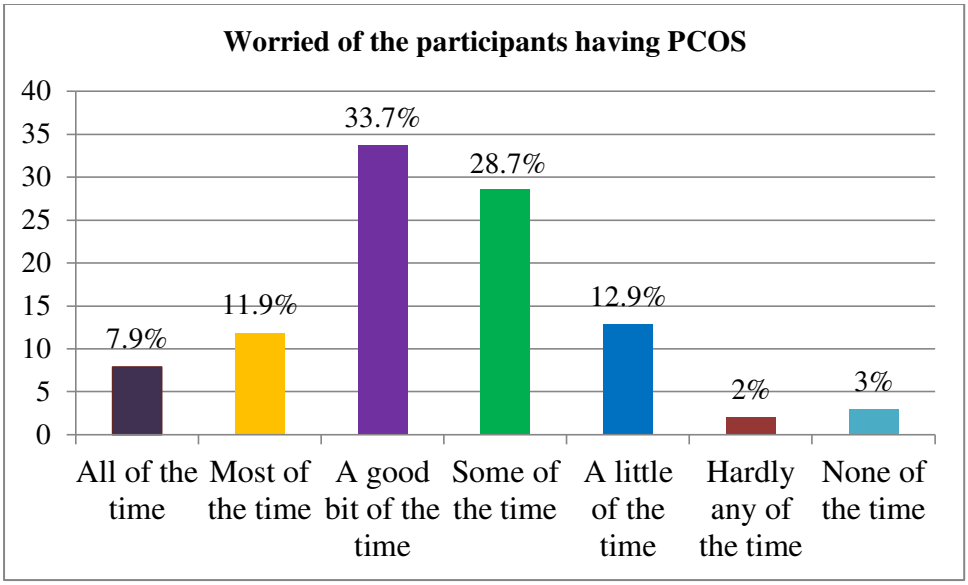


Figure no 6: Worried of the participants having PCOS.

The study revealed that 34 (33.7%) participants were worried a good bit of the time having PCOS, 29 (28.7%) participants became worried some of the time and 13 (12.9%) participants were worried a little of the time having PCOS (Figure no 6).

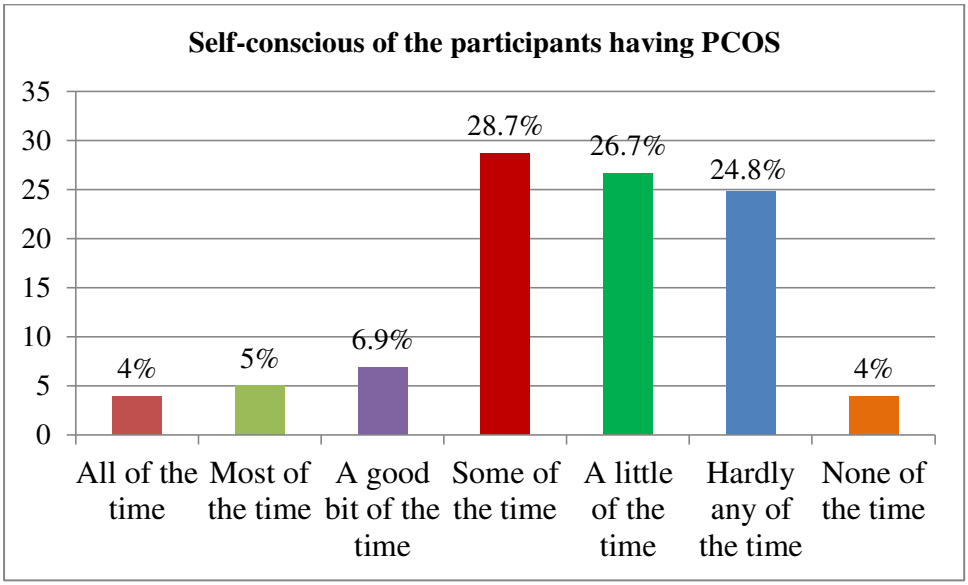


Figure no 7: Self-conscious of the participants having PCOS.

The study showed that 29 (28.7%) participants had self-conscious some of the time having PCOS, 27 (26.7%) participants had self-conscious a little of the time having PCOS and 25(24.8%) participants had self-conscious hardly any of the time having PCOS (Figure no 7).

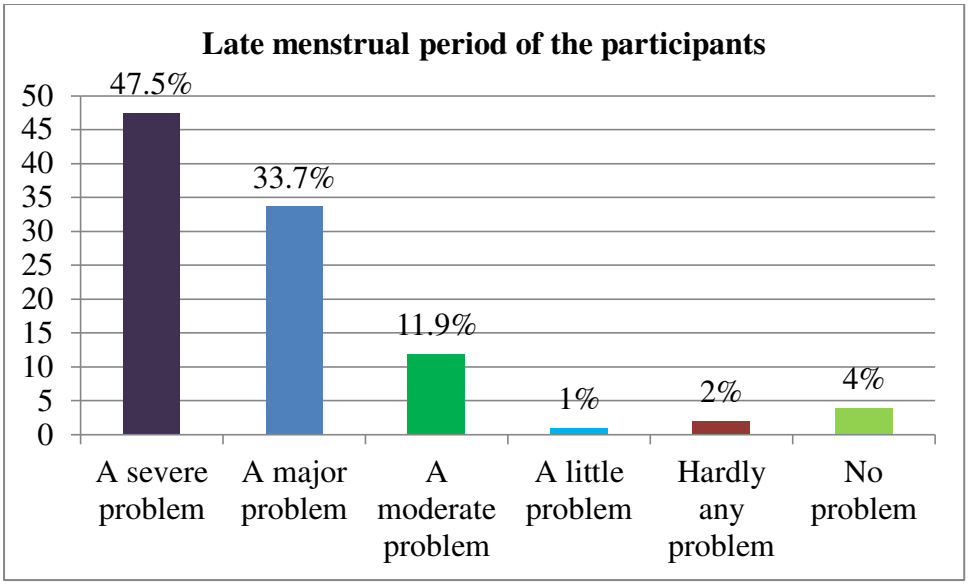


Figure no 8: Late menstrual period of the participants.

About late menstrual period of the participants, it was a severe problem to 48 (47.5%) of them. It was a major problem for 34 (33.7%) participants and moderate problem for 12 (11.9%) participants (Figure no 9).

Domain 2: Body hair: Item number in the PCOSQ (1, 9, 15, 16, 26)

Table no: 10 Growth of visible hair on chin of the participants.

Growth of visible hair on chin of the participants	Frequency	
	N	%
A severe problem	3	3.0
A major problem	13	12.9
A moderate problem	20	19.8
Some problem	18	17.8
A little problem	8	7.9
Hardly any problem	18	17.8
No problem	21	20.8
Total	101	100

About growth of visible hair on chin of the participants, it was a moderate problem to 20 (19.8%) to them. It was no problem to 21 (20.8%) participants and some problem for 18 (17.8%) participants (Table no10).

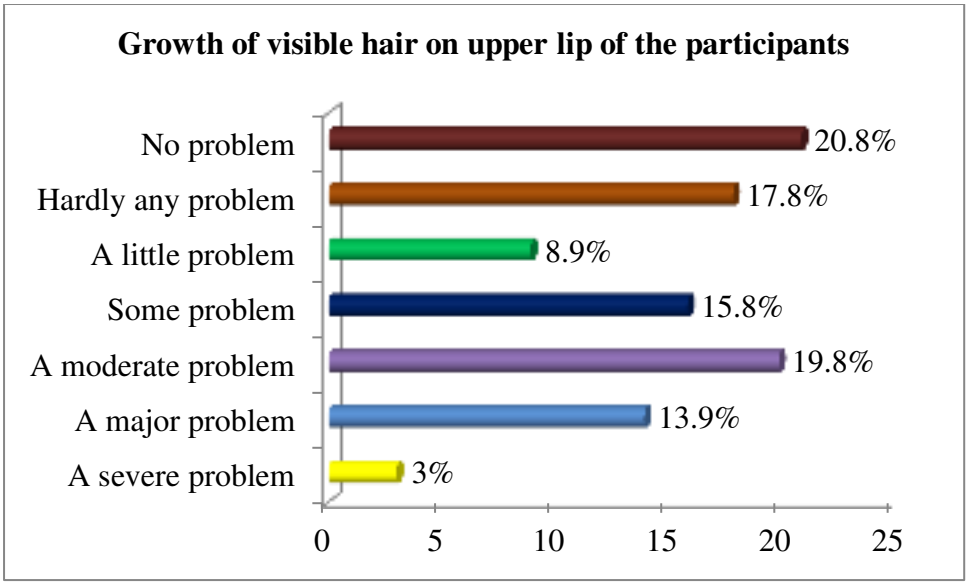


Figure no 9: Growth of visible hair upper lip of the participants.

About growth of visible hair upper lip of the participants, it was no problem for 21 (20.8%) participants. It was a moderate problem to 20 (19.8%) of them and it was hardly any problem for 18 (17.8%) participants (Figure no 9).

Table no: 11 Growth of visible hair on face of the participants.

Growth of visible hair on face of the participants	Frequency	
	N	%
A severe problem	3	3.0
A major problem	13	12.9
A moderate problem	21	20.8
Some problem	15	14.9
A little problem	11	10.9
Hardly any problem	17	16.8
No problem	21	20.8
Total	101	100

The study showed that growth of visible hair on face of the participants because of their PCOS. It was no problem for 21 (20.8%) participants. It was a moderate problem for 21 (20.8%) participants and it was hardly any problem to 17 (16.8%) of them (Table no 11).

Table no 12: Embarrassed of the participants due to excessive body hair.

Embarrassed of the participants due to excessive body hair	Frequency	
	N	%
A severe problem	2	2.0
A major problem	11	10.9
A moderate problem	16	15.8
Some problem	22	21.8
A little problem	9	8.9
Hardly any problem	19	18.8
No problem	22	21.8
Total	101	100

About embarrassed of the participants due to excessive body hair. It was a some problem for 22 (21.8%) participants. It was a hardly any problem for 19 (18.8%) participants and it was a moderate problem for 16 (15.8%) participants (Table no 12).

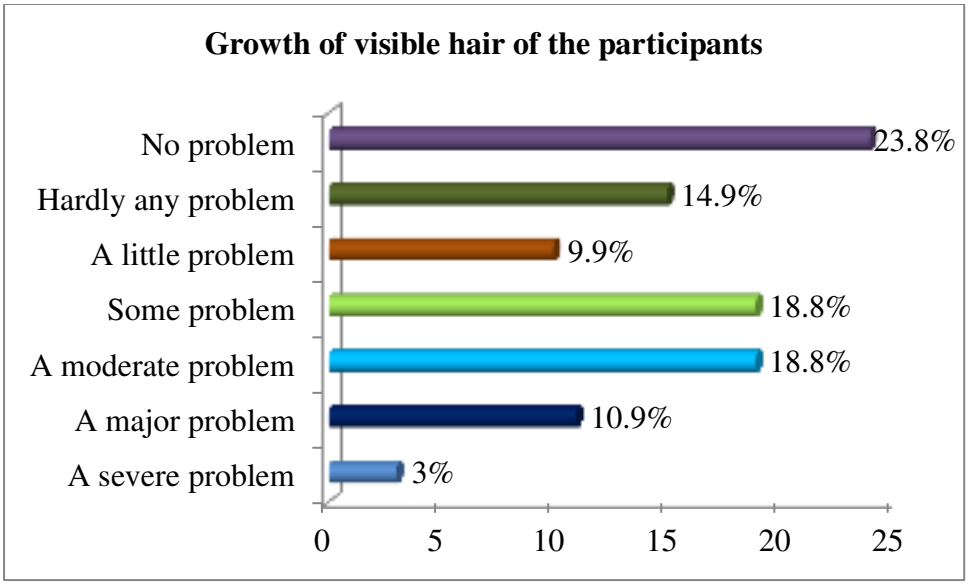


Figure no 10: Growth of visible body hair of the participants.

The study showed that growth of visible body hair of the participants because of their PCOS. It was a no problem for 24 (23.8%) participants. It was a moderate problem for 19 (18.8%) participants and it was some problem for 19 (18.8%) participants (Figure no 10).

Domain 3: weight: item number (3, 10, 12, 22, and 24).

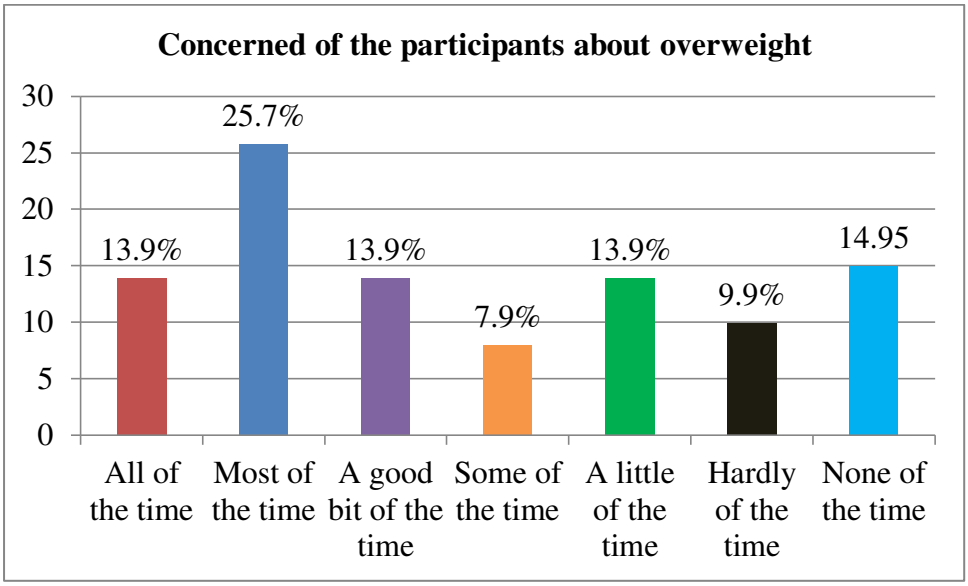


Figure No 11: Concerned of the participants about overweight.

The study showed that 26 (25.7%) participants concerned about overweight most of the time, 14 (13.9%) participants concerned about overweight all of the time and 8 (7.9%) participants concerned about overweight some of the time (Figure no 11).

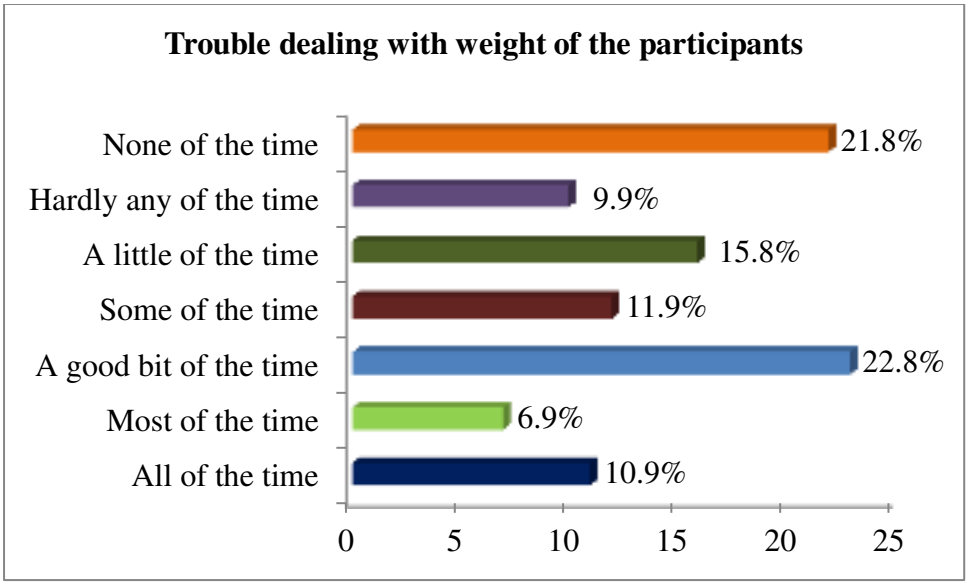


Figure no 12: Trouble dealing with weight of the participants

The study showed that 22 (21.8%) participants had trouble dealing a good bit of the time, 22 (21.8%) participants had trouble dealing none of the time and 16 (15.8%) participants had trouble dealing a little of the time (Figure no 12).

Table No: 13 Felt frustration in trying to lose weight of the participants.

Felt frustration in tying to lose weight of the participants	Frequency	
	N	%
All of the time	4	4.0
Most of the time	18	17.8
A good bit of the time	19	18.8
Some of the time	15	14.9
A little of the time	12	11.9
Hardly any of the time	12	11.9
None of the time	21	20.8
Total	101	100

The study showed that 21 (20.8%) participants felt frustrated none of the time, 19 (18.8%) participants felt frustrated a good bit of the time and 18 (17.8%) participants felt frustrated most of the time in trying to lose weight (Table no 13).

Table no 14: Feel like not sexy being overweight of the participants.

Feel like not sexy being overweight of the participants	Frequency	
	N	%
Most of the time	6	5.9
A good bit of the time	12	11.9
Some of the time	12	11.9
A little of the time	12	11.9
Hardly any of the time	26	25.7
None of the time	33	32.7
Total	101	100

The study showed 33 (32.7%) participants felt like not sexy none of the time, 26 (25.7%) participants hardly any of the time and 12 (11.9%) participants a good bit of the felt like not sexy being overweight (Table no 14).

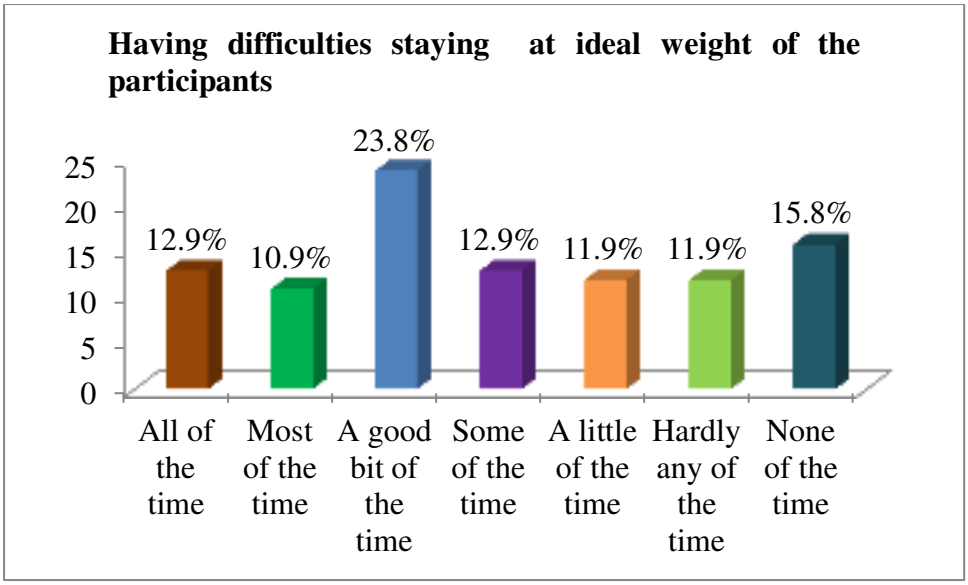


Figure no 13: Having difficulties staying at ideal weight of the participants

The study revealed that 24 (23.8%) participants had difficulties staying at ideal weight a good bit of the time, 16 (15.8%) participants had difficulties staying at ideal weight none of the time and 13 (12.9%) participants had difficulties staying at ideal weight all of the time (Figure no 13).

Domain 4: Infertility problem: Item number (5, 13, 23 and 25).

Table no 15: Concerned with infertility problems of the participants

Concerned with infertility problems of the participants	Frequency	
	N	%
All of the time	7	6.9
Most of the time	7	6.9
A good bit of the time	25	24.8
Some of the time	6	5.9
A little of the time	12	11.9
Hardly any of the time	6	5.9
None of the time	38	37.6
Total	101	100

The study showed that 38 (37.6%) participants concerned with infertility problems none of the time, 25 (24.8%) participants concerned with infertility problems a good bit of the time and 12 (11.9%) participants concerned with infertility problems a little of the time (Table no 15).

Table No:16 Felt afraid of not being able to have children of the participants.

Felt afraid of not being able to have children of the participants	Frequency	
	N	%
All of the time	7	6.9
Most of the time	5	5.0
A good bit of the time	26	25.7
Some of the time	10	9.9
A little of the time	13	12.9
Hardly any of the time	9	8.9
None of the time	31	30.7
Total	101	100

The study showed that 31 (30.7%) participants felt afraid none of the time, 26 (25.7%) participants felt afraid a good bit of the time and 13 (12.9%) participants felt afraid a little of the time of not being able to have children (Table no 16).

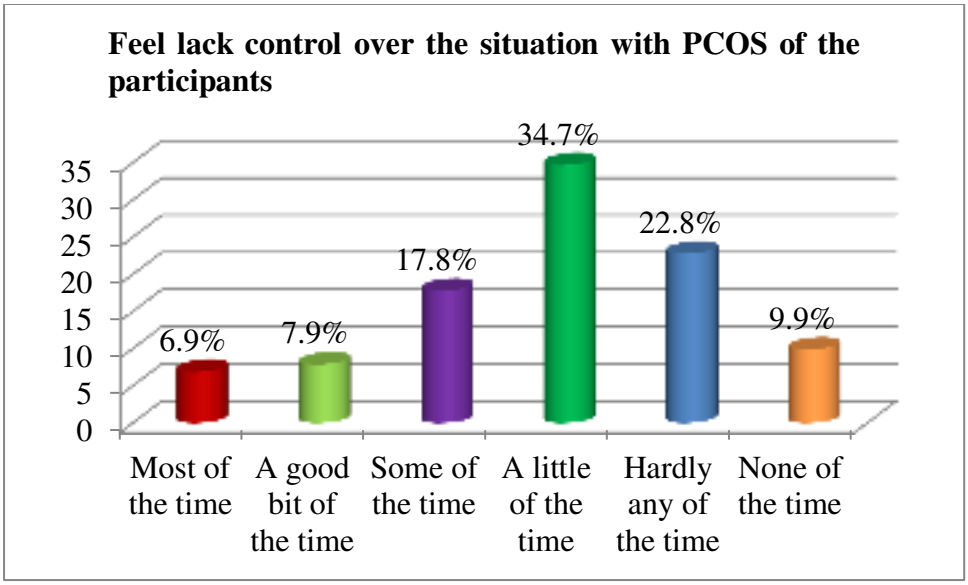


Figure no 14: Feel lack control over the situation with PCOS of the participants

The study revealed that 35 (34.7%) participants felt lack control a little of the time, 23 (22.8%) participants felt lack control hardly any of the time and 18 (17.8%) participants felt lack control a good bit of the time over the situation with PCOS (Figure no 14).

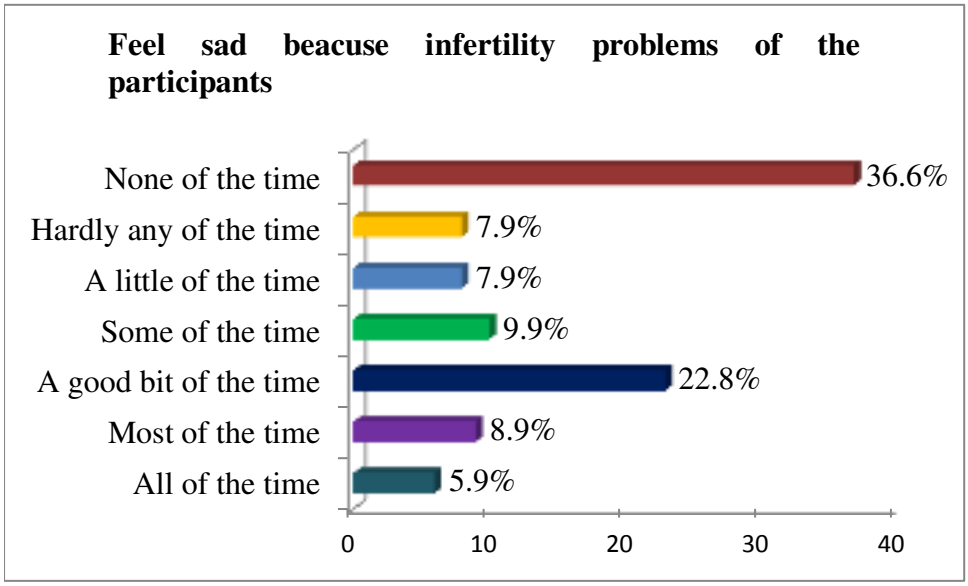


Figure no 15: Feel sad because infertility problems of the participants

The study showed that 37 (36.6%) participants felt sad none of the time, 23 (22.8%) participants felt sad a good bit of the time and 10 (9.9%) participants felt sad some of the time because infertility problem due to PCOS (Figure no 15).

Domain 5: Menstrual problem: Item number (7, 8, 19, and 21).

Table no 17: **Headache of the participants**

Headache of the participants	**Frequency**	
	N	**%**
A severe problem	28	27.7
A major problem	30	29.7
A moderate problem	12	11.9
Some problem	5	5
A little problem	1	1
Hardly any problem	17	16.8
No problem	8	7.9
Total	101	100

The study revealed that headache of the participants due to having PCOS. It was found that 30 (29.7%) participants had a major problem. It was also found that 28 (27.7%) had a severe problem and 17 (16.8%) had a hardly any problem (Table no 17).

Table no 18: Irregular menstrual periods of the participants

Irregular menstrual periods of the participants	Frequency	
	N	**%**
A severe problem	48	47.5
A major problem	35	34.7
A moderate problem	8	7.9
Some problem	2	2.0
A little problem	1	1.0
Hardly any problem	3	3.0
No problem	4	4.0
Total	101	100

About irregular menstrual period of the participants, it was a severe problem to 48 (47.5%) of them. It was a major problem for 35 (34.7%) participants and moderate problem for 8 (7.9%) participants (Table no 18).

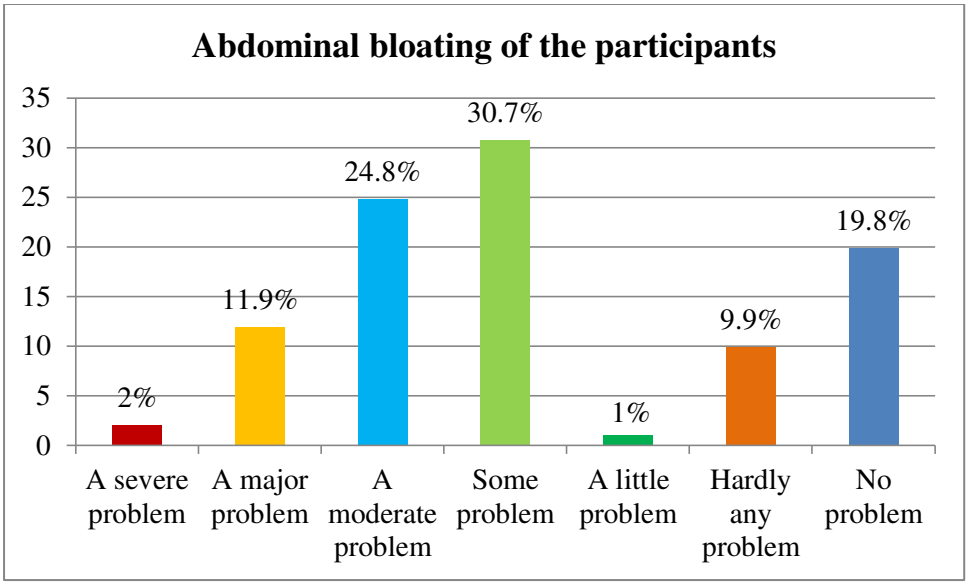


Figure no16: Abdominal bloating of the participants

The study showed that 31 (30.7%) participants had suffered from abdominal bloating some of time, 25 (24.8%) participants had suffered a moderate time and 20 (19.8%) participants suffered from abdominal bloating none of time (Figure no 16).

Table no 19: Menstrual cramps of the participants

Menstrual cramps of the participants	Frequency	
	N	%
A severe problem	32	31.7
A major problem	39	38.9
A moderate problem	11	10.9
Some problem	5	5.0
A little problem	1	1.0
Hardly any problem	4	4.0
No problem	9	8.9
Total	101	100

About menstrual cramps of the participants. It was found that 32 (31.7%) participants had a severe problem, 39 (38.9%) participants had a major problem and 11 (10.9%) participants had a moderate problem (Table no 19).

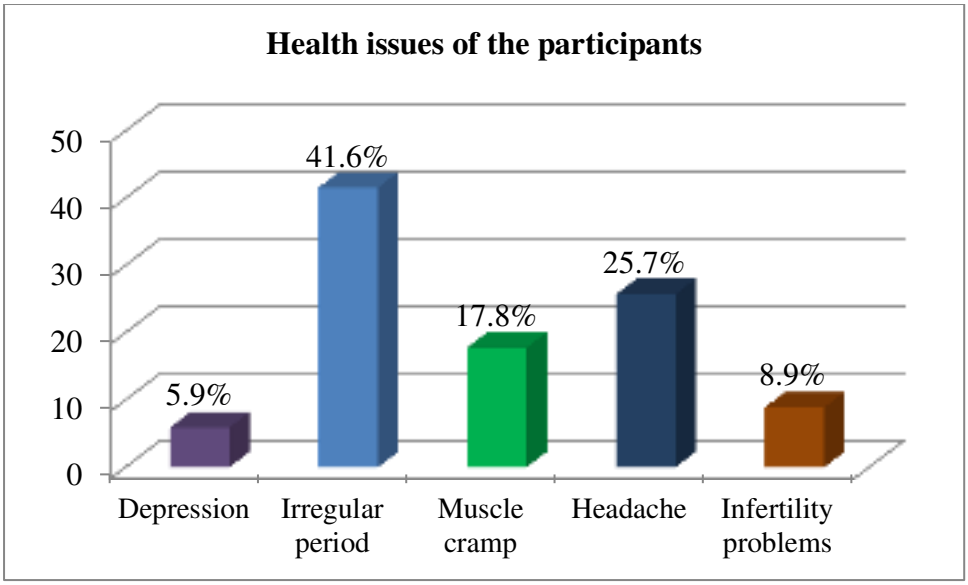


Figure no 17: **Health issues of the participants**

The study showed that 6 (5.9%) participants were depressed, 42 (41.6%) participants had irregular menstrual period, 18 (17.8%) participants suffered from muscle cramp, 26 (25.7%) participants suffered from headache and 9 (8.9%) participants had infertility problems (Figure no 17).

The association between quality of life with age and BMI of polycystic ovary syndrome.

The association between quality of life and age of the polycystic ovary syndromes patients:

Spearman correlation co-efficient was performed for correlation between quality of life and age of the polycystic ovary syndrome, the observed spearman correlation co-efficient (r) -0.041 and p value .683, so the result was not significant indicants association between quality of life and age of polycystic ovary syndrome.

Spearman correlation co-efficient (r)	P value
-0.041	.683

The association between quality of life and BMI of the polycystic ovary syndrome patients:

Spearman correlation co-efficient was performed for correlation between BMI and quality of life of the polycystic ovary syndrome, the observed spearman correlation co-efficient (r) -.342 and p value .000, so the result was highly statistically significant indicates association between quality of life and BMI of polycystic ovary syndrome.

Spearman correlation co-efficient (r)	P value
-.342	.000

Obtained total score of quality of life:

Mean and standard deviation: 57.20 and 13.60 . Here scoring range 0 to 100. Higher scores indicate better health status, and a mean score of 50 has been articulated as a normative value for all scales.

CHAPTER – V DISCUSSION

The present study was carried out with the objective of assessing the level of quality of life among women with polycystic ovary syndrome in different areas of Bangladesh. The collected data were analyzed with the Microsoft Office Excel 2010 with SPSS 25 version software program. The discussion of the result has been presented in the following section.

About distribution of the participants by age group in years, it was revealed in the study that 42.6% participants belonged to the age group of 18 - 24 years. It was also found that 36.6% participants were in the age group 25 – 31 years. The mean age and SD was 27.01 years and 6.932 respectively (Table no 1). Zahra et al founded that mean and standard deviation of the population was 26.56 and 4.33 (Zahra et al., 2018).

The study showed 39.60% participants were overweight (25 – 29.9). It was also found that 38.60% participants had normal weight (18.5 – 24.9) and 18.80% participants were obese (> 30). The mean BMI was 26.21 and SD was 4.3153 (Table no. 3). In a similar study founded that the mean BMI was 26.72 and SD 6.57 (Atilla et al., 2018).

The study showed that 14.9% participants had secondary level of education, 21.8% participants passed Higher secondary level, 34.7% participants were graduate and 2.0% participants were illiterate (Table no.2). Atilla et al showed that 26.2% participants were primary school graduates, 22.6% were secondary school graduates, 33.3% were high school graduates, and 17.9% were university graduates (Atilla et al., 2018).

Regarding living area, it was found that 92.1% participants lived in urban area, 2% participants lived in semi-urban area and 5.9% participants lived in rural area (Figure no.1). Another study showed that 77.9% were living in urban area (Aliasghari et al., 2017).

Regarding occupation of the participants, 51.5% participants were housewives, 35.6% participants were students and 9.9% participants were service holder (Figure no. 3). Aliasghari et al showed that majority of the women (62.6%) were housewives (Aliasghari et al., 2017).

About marital status more than three- quarters of women (76.2%) were married and 21.8% were unmarried. Atilla et al revealed that 34.5% were unmarried and 65.5 % were married (Atilla et al., 2018).

The study showed that 20.8% participants felt frustrated none of the time, 19 18.8% participants felt frustrated a good bit of the time and 17.8% participants felt frustrated most of the time in trying to lose weight (Table no 13).

The study showed that 30.7% participants had suffered from abdominal bloating some of time, 24.8% participants had suffered a moderate time and 19.8% participants suffered from abdominal bloating none of time (Figure no 16). The result showed that majority of the participants suffered from abdominal bloating.

It was found that 5.9% of the participants were depressed, 41.6% participants had irregular menstrual period, 17.8% participants suffered from muscle cramp, 25.7% participants suffered from headache and 8.9% participants had infertility problems having PCOS. Another research indicated that 25.7% women with PCOS were severely depressed (Aditi et al., 2018). Another researcher showed that 13.1% had irregular menstrual period (Sanjida et al., 2020).

The study showed that 25.7% participants concerned about overweight most of the time, 13.9% participants concerned about overweight all of the time and 7.9% participants concerned about overweight some of the time (Figure no 11). The result showed that majority of the participants concerned about their overweight.

In this research, women with polycystic ovary syndrome showed that irregular period was the most affected area of quality of life. Menstrual cycle disorders were the most common factors in reducing quality of life in women with PCOS. Jones et al found that women with PCOS had menstrual cycle disorders were related to quality of life (Jones et al., 2011).

In this study, there had some specific objectives to find out some association between quality of life with age and BMI of polycystic ovary syndrome. It was found the relationship was highly statistically significant. Spearman correlation co-efficient was performed for correlation between quality of life and age of the polycystic ovary syndrome, the observed spearman correlation co-efficient (r) -0.041 and p value .683 and spearman correlation co-efficient was performed for correlation between quality of life and BMI of the polycystic ovary syndrome, the observed spearman correlation co-efficient (r) -.342 and p value .000.

Results of the study indicated that mean and standard deviation of total score for quality of life in the study women was 57.20 and 13.60. Higher scores indicate better health status, and a mean score of 50 has been articulated as a normative value for all scales. Another researcher found that mean and standard deviation of total score for quality of life in women was 45.8 and 11.3 (Aliasghari et al., 2017).

CHAPTER – VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Polycystic ovary syndrome is a worldwide health problem in women of reproductive age. It is estimated that 5-10% of women afflicted by the disease. Physical symptoms in PCOS cause depression, irregular period, muscle cramp, headache and decrease the Quality of Life (QoL).

It was a descriptive type of cross-sectional study among women with polycystic ovary syndrome. The chief objective of the study was to assess the level of quality of life among women with polycystic ovary syndrome in different areas of Bangladesh. Data were collected from different areas of Bangladesh. This study duration was 12 months from 1st July 2022 to 30th June 2023. Data were collected through the face to face interviews with participants using the pretested questionnaire Inclusion criteria was adult female patients in the reproductive age (18-45). Descriptive analysis was done by SPSS-25 version program according to the objectives of the study.

About distribution of the participants by age group in years, it was revealed in the study that 42.6% participants belonged to the age group of 18 - 24 years. It was also found that 36.6% participants were in the age group 25 – 31 years. The mean age and SD was 27.01 years and 6.932 respectively.

The study showed 39.60% participants were overweight (25 – 29.9). It was also found that 38.60% participants had normal weight (18.5 – 24.9) and 18.80% participants were obese (> 30). The mean BMI was 26.21 and SD was 4.3153. Regarding living area, it was found that 92.1% participants lived in urban area, 2% participants lived in semi-urban area and 5.9% participants lived in rural area.

It was found that 5.9% of the participants were depressed, 41.6% participants had irregular menstrual period, 17.8% participants suffered from muscle cramp, 25.7% participants suffered from headache and 8.9% participants had infertility problems having PCOS.

PCOS is a multi-symptomatic disease, which entails a number of consequences, both physical as well as psychological. Depression, irregular menstrual period, muscle cramps and high BMI decrease the quality of life.

6.2 Recommendation:

The following recommendations have been made on the basis of the findings of the study**.**

1. The study showed that out of 101 participants, 5.9% of the participants were depressed, 41.6% participants had irregular menstrual period, 17.8% participants suffered from muscle cramp, 25.7% participants suffered from headache and 8.9% participants had infertility problems having PCOS. The factors related to quality of life should be identified to prevent the condition among the women.
2. Further research should be conducted to acquire knowledge on the factors related to polycystic ovary syndrome. It will help to prevent the complication and improve quality of life.
3. A well designed research should be carried out to get real picture of the situation covering more study areas.
4. Random sampling should be applied to select the participants for ensuring the representativeness of the population.
5. Time for the present study was short. The researcher collected data from the participants for seven days. It was not sufficient for the study. The time for data collection should be two months would be effective for quality study.

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Appendix - A

Institutional Review Board (IRB) Permission Letter

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref. No: SCMST/PT/ERB-2017-18/1-2023/10

Date : .....

23th February'2023

To,

The Managing Director,

Podma Lab & Consultation Center, Joypurhat.

Sub: Permission to collect data

Dear Sir,

Ethical review board (ERB) of SCMST pleased to inform you that Israt Naher of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Quality of life among women with polycystic ovary syndrome" which has been reviewed by ERB of SCMST and we are giving permission to her to conduct this study. Her data collection area is different hospital in Bangladesh, so she wants to take data from your Hospital.

I hope you will give kind permission to her to collect data to complete her study successfully and oblige thereby.

Thanking You,

23.02.23

Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

23.02.23

Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1206. Mobile: 01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Appendix - B

Permission letter for data collection

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/10*

Date : .....

23rd February'2023

To,
The Director,
OGSB Hospital, Mirpur-13, Dhaka.

Sub: Permission to collect data

Dear Sir,

Ethical review board (ERB) of SCMST pleased to inform you that Israt Naher of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Quality of life among women with polycystic ovary syndrome" which has been reviewed by ERB of SCMST and we are giving permission to her to conduct this study. Her data collection area is different hospital in Bangladesh, so she wants to take data from your Hospital.

I hope you will give kind permission to her to collect data to complete her study successfully and oblige thereby.

Thanking You,

23.02.'23

Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

23.02.23

Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

permitted.

13.3.'23

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1206. Mobile: 01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

Appendix - C

সম্মতি পত্র

আসসালামু আলাইকুম/ নমস্কার,

আমি ইসরাত নাহার, সাইক কলেজ অব মেডিকেল সাইন্স অ্যান্ড টেনোলজি এর বিএসসি ইন ফিজিওথেরাপি বিভাগের শেষ বর্ষের ছাত্রী। আমি আমার শেষ বর্ষের পড়াশোনা শেষ করার জন্য একটি গবেষণা করছি যার শিরোনাম হচ্ছে পলিসিস্টিক ওভারিয়ান সিন্ড্রোমে আক্রান্ত মহিলাদের মধ্যে জীবনযাত্রার মান। এটা আমার অধ্যয়নের একটা অংশ। উল্লেখ্য অধ্যয়ন পরিচালনার জন্য প্রয়োজনীয় কিছু প্রশ্নের তালিকা নিচে দেওয়া আছে। আপনাকে আমার গবেষণার জন্য নির্বাচন করা হয়েছে। এই গবেষণার জন্য আপনাকে কিছু প্রশ্ন করা হবে, যা ১৫-২০ মিনিটের মত লাগবে। আমার গবেষণার নাম হচ্ছে **পলিসিস্টিক ওভারিয়ান সিন্ড্রোমে আক্রান্ত মহিলাদের মধ্যে জীবনযাত্রার মান**।

সাক্ষাৎকার নেওয়ার সময় যদি আপনি কোন মানসিক অশান্তি, সামাজিক ও অর্থনৈতিক ঝুঁকি অথবা অন্যকোন শারীরিক সমস্যা বোধ করেন তাহলে আমাকে বলবেন, আমি তাৎক্ষনিক সাক্ষাৎকার বন্ধ করে দিবো। আমি প্রতিশ্রুতি দিচ্ছি যে এইটা আপনার জন্য কোন ক্ষতি বা ঝুঁকির কারণ হবে না। এই সাক্ষাৎকারে আপনার অংশ গ্রহণ হচ্ছে আপনার নিজের ইচ্ছায় এবং আপনি যে কোন সময় চাইলে এটা বন্ধ করতে পারবেন। সাক্ষাৎকার চলাকালীন সময় যদি আপনার কোন প্রশ্নের উত্তর দিতে ইচ্ছা না করে তাহলে আপনি সেটা বাদ দিতে পারবেন। সাক্ষাৎকার বিষয়ে আপনার কোনকিছু জানার থাকলে আপনি আমার সুপারভাইজার প্রভাষক মোঃ শরিফুল ইসলাম এর সাথে যোগাযোগ করতে পারবেন মিরপুর, ঢাকা। সাক্ষাৎকার শুরু করার আগে কি আপনার কোন প্রশ্ন আছে?

হ্যাঁ ☐ না ☐

গবেষকের স্বাক্ষরঃ..... তারিখঃ.....

অংশগ্রহণকারীর স্বাক্ষরঃ..... তারিখঃ.....

মোবাইল নাম্বারঃ .....

সাক্ষীর স্বাক্ষারঃ..... তারিখঃ.....

সাক্ষীর মোবাইল নাম্বারঃ.....

Consent form

Dear participant, Respondent ID no: | | | |

I am Israt Naher, student of B.sc in physiotherapy program in the Department of Physiotherapy at SAIC College of Medical Science and Technology (SCMST) which is affiliated by Dhaka University conducting the study entitled **"Quality of life among women with polycystic ovary syndrome"** as a part my thesis work for the partial fulfillment of Bachelor degree. There is a list of question you need to fill up which include socio-demographic and quality of life related information. For spending your time to participate in this face to face interview which will take around 10-15 minutes. There is list of questionnaires and you need to fill up each answer. The information gained from this questionnaire will be used for academic purpose and will be kept confidential. Your participation in this study is totally voluntarily and you have the right to withdraw from the interview without any clarification at any moment. You can ask any question to the researcher and/or my research supervisor, looking forward your kind cooperation.

Declaration of the participants,

I have been invited to participate in this survey. The foregoing information has been read to me and that have been answered to my satisfaction. I have noticed that my participation in this study is totally voluntary and I have the right to withdraw from the interview at any clarification. I give my consent voluntarily to be participants in this study.

Respondent name: …….....

Signature :..... Date:.....

Signature of the researcher: …… Date:.....

Signature of the witness: …… Date:.....

Mobile no: ……

Appendix - D

প্রশ্নাবলি (বাংলা)

পলিসিস্টিক ওভারিয়ান সিন্ড্রোমে আক্রান্ত মহিলাদের মধ্যে জীবন যাত্রার মান।

কোড নম্বর ঃ ☐ তারিখ ঃ

অংশগ্রহণকারীর নাম:.....

ঠিকানা:.....

মোবাইল নম্বর:.....

বিভাগ ঃ ১। সামাজিক জনসংখ্যার তথ্য (অনুগ্রহপূর্বক খালি জায়গায় নম্বর লিখুন)

ক্রঃ নং	প্রশ্ন	উত্তর
১.	আপনার বয়স কত ?	
২.	আপনি কোথায় বসবাস করেন ? ১। শহর ২। মফস্বল ৩। গ্রাম	
৩.	পরিবারের ধরণ কেমন ? ১। একক পরিবার ২। যৌথ পরিবার	
৪.	আপনার শিক্ষাগত যোগ্যতা কি? ১। নিরক্ষর ২। প্রাথমিক ৩। মাধ্যমিক ৪। উচ্চ মাধ্যমিক ৫। স্নাতক ৬। স্নাতকোওর ৭। অন্যান্য	
৫.	আপনার পেশা কি ? ১। ছাত্রী ২। চাকুরীজীবি ৩। গৃহিনী ৪। অন্যান্য	
৬.	আপনার ওজন কত (কিলোগ্রাম) ?	
৭.	আপনার উচ্চতা কত (ফিট) ?	
৮.	আপনার বিএমআই ?	

৯.	আপনার ধর্ম কি ? ১। ইসলাম ২। হিন্দু ৩। বৌদ্ধ ৪। খ্রিষ্টান ৫। অন্যান্য	
১০.	আপনার বৈবাহিক অবস্থা কি ? ১। বিবাহিত ২। অবিবাহিত ৩। তালাকপ্রাপ্ত ৪। বিধবা	
১১.	আপনার পরিবারের মাসিক আয় কত (টাকা)?	

বিভাগ ঃ ২ জীবনমান সম্পর্কিত পিসিওএস মহিলাদের জন্য প্রশ্নাবলি।

আপনি কতটা অনুভব করেছেন যে আপনার থুতনির দৃশ্যমান লোমের বৃদ্ধি একটি সমস্যা করেছিল গত দুই সপ্তাহে।

1.	থুতনির উপর দৃশ্যমান লোমের বৃদ্ধি ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই
		○	○	○	○	○	○	○

গত দুই সপ্তাহে আপনি কতটা সময় অনুভব করেছেন

2.	পিসিওএস থাকার কারনে আপনি কতটা হতাশ ?	সবসময়	অধিকাংশ সময়	বেশিরভাগ সময়	কিছু সময়	অল্প সময়ের জন্য	হঠাৎ করে কোনো সময়	কোন সময়ই নয়
		○	○	○	○	○	○	○
3.	অতিরিক্ত ওজন নিয়ে আপনি কি চিন্তিত ?	○	○	○	○	○	○	○
4.	আপনি সহজে ক্লান্ত হয়ে যান ?	○	○	○	○	○	○	○
5.	বন্ধাত্ব সমস্যা নিয়ে আপনি কি চিন্তিত ?	○	○	○	○	○	○	○
6.	পিসিওএস থাকার কারনে আপনার মেজাজ খারাপ থাকে ?	○	○	○	○	○	○	○

আপনার শেষ মাসিকের সাথে সম্পর্কিত নিম্নলিখিত সমস্যাগুলোর জন্য আপনি কতটা সমস্যায় পড়েছিলেন।

7.	আপনার কি মাথাব্যথা ছিল ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই

		○	○	○	○	○	○	○
8.	আপনার মাসিক কি অনিয়মিত ?	○	○	○	○	○	○	○

আপনার উপরের ঠোঁটের দৃশ্যমান লোমের বৃদ্ধি কতটা আপনার জন্য কতটা সমস্যা ছিল।

9.	উপরের দিকে দৃশমান লোমের বৃদ্ধি ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই
		○	○	○	○	○	○	○

গত দুই সপ্তাহে, আপনি কতটা সময় পেয়েছিলেন

10.	আপনার ওজন মোকাবেলা করতে সমস্যা হয়েছিল ?	সবসময়	অধিকাংশ সময়	বেশিরভাগ সময়	কিছু সময়	অল্প সময়ের জন্য	হঠাৎ করে কোনো সময়	কোন সময়ই নয়
		○	○	○	○	○	○	○
11.	আপনার পিসিওএস থাকার ফলে আত্মসম্মান কমে গিয়েছিল ?	○	○	○	○	○	○	○
12.	ওজন কমানোনোর চেষ্টায় হতাশা অনুভব করেছিলেন ?	○	○	○	○	○	○	○
13.	সন্তান সম্ভাবা হতে না পেরে ভয় পেয়েছিলেন ?	○	○	○	○	○	○	○
14.	ক্যান্সার হওয়ার ভয় পেয়েছিলেন?	○	○	○	○	○	○	○

গত দুই সপ্তাহে নিম্নলিখিত সমস্যাগুলোর জন্য আপনি কতটা সমস্যায় পড়েছেন

15.	আপনার মুখের দৃশ্যমান লোমের বৃদ্ধি ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই
		○	○	○	○	○	○	○
16.	শরীরের অতিরিক্ত লোম নিয়ে বিবৃত ছিলেন?	○	○	○	○	○	○	○

গত দুই সপ্তাহে আপনি কতটা সময় পেয়েছিলেন।

17.	পিসিওএস নিয়ে চিন্তিত ছিলেন ?	সবসময়	অধিকাংশ সময়	বেশিরভাগ সময়	কিছু সময়	অল্প সময়ের জন্য	হঠাৎ করে কোনো সময়	কোন সময়ই নয়
		○	○	○	○	○	○	○
18.	পিসিওএস থাকার ফলে আত্মসচেতন ছিলেন ?	○	○	○	○	○	○	○

আপনার শেষ মাসিকের সাথে সম্পর্কিত, নিম্নলিখিত সমস্যাগুলোর জন্য আপনি কতটা সমস্যায় পড়েছিলেন।

19.	পেট ফুলে গিয়েছিল ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই
		○	○	○	○	○	○	○
20.	দেরিতে মাসিক হয়েছিল?	○	○	○	○	○	○	○
21.	মাসিকের সময় মাংসপেশী সংকোচন হয়েছিল ?	○	○	○	○	○	○	○

গত দুই সপ্তাহে আপনি কতটা সময় পেয়েছেন।

22.	অতিরিক্ত ওজনের কারনে মনে হয় আপনি আকর্ষনীয় নন?	সবসময়	অধিকাংশ সময়	বেশিরভাগ সময়	কিছু সময়	অল্প সময়ের জন্য	হঠাৎ করে কোনো সময়	কোন সময়ই নয়
		○	○	○	○	○	○	○
23.	পিসিওএস কারনে পরিস্থিতির উপর নিয়ন্ত্রনের অভাব অনুভব করেছেন ?	○	○	○	○	○	○	○
24.	আপনার ওজন নিয়ন্ত্রনে রাখতে অসুবিধা হয় ?	○	○	○	○	○	○	○
25.	বন্ধ্যান্ত সমস্যার কারনে দুঃখবোধ করেন ?	○	○	○	○	○	○	○

গত দুই সপ্তাহে আপনার শরীরে দৃশ্যমান লোমের বৃদ্ধি কতটা সমস্যা করেছে ।

26.	আপনার শরীরের দৃশ্যমান লোমের বৃদ্ধি ?	গুরুত্বর সমস্যা	প্রধান সমস্যা	মাঝারি সমস্যা	সামান্য সমস্যা	একটু সমস্যা	হঠাৎ সমস্যা দেখা দেয়	সমস্যা নেই
		○	○	○	○	○	○	○

English questionnaire

Quality of life among women with polycystic ovary syndrome

Code No: .....

Date.....

Participant Name: …….

Address.....

Mobile.....

Section: 1. Socio-demographic information

Q.N	Question	Ans.
1	What is your age?	
2	Where do you live? 1. Urban 2. Semi Urban 3. Rural	
3	What is your family type? 1. Nuclear 2. Joint	
4	What is your education level? 1.Illiterate 2.Primary 3.Secondary 4.Higher-secondary 5.Graduate 6.Post-graduate 7.Others	
5	What is your occupation? 1.Student 2.Service-holder 3.Housewife 4.Others	
6	What is your weight? (KG)	

7	What is your height? (feet)	

8	Your BMI (Body mass index)	
9	What is your religion? 1.Islam 2.Hindu 3.Buddhist 4.Christian 5.Others	
10	What is your marital status? 1.Marrird 2.Unmarried 3.Divorced 4.Widow	
11	What is your family's monthly income? (Taka)	

Section: 2 Quality of life related questionnaire:

To what extent have you felt that growth of visible hair on your chin has been a problem for you during the last two weeks:

1	Growth of visible hair on chin?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any problem	No problem
		○	○	○	○	○	○	○

During the past two weeks, how much of the time have you felt:

2	Depressed as a result of having PCOS?	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	Hardly any of the time	None of the time
		○	○	○	○	○	○	○
3	Concerned about being overweight?	○	○	○	○	○	○	○
4	Early tired?	○	○	○	○	○	○	○
5	Concerned with infertility problems?	○	○	○	○	○	○	○
6	Moody as a result of having PCOS	○	○	○	○	○	○	○

In relation to you last menstruation, how much were the following issues a problem for you:

	Headaches?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any problem	No problem
		○	○	○	○	○	○	○
8	Irregular menstrual periods?	○	○	○	○	○	○	○

To what extent has growth of visible hair on your upper lip been a problem for you during the <u>last two weeks:</u>

9	Growth of visible hair on upper lip?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any problem	No problem
		○	○	○	○	○	○	○

During the past <u>two weeks</u>, how much of the time have you:

10	Had trouble dealing with your weight?	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	Hardly any of the time	None of the time
		○	○	○	○	○	○	○
11	Had low self-esteem as a result of having your PCOS?	○	○	○	○	○	○	○

12	Felt frustration in trying to lose weight?	○	○	○	○	○	○	○
13	Felt afraid of not being able to have children?	○	○	○	○	○	○	○
14	Felt frightened of getting cancer?	○	○	○	○	○	○	○

Over the <u>last two weeks</u>, to what extent the following issues have been a problem for you:

15	Growth of visible hair on your face?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any of the time	No problem
		○	○	○	○	○	○	○
16	Embarrassment about excessive body hair?	○	○	○	○	○	○	○

During the <u>past two weeks</u> how much of the time have you been:

17	Worried about having PCOS?	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	Hardly any of the time	None of the time
		○	○	○	○	○	○	○
18	Self- conscious as a result of having PCOS?	○	○	○	○	○	○	○

In relation to <u>your last menstruation</u>, how much the following issues were a problem for you:

19	Abdominal Bloating?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any problem	No problem
		○	○	○	○	○	○	○
20	Late menstrual period?	○	○	○	○	○	○	○
21	Menstrual cramps?	○	○	○	○	○	○	○

How much of the time during <u>the last two weeks</u> did you:

22	Feel like you are not sexy because of being overweight?	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	Hardly any of the time	None of the time
		○	○	○	○	○	○	○
23	Feel a lack of control over the situation with PCOS?	○	○	○	○	○	○	○

24	Have difficulties staying at your ideal weight?	○	○	○	○	○	○	○
25	Feel sad because of infertility problems?	○	○	○	○	○	○	○

To what extent has growth of visible body hair been a problem for you during the <u>last two weeks:</u>

26	Growth of visible body hair?	A severe problem	A major problem	A moderate problem	Some problem	A little problem	Hardly any problem	No problem
		○	○	○	○	○	○	○